Minnehaha Creek Watershed District *REQUEST FOR BOARD ACTION*

MEETING DATE: April 26, 2018

TITLE: Ordering of the Minnehaha Creek FEMA Repair Project and Authorization to execute a Design and Construction Oversight Contract for the Minnehaha Creek FEMA Repair Project

RESOLUTION NUMBER: 18-042

PREPARED BY: Tiffany Schaufler

E-MAIL: tschaufler@minnehahacreek.org **TELEPHONE:** 952-641-4513

REVIEWED BY: ☐Administrator ☒ Counsel ☐ Program Director:
☐ Board Committee ☐ Engineer ☐ Other

WORKSHOP ACTION:

☐ Advance to Board mtg. Consent Agenda. ☐ Advance to Board meeting for discussion prior to action.

☐ Refer to a future workshop (date):_____ ☐ Refer to taskforce or committee (date):_____

☐ Return to staff for additional work. ☐ No further action requested.

☒ **Other (specify): Seeking final approval on April 26, 2018.**

PURPOSE or ACTION REQUESTED:

- Formal ordering of the Minnehaha Creek FEMA Repair Project
- Authorization to execute a contract with Wenck for design and construction oversight services for the Minnehaha Creek FEMA Repair Project

PROJECT/PROGRAM LOCATION:
Minnehaha Creek Subwatershed within the City of Minneapolis

PROJECT TIMELINE:

- May-June 2018 – Design Repairs
- July 2018 – Seek Construction Bids
- August 2018 – Select Construction Contractor
- September 2018-June 2019 – Construct Repairs

PROJECT/PROGRAM COST:
Fund name and number: FEMA Flood Repair, 3148
2018 Budget: $584,940
Expenditures to date: $85,229
Requested amount of funding: $330,112

PAST BOARD ACTION:

- September 11, 2014: RES 14-074 – Authorization to contract with Wenck Associates to develop 2014 flood report (included performing a damage assessment on the District's six major creeks to apply for FEMA funding)
- November 13, 2014 – Board discussion on the 2014 flood damage and FEMA process
- June 18, 2015 – FEMA funding approval update
- December 17, 2015: RES 15-101 – Acceptance of the 2014 MCWD Flood Report (included a summary of damage submitted to FEMA and maps of the damage locations)
- February 23, 2017: RES 17-016 – Authorization to Execute Grant Agreements for Minnehaha Creek Stormwater Management and Six Mile Creek - East Auburn Stormwater Enhancement Project
- February 23, 2017: RES 17-017 – Authorization to enter into a Memorandum of Understanding with the City of Minneapolis and Minneapolis Park and Recreation Board and Issue a Request for Qualifications for the Integrated Planning of the Minnehaha Creek Subwatershed in Minneapolis
- September 14, 2017: 17-059 -- Authorization to Execute a Contract for Preliminary Design for FEMA Repairs and Minnehaha Creek Corridor Planning

SUMMARY:

Strategic Context:

Within the Minnehaha Creek subwatershed, the District is focusing planning and capital improvement resources on addressing the following strategic natural resource objectives:

- Improving **water quality** through regional stormwater management
- Managing **water quantity** to alleviate flooding while improving baseflow within the Creek
- Enhancing **ecological integrity** by restoring channel morphology and expanding, enhancing and connecting riparian greenspace.

Pursuant to the District's vision policy, *Balanced Urban Ecology*, these strategic natural resource objectives are recognized as being integral to planning and building **thriving communities,** in close partnership with local municipalities, state-regional agencies, landowners, business leaders, and the development community.

It is through this strategic lens that the District has evaluated and implemented opportunities to restore natural systems, in synergy with the built environment.

Since 2009, within the Minnehaha Creek subwatershed, efforts have been specifically focused on planning and implementation within the Minnehaha Creek Greenway, between West 36th Street and Meadowbrook Lake, in Hopkins and St. Louis Park. This area has historically represented one of the most degraded sections of the Minnehaha Creek system, with the highest pollutant loading rates per unit area and a heavily degraded and fragmented stream corridor. Over the past eight years the District has made significant progress towards its strategic goals within this stretch of Minnehaha Creek by implementing a series of public private partnerships.

More recently, the District's planning and implementation has expanded downstream into Arden Park, where local infrastructure investments and the flooding of 2014 catalyzed a partnership with the City of Edina to evaluate options for improving water quality and ecological integrity by managing regional stormwater runoff, restoring channel morphology, and connecting upstream and downstream section of the Creek.

Planning and Implementation within Minneapolis:

In an effort to address the District's strategic natural resource objectives further downstream, the District is planning to focus planning and project efforts in Minneapolis. The District has worked with the City of Minneapolis (City) and Minneapolis Park and Recreation Board (MPRB) on various analyses in recent years to identify opportunities for stormwater management and stream improvements on MPRB land. MPRB and the City are expecting to make various infrastructure improvements in the coming years. The District, MPRB and the City are looking to identify opportunities for collaboration to integrate stormwater management, recreation improvements, stormwater improvements, and natural resource improvements along the Minnehaha Creek corridor.

The flooding of 2014 also caused erosion and damage to the Minnehaha Creek bank, in the City of Minneapolis. As the District worked to secure Federal Emergency Management (FEMA) funding to repair the damage sites along the Minneapolis section of the Creek, discussions began between MCWD, the City and the MPRB, on how the three agencies might partner to develop a shared vision of the future, and set of natural resource implementation priorities, within Minneapolis.

Subsequently, on February 23, 2017, the MCWD Board of Managers authorized execution of a Memorandum Of Understanding (MOU) between the three agencies (MCWD-MPRB-City). The MOU was then approved on April 12, 2017 by the MPRB Board of Commissioners (attachment 1) and on April 14, 2017 by the Minneapolis City Council (attachment 2). This MOU recognizes that the natural resource goals of these entities would be best achieved through integrated land and water resource planning, and memorializes a commitment to working together to integrate goals, plans and investments. The MOU outlines the need for the parties to work together to develop a clear set of shared priorities and roadmap for implementation.

At the same time the MOU was authorized for execution, the MCWD Board of Managers authorized staff to develop and issue a request for qualifications (RFQ) in coordination with the City and the MPRB that would retain professional services to 1) advance the design and construction of FEMA funded repairs, and 2) begin implementing the goals and workflow of the MOU, by performing planning to integrate plans and investments for FEMA repairs, stormwater management, flood mitigation, road improvements, planned trail and recreation improvements and regional park master planning.

Request for Qualifications & Consultant Team Selection

Following Board authorization on February 23, 2017, the District, MPRB and City cooperatively drafted an RFQ and issued the RFQ on June 5, 2017. Qualifications were submitted on June 16, 2017. Qualification submissions were received from the following consultant teams:

- Barr Engineering & Berger Partnership
- Confluence, HR Green, RESPEC, Community Design Group, & Della Young Environmental Consulting Group
- Hoisington Koegler Group Inc.(HKGi), Wenck Associates,& Inter-Fluve Inc.
- LHB & MIG
- Perkins + Will & EOR

A team of District, MPRB, and City staff reviewed the submissions and invited the Barr Engineering & Berger Partnership and HKGi, Wenck Associates & Inter-Fluve teams to participate in an interview. Both interviews were held on July 7, 2017. The interview panel consisted of District staff, MPRB staff and City staff. The interview panel unanimously selected the HKGi, Wenck Associates & Inter-Fluve team, with Wenck as lead consultant for the Stage 1 work, as it was the strongest qualified team and demonstrated the best understanding of the project goals and needs. Through approval of resolution 17-059, the MCWD Board of

Managers selected the HKGi, Wenck Associates and Inter-Fluve Inc. as the consultant team to provide planning and engineering assistance in the development of FEMA flood repairs and Minnehaha Creek corridor planning.

Phasing the Scope of Services

The RFQ proposed that the work be broken into two stages. Stage 1 would be led by the District and would focus on implementation of the FEMA streambank repairs, carrying out a stormwater management study, and developing an integrated creek corridor concept plan which would serve as a foundation for the Stage 2 work. Stage 2 would be led by MPRB and include developing a shared capital improvement plan for short and long-term investment in the Minnehaha Creek corridor and developing a master plan for the Minnehaha Parkway Regional Trail park.

When the initial scope for Stage 1 was drafted the full scope of work for Stage 1 was unknown therefore the scope of work for Stage 1 was proposed to be broken into two phases (see attachment 3 - phasing diagram). Phasing the Stage 1 work would allow more certainty to be developed around future work and allow for more accurate budget estimations while also allowing staff and the consultant team to make necessary adjustments throughout the project. The phasing was structured as follows:

The Stage 1- Phase 1 contract was approved by the MCWD Board under Resolution 17-059 and involved a preliminary engineering screening and cultural resource screening of the FEMA repairs, development of a corridor map depicting potential capital investments, and development a community engagement implementation plan. Additionally, the Stage 1-Phase 1 contract included a study to identify opportunities for stormwater management on MPRB land along Minnehaha Creek. This study was partially funded by a $35,952 Clean Water Fund grant. At the conclusion of Stage 1 – Phase 1 the FEMA repairs reached a decision point where projects were selected either to move into final design or to move into longer-range planning within the creek corridor.

Stage 1 - Phase 2 will involve two tracks. Track one will include finalizing design and overseeing construction of the FEMA repairs. The second track will develop a shared capital improvement plan to deliver on the inter-agency priorities identified in the MOU. In order to carry out the second track of the Stage 1 – Phase 2 work the District and MPRB will be negotiating a cooperative agreement which will identify responsibilities and funding obligations.

Stage 2 will be led by the MPRB and focus on creating a master plan for the Minnehaha Creek corridor in Minneapolis.

Minnehaha Creek Flood Damage Assessment

In 2014, the Twin Cities saw the wettest first half of the year on record, and the month of June was the wettest month ever on record. Coupled with a long winter and late snowmelt, this extreme precipitation led to a record flow on Minnehaha Creek and prolonged flooding throughout most of the spring and summer. This record precipitation across the Twin Cities resulted in a Federal Disaster Declaration for Hennepin County. In the fall of 2014, MCWD completed a flood damage assessment of Minnehaha Creek and identified 47 damaged sites. MCWD coordinated the damage assessment with the Federal Emergency Management Agency (FEMA) and was awarded over $500,000 from FEMA to address flood damage at 35 of the 47 sites along Minnehaha Creek.

In September 2017, the Board approved Resolution 17-059 which authorized a contract with Wenck, on behalf of the selected consultant team (HKGi, Wenck, & Inter-Fluve), for Stage 1-Phase 1 work, which involved a

preliminary engineering screening and cultural resource screening of the original 47 damage sites. At the conclusion of the Stage 1-Phase 1 contract, the consultant team was to identify what should be done with each damage site:

1. Do nothing, as the site has "self-healed" over time
2. Move into final design and construct repair over the fall and winter of 2018-2019
3. Defer repair and include as part of the larger regional planning for the Minnehaha Creek corridor

In the fall of 2017, MCWD's consultant team performed the engineering screening for the 47 damage sites. During this screening each site was inspected to document current conditions and determine if further action is warranted. 28 of the 47 sites were removed from the project list because the consultant team determined that they either have naturally "healed" themselves or are better considered as part of future creek corridor planning initiatives. The remaining 19 sites were discussed and reviewed at a joint workshop in December 2017 with District, MPRB, and City staff to determine which sites should move into design and construction in 2018 and which sites should be deferred as they should be included as part of MPRB's master planning process. The result of that joint workshop identified 13 sites to move into final design and construction and 6 sites to be deferred and included in MPRB's master planning effort.

Minnehaha Creek FEMA Repair Project Ordering

The MCWD Water Management Plan identifies the Minnehaha Creek FEMA Repair Project as one that will repair streambank erosion and other damage resulting from the 2014 historic flooding on Minnehaha Creek. This project is identified as a capital improvement project for the purpose of stabilizing streambanks with bioengineering and hard armoring to reduce erosion and protect the stream channel and improve the ecological integrity of the stream corridor within the Minnehaha Creek subwatershed. The Minnehaha Creek FEMA Repair Project will include repairing flood damage at 13 sites along Minnehaha Creek within Minneapolis. An interactive map of the 13 sites can be viewed on the MCWD Project website: http://www.minnehahacreek.org/project/minnehaha-creek-fema-repairs

In conjunction with MPRB and the City, the District held two community open house meetings for the Minnehaha Creek FEMA Repair Project on April 12 and April 17, 2018. Additionally, the MPRB (attachment 4) and City (attachment 5) have each respectively provided letters of support for the project.

Working with the HKGi, Wenck Associates & Inter-Fluve team, District staff has evaluated and surveyed the FEMA damage sites, developed proposed repair recommendations, and estimated construction costs for the Minnehaha Creek FEMA Repair Project. The executive summary for the FEMA assessments and preliminary cost estimates is attached (attachment 6) for Board review. The District engineer finds Minnehaha Creek FEMA Repair work to be feasible. A brief summary of these materials will be provided at the April 26, 2018 Board Meeting.

Under the watershed law, before entering into a commitment to incur costs for capital project design or construction, the Board of Managers must hold a public hearing and order the project on the basis of a finding that the project will advance the District's water resource goals and should proceed. In accordance with Minnesota Statutes §103B.251, the public hearing has been duly noticed for April 26, 2018.

Design & Construction Oversight Services

As noted above, the Board approved a contract with Wenck in September 2017 for the Stage 1-Phase 1 work which involved an engineering and cultural resource screening of the flood damage sites. The conclusion of Stage 1-Phase 1 work has identified 13 flood damage sites to move into final design and construction. Stage 1-Phase 2 now includes preparing the final design for each of the 13 sites and overseeing construction of the FEMA flood repairs.

The action requested by this resolution (18-042) is for track one of the Stage 1-Phase 2 contract which will include finalizing the flood repair designs and overseeing construction of the FEMA flood repairs. The HKGi, Wenck Associates & Inter-Fluve consultant team has coordinated with District staff to develop the track one Stage 1 – Phase 2 scope of work (attachment 7) for Board consideration.

Overall Project Cost Estimates

The estimated construction cost for the 13 flood repair sites is $706,723. The FEMA grant received for those 13 sites totals approximately $336,459 and the District intends to use this grant money towards the cost of construction, however, a few of the sites are proposed to have a slightly different repair solution than FEMA originally approved in 2014. District staff is currently coordinating with FEMA and Minnesota Homeland Security and Emergency Management staff to discuss the revised repair solutions and any impacts to the FEMA monies received.

As noted is the "Phasing the Scope of Services" section above, the RFQ scope of work was broken into stages. The Stage 1 – Phase 1 contract amount was $107,630 and included a preliminary engineering screening and cultural resource screening of the FEMA repairs, development of a corridor map depicting potential capital investments, development a community engagement implementation plan, and a study to identify opportunities for stormwater management on MPRB land along Minnehaha Creek. This stormwater management study was partially funded by a $35,952 Clean Water Fund grant. The overall total cost to the District for the Stage 1 – Phase 1 contract is estimated to be approximately $71,678 ($107,630 - $35,952).

Track one for the Stage 1 – Phase 2 will include finalizing design and overseeing construction of the 13 FEMA repairs. This scope of work is estimated to cost $330,312. Due to the federal funding received from FEMA and the need for a U.S. Army Corps of Engineer (USACE) permit for the 13 flood repairs, this project must comply with Section 106 of the National Historic Preservation Act. Preliminary consultation with USACE has indicated that a Phase I archaeological survey would be required as part of the USACE permit approval. This historical permit requirement would be beyond the typical permit requirements for District projects and has resulted in additional tasks within the attached Wenck scope to assist District staff with those permitting procedures.

ATTACHMENTS:

1. MPRB Board of Commissioners MOU Approval
2. Minneapolis City Council MOU Approval
3. Scope Staging/Phasing Diagram
4. MPRB Letter of Support
5. City of Minneapolis Letter of Support
6. Executive Summary of Minnehaha Creek Flood Damage Assessment
7. Wenck Scope of Work – Stage 1-Phase 2 Work / Flood Repair Design & Construction Oversight

RESOLUTION

RESOLUTION NUMBER: 18-042

TITLE: Ordering of the Minnehaha Creek FEMA Repair Project and Authorization to execute a Design and Construction Oversight Contract for the Minnehaha Creek FEMA Repair Project

WHEREAS, the Minnehaha Creek Watershed District (MCWD) has adopted a watershed management plan (WMP) in accordance with Minnesota Statutes §103B.231; and

WHEREAS, the WMP identifies the Minnehaha Creek FEMA Repair Project ("Project") as a capital improvement project for the purpose of stabilizing streambanks with bioengineering and hard armoring to reduce erosion and protect the stream channel and improve the ecological integrity of the stream corridor within the Minnehaha Creek subwatershed; and

WHEREAS, the Minnehaha Creek corridor has sustained damage to its water quality, channel stability, habitat and public use opportunities as the result of decades of urban development, urban stormwater discharges and adjacent urban uses; and

WHEREAS, the Minnehaha Creek Watershed District has identified Minnehaha Creek and Lake Hiawatha as being a priority area for capital improvements focused on stormwater management and increased recreational access; and

WHEREAS, for several years the MCWD has been working with the City of Minneapolis ("City") and Minneapolis Park and Recreation Board ("MPRB") to enhance the social, economic and environmental vitality along the Minnehaha Creek corridor and further the goals and purposes of the parties; and

WHEREAS, the MCWD Board of Managers adopted the policy "A Balanced Urban Ecology", memorializing a desire to bridge the historic governance gap between land use and water planning and capital investment; recognizing the long term community value created by strategic investment in infrastructure, public works, parks and the natural environment; and

WHEREAS, pursuant to *Balanced Urban Ecology* the District's overarching organizational strategy to accomplishing its mission is to:

- Develop high impact capital projects integrated with non-water initiatives through multi-jurisdictional partnerships
- Pursue early value added partnership with private development, public infrastructure, and public policy/planning; and

WHEREAS, based on a history of partnership, the District, City and MPRB wish to reaffirm mutual recognition of the potential value added through formalizing agency coordination; and

WHEREAS, the MCWD Board of Managers, MPRB Board of Commissioners and Minneapolis City Council have approved a memorandum of understanding that outlines opportunities to collaborate and integrate mutual efforts in realms of land-use planning, stormwater management, flood mitigation, park and public land management, greenway development, and water resources improvements; and

WHEREAS, on February 23, 2017 the Board authorized staff to issue a request for qualifications for the integrated planning of the Minnehaha Creek subwatershed within the City of Minneapolis and authorized staff to work with the selected consultant team to develop a proposal to be brought back before the Board for final selection and authorization;

WHEREAS, on June 5, 2017 staff issued a request for qualifications (RFQ) to a pool of consultants for planning and engineering services to design Minnehaha Creek FEMA flood repairs and engage in long-term planning for the Minnehaha Creek corridor;

WHEREAS, an evaluation panel composed of MCWD, MPRB, and City staff evaluated RFQ submittals and participated in an interview process, and recommended the consultant team of Wenck Associates, Hoisington Koegler Group Inc. (HKGi) and Inter-Fluve Inc.; and

WHEREAS, the MCWD Board of Managers selected the Wenck Associates, HKGi and Inter-Fluve consultant team, with Wenck as lead consultant, to provide planning and engineering assistance in the development of FEMA flood repairs and Minnehaha Creek corridor planning;

WHEREAS, the Board, on staff recommendation, decided that the work of the consultant team would be authorized by the Board, and executed, in phases for accurate budgeting and to allow staff and the consultant team to make necessary adjustments as the work proceeds; and

WHEREAS, on September 14, 2017, the MCWD Board authorized the District Administrator to execute a contract with Wenck, for an amount not to exceed $107,630, for the Stage 1-Phase 1 work consisting of preliminary design and evaluation of the Minnehaha Creek FEMA repairs and corridor planning; and

WHEREAS, the consultant team has prepared and submitted a feasibility analysis of the Project, including its technical elements and its cost-effectiveness, and estimates the cost (including design, construction and construction oversight) at $1,200,000; and

WHEREAS, the Federal Emergency Management Agency (FEMA) has granted MCWD approximately $336,459 to repair flood damage at the 13 sites identified as part of the Minnehaha Creek FEMA Repair Project; and

WHEREAS, MCWD has coordinated the Project with MPRB and the City of Minneapolis, and the MPRB and the City are supportive of the project and have individually submitted letters of support to the District for the Project; and

WHEREAS, in accordance with Minnesota Statutes § 103B.251, subdivision 3, the MCWD held a duly noticed public hearing on ordering of the Project on April 26, 2018, at which time [no members of the public offered comments on the Project]; and

WHEREAS, the Board of Managers has considered the feasibility analysis and the recommendations of the consultant team and staff, and finds that the Project will be conducive to public health and promote the general welfare, and is in compliance with Minnesota Statutes §§103B.205 to 103B.255 and the MCWD's WMP adopted pursuant to §103B.231; and

NOW, THEREFORE, BE IT RESOLVED, that pursuant to Minnesota Statutes § 103B.251 and the WMP, the MCWD Board of Managers orders the Project.

BE IT FURTHER RESOLVED that the Minnehaha Creek Watershed District Board of Managers authorizes the District Administrator, on advice of counsel, to execute a contract with Wenck, with HKGi and Inter-Fluve as subconsultants, for design and construction oversight services for an amount not to exceed $330,112, and further authorizes the District Administrator, in execution of the work, to increase the contract price by 10 percent of the not-to-exceed, in aggregate, as in his judgment circumstances require.

Resolution Number 18-042 was moved by Manager _____, seconded by Manager _____. Motion to adopt the resolution ___ ayes, ___ nays, ___abstentions. Date: _____.

_____ Date:_____

Secretary

MINNEAPOLIS PARK AND RECREATION BOARD

AN ACTION, RESOLUTION OR ORDINANCE

In accordance with Article VI, Section 6.2(j), of the City Charter, there is herewith submitted to you, the Mayor of the City of Minneapolis, an action, resolution or ordinance adopted by the Minneapolis Park and Recreation Board which you may approve by affixing your signature herein below or if you disapprove of same to return to the Board, with your objection thereto, by depositing the same with the Secretary of the Board to be presented to the Board at their next meeting where the question of its passage will be put again before the Board.

8.A.2 That the Board adopt Resolution 2017-166 captioned as follows:

Resolution 2017-166

Resolution Approving the Memorandum of Understanding Between the Minnehaha Creek Watershed District, City of Minneapolis, and Minneapolis Park and Recreation Board Regarding Integrated Planning of the Minnehaha Creek Subwatershed Within the City of Minneapolis

PASSED April 12, 2017

Secretary of the Board

APPROVED

Mayor

Offered by: Meg Forney

Seconded by: John Erwin

Resolution 2017-166

Resolution Approving the Memorandum of Understanding Between the Minnehaha Creek Watershed District, City of Minneapolis, and Minneapolis Park and Recreation Board Regarding Integrated Planning of the Minnehaha Creek Subwatershed Within the City of Minneapolis

Whereas, The Minneapolis Park and Recreation Board (MPRB) was created by the Minnesota Legislature in April 1883 and has the authority to manage and operate park facilities;

Whereas, The MPRB owns and manages parkland along and contiguous to Minnehaha Creek within Minneapolis and other cities;

Whereas, The City of Minneapolis (City) owns and manages stormwater infrastructure within Minneapolis, including infrastructure that conveys stormwater to Minnehaha Creek;

Whereas, The Minnehaha Creek Watershed District (MCWD) is a local unit of government responsible for managing and protecting water resources of the Minnehaha Creek Watershed in parts of Minneapolis and it western suburbs;

Whereas, The MPRB, the City, and the MCWD have identified projects within the subwatershed of Minnehaha Creek within Minneapolis, including:

- The MPRB's work related to the pumping of groundwater and stormwater from Hiawatha Golf Course into Lake Hiawatha and future work identified in its capital improvement program for parkland areas along Minnehaha Creek;
- The City's work in addressing outfalls from urban stormwater infrastructure into Minnehaha Creek at various locations and other upstream stormwater infrastructure management projects with the potential for impacting the quality of Minnehaha Creek; and
- The MCWD's work focused on repair and remediation of damage sustained to Minnehaha Creek during 2014 flooding that impacted the creek's water quality, channel stability, and habitat, and has identified Minnehaha Creek and Lake Hiawatha as priority areas for capital improvements focused on stormwater management and increased recreational access;

Whereas, The MPRB, City, and MCWD have collaborated on projects that enhance the social, economic, and environmental vitality of the Minnehaha Creek corridor in Minneapolis and further the goals and purposes of each agency;

Whereas, Through intentional collaboration the MPRB, City, and MCWD aim to bridge governance gaps between land use, water resource planning, and capital investment to bring long-term value by strategic investment in public infrastructure, parks, and the natural environment;

Whereas, Based on a history of partnership, the MPRB, City, and MCWD desire to affirm a mutual recognition of the value added by formalizing coordination between the agencies through opportunities to collaborate and integrate efforts in the realms of land use and park planning, stormwater management, flood mitigation, parks and public land management, greenway development, and water resources improvements; and

Whereas, This resolution is supported by the MPRB 2007-2020 Comprehensive Plan, which envisions "Urban forests, natural areas, and waters that endure and captivate," and "Recreation that inspires personal growth, healthy lifestyles, and a sense of community;"

RESOLVED, That the Board of Commissioners approve the Memorandum of Understanding between the Minnehaha Creek Watershed District, the City of Minneapolis, and the Minneapolis Park and Recreation Board regarding integrated planning of the Minnehaha Creek Subwatershed within the City of Minneapolis; and

RESOLVED, That the President of the Board and Secretary to the Board are authorized to take all necessary administrative actions to implement this resolution.

Commissioner	Aye	Nay	Abstain	Absent
Bourn				X
Erwin	X			
Forney	X			
Musich	Y			
Olson	Y			
Tabb	Y			
Vreeland	Y			
Wielinski	Y			
Young	X			

Adopted by the Minneapolis Park and Recreation Board
In formal meeting assembled on April 12, 2017

Anita Tabb, President

Jennifer B. Ringold, Secretary

Approved:

Betsy Hodges, Mayor

5

Council Action No. 2017A-0286 **City of Minneapolis** **File No.** 17-00430

Committee: TPW Public Hearing: N/A Passage: 4/14/2017 Publication: 4/22/2017

RECORD OF COUNCIL VOTE				
COUNCIL MEMBER	AYE	NAY	ABSENT	ABSTAIN
REICH	✓			
GORDON	✓			
FREY	✓			
B JOHNSON	✓			
YANG	✓			
WARSAME	✓			
GOODMAN	✓			
GLIDDEN	✓			
CANO	✓			
BENDER	✓			
QUINCY	✓			
A JOHNSON			✓	
PALMISANO	✓			

Presented to Mayor Date: APR 14 2017

Received from Mayor Date: APR 20 2017

MAYOR ACTION

☒ APPROVED ☐ VETOED

MAYOR HODGES

APR 20 2017

DATE

Certified an official action of the City Council

ATTEST:

CITY CLERK

The Minneapolis City Council hereby authorizes a Memorandum of Understanding with the Minneapolis Park and Recreation Board and the Minnehaha Creek Watershed Management District that will guide an integrated planning process to actively coordinate and align respective work within the Minnehaha Creek Watershed in the City of Minneapolis, as further set forth in File No. 17-00430 on file in the Office of the City Clerk.

STAGE ONE

Phase 1

Technical Scope of Design – Layering of Filters

1. Engineering Filter: Preliminary engineering screening of damage sites to repair back to pre-flood conditions

2. Preliminary Planning Filter: Layer in other known initiatives that intersect with the results coming out of the engineering filter.
    a. Cultural Resources Filter: Screening of projects to identify level of required effort

***Decision Points:**

1. Confirm # of damage sites to move forward into design
2. Identify what goes into future planning

Final Filter
Community Engagement

CONTRACT 1

CONTRACT 2

Phase 2

Final Design & Construction

- Final design of "X" stream repairs
- Construction of "X" stream repairs
- Cultural resources scoping/ Section 106 process
- Need to define the level of community engagement

***Deliverable**: Final plan set & specifications, construction oversight

Planning (MOU)

- Development of a shared capital improvement plan (e.g. trail improvements, Flood area 29/30, stormwater projects, etc.)
- Identify which projects will move into the future planning – prime the pump for master planning effort

***Deliverable:** Map, timeline, CIP

CONTRACT 3

Stage Two – Master Planning

Minneapolis
Park & Recreation Board

Administrative Offices
2117 West River Road North
Minneapolis, MN 55411-2227

Operations Center
3800 Bryant Avenue South
Minneapolis, MN 55409-1000

Phone
612-230-6400

Fax
612-230-6500

www.minneapolisparks.org

April 18, 2018

Tiffany Schaufler
Minnehaha Creek Watershed District
15320 Minnetonka Blvd
Minnetonka, MN 55345

Dear Ms. Schaufler,

The Minneapolis Park and Recreation Board (MPRB) and MCWD have a strong history of partnership and the work accomplished together by our agencies is noteworthy. Based on this history of partnership, the MPRB, MCWD, and City of Minneapolis (City) recently affirmed our mutual recognition of the value added by working together and formalized coordination between our agencies through approval of the "Memorandum of Understanding to Support the Integrated Planning of the Minnehaha Creek Subwatershed within Minneapolis." Through this Memorandum of Understanding (MOU) the MPRB, MCWD, and City recognize that the mutual goals of our agencies are best achieved through integrated land and water resource planning.

The MPRB appreciates the ongoing coordination between our agencies on the proposed Minnehaha Creek FEMA Repair Project (Project). This Project intersects with the clean water and recreation goals that MPRB has planned for the upcoming master planning of the Minnehaha Parkway Regional Trail. As part of this master plan process the MPRB is excited to collaborate with MCWD and the City to identify opportunities for streambank improvements, stormwater management, infrastructure improvements, recreation investments, ecosystem plans, and corridor plans.

MPRB understands and supports the District's ongoing efforts to improve the ecological integrity of Minnehaha Creek and is pleased to offer this letter of support for the District's Minnehaha Creek FEMA Flood Repair Project. MPRB looks forward to continued collaboration with MCWD to develop a shared vision for the Minnehaha Creek corridor within Minneapolis, as we work towards improving the natural and built environments along Minnehaha Creek.

Sincerely,

Adam Arvidson
Director of Strategic Planning
Minneapolis Park and Recreation Board

Minneapolis
City of Lakes

Public Works
350 S. Fifth St. - Room 203
Minneapolis, MN 55415
TEL 612.673.2352
www.minneapolismn.gov

April 18, 2018

Tiffany Schaufler
Minnehaha Creek Watershed District
15320 Minnetonka Blvd
Minnetonka, MN 55345

Dear Ms. Schaufler,

The City of Minneapolis (City) is pleased to offer this letter of support for the Minnehaha Creek Watershed District's (MCWD) Minnehaha Creek FEMA Repair Project. The City and MCWD have a history of successful collaboration on projects such as the Minneapolis Chain of Lakes Project. Recently the City, MCWD and Minneapolis Park and Recreation Board (MPRB) reaffirmed their shared responsibility for improving water quality within the Minnehaha Creek subwatershed and memorialized a commitment of working together through joint approval of a "Memorandum of Understanding to Support the Integrated Planning of the Minnehaha Creek Subwatershed within Minneapolis".

Through this Memorandum of Understanding (MOU) the City, MCWD, and MPRB recognize that the mutual goals of our agencies are best achieved through integrated land and water resource planning. The Minnehaha Creek FEMA Repair Project is the first initiative the agencies have jointly worked together on under the MOU framework. The District has done a nice job of successfully engaging and actively coordinating with the City on the proposed Minnehaha Creek FEMA Repair Project, as such, the City is supportive of this project as the flood repairs would improve the ecological integrity and reduce erosion along Minnehaha Creek.

The City looks forward to future coordination between the District and MPRB, as all three agencies work together to develop a shared vision and corridor plan for Minnehaha Creek.

Sincerely,

Katrina Kessler

Katrina Kessler
Director, Surface Water & Sewers
City of Minneapolis – Public Works

Technical Memo

Responsive partner.
Exceptional outcomes.

To: Tiffany Schaufler, Minnehaha Creek Watershed District

From: Chris Meehan, PE (MN), Wenck
Dan Elemes, PE (MN), Wenck

Date: April 23, 2018

Subject: FEMA Project Summary for Minnehaha Creek Corridor

Background

In 2012, MCWD contracted with Inter-Fluve to complete a series of geomorphic and biological assessments along Minnehaha Creek (2013 1st Order Drainage Assessment Fluvial & Geomorphic Assessment Update) to evaluate existing stream networks, channel stability, and water quality. A similar study was performed by Wenck in 2003-2004, and therefore the 2012 study involved performing ground reconnaissance to evaluate changes and provide recommendations for potential improvement areas. Both of these studies provide a good set of baseline information to compare future Minnehaha Creek conditions to.

In 2014, the Twin Cities saw the wettest first half of the year on record, and the month of June was the wettest month ever on record. Coupled with a long winter and late snowmelt, this extreme precipitation led to flooding throughout the District resulting in road closures, sustained standing water, bank failures, and in-stream erosion issues. This record precipitation across the Twin Cities resulted in a Federal Disaster Declaration for Hennepin County. To understand the impact of the damage MCWD contracted with Wenck in October 2014 to complete a field assessment along Minnehaha Creek to identify flood damage. This field assessment identified 47 sites along Minnehaha Creek with flood damage. MCWD coordinated the damage assessment with the Federal Emergency Management Agency (FEMA) and was awarded over $500,000 from FEMA to address flood damage at 35 of the 47 sites along Minnehaha Creek.

Minnehaha Creek Corridor Planning

Most of the flood damage that occurred along Minnehaha Creek in 2014 occurred within the City of Minneapolis. As the District worked to secure FEMA funding to repair the damage sites along the Minneapolis section of the creek, discussions began between MCWD, the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB), on how the three agencies might partner to develop a shared vision of the future, and set of natural resource implementation priorities, within Minneapolis. Subsequently in early 2017 the MCWD Board of Managers, MPRB Board of Commissioners and Minneapolis City Council approved a memorandum of understanding (MOU) that outlines opportunities to collaborate and integrate mutual efforts in realms of land-use planning, stormwater management, flood mitigation, park and public land management, greenway development, and water resources improvements.

In June 2017, MCWD, MPRB, and the City carried out a request for qualification process to retain professional services to advance the design and construction of the FEMA funded repairs along Minnehaha Creek and begin to implement the goals and workflow of the MOU, by performing planning to integrate plans and investments for FEMA repairs, stormwater

management, flood mitigation, and regional trail master planning. The Wenck, Hoisington Koegler Group Inc (HKGi), and Inter-Fluve team was selected by MCWD, MPRB, and the City as the consultant team to provide planning and engineering services to assist in the development of the Minnehaha Creek FEMA repairs and corridor planning.

2017 Inspection, Screening and Survey

Since several years had passed since the 2014 damage assessment, Wenck and Inter-Fluve conducted a visual assessment of the original 47 damage sites in the fall of 2017. The goal of this 2017 assessment was to document site conditions and identify whether further action was warranted. This assessment identified that 28 of the 47 sites could be removed from the project list because Wenck and Inter-Fluve staff determined that they either have naturally "healed" or their repair would be better suited as part of upcoming creek corridor planning. The remaining 19 (see attached map) sites were surveyed to identify stream cross-sections, floodplain and adjacent land topography, identify eroded areas, identify infrastructure and utilities within the project area, and identify trees within potential project areas.

A workshop was held in December 2017, and included staff from the MCWD, City, and MPRB, and members of the Wenck, HGKi, and Inter-Fluve consultant team. Agency and consultant team members discussed high-level planning topics, including ongoing studies within the project area, improving collaboration between the various stakeholders throughout the Minnehaha Creek corridor, overlapping project areas, various master plans, current and future land use, and community engagement topics. The team collaboratively reviewed all 19 flood-damaged sites for potential design issues or fatal flaws. Input from the invited stakeholders was recorded and documented, along with the group recommendation whether to proceed with design and construction in 2018, or whether to defer the project until a later date such that planning and funding concerns may be addressed more thoroughly.

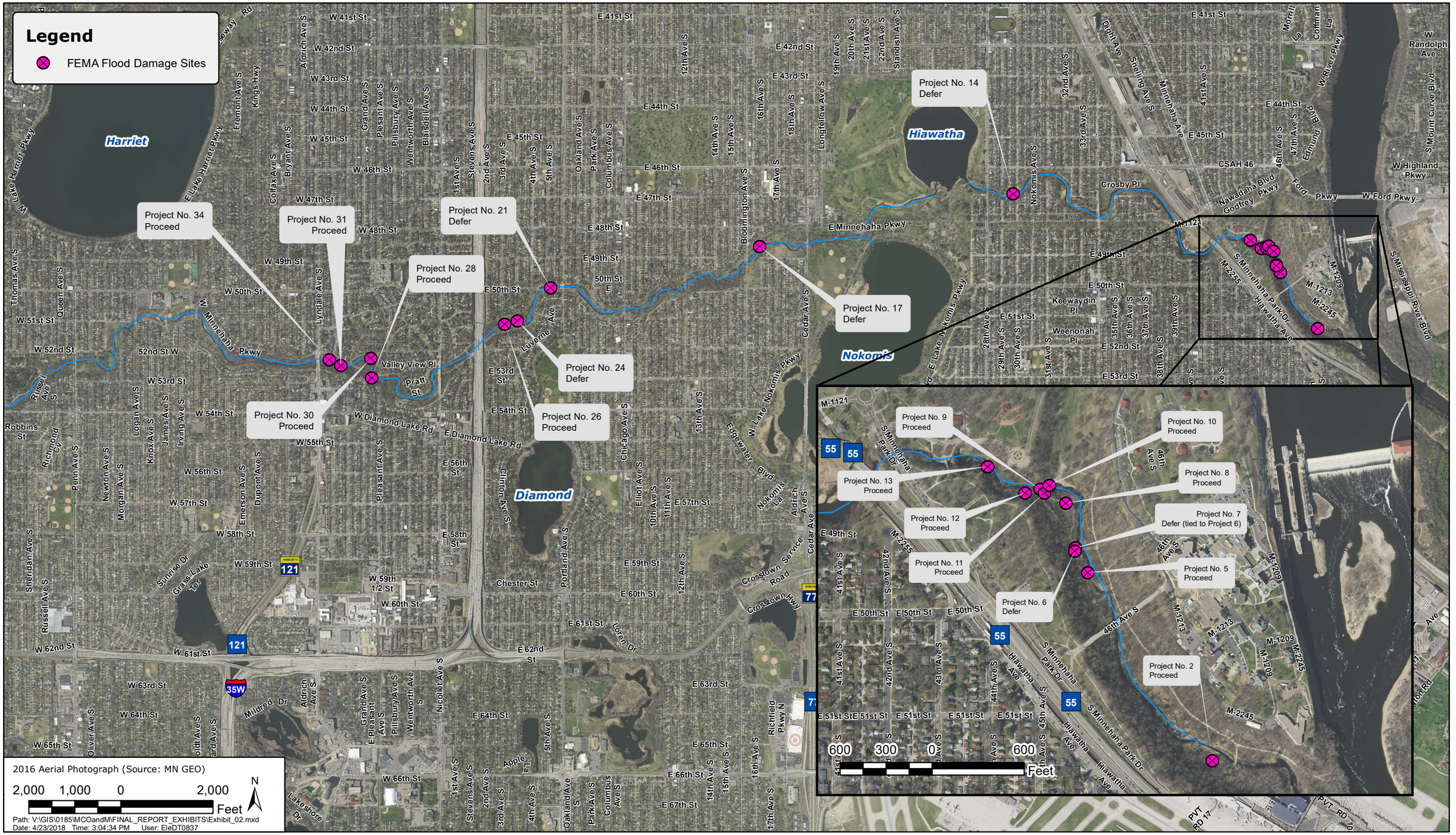
At the conclusion of the December 2017 workshop 13 sites were identified to move into final design and construction and six sites were noted to be deferred and included as part of MPRB's master plan work. The table below summarizes the decision made (proceed or defer) for each of the 19 sites discussed at the December 2017 workshop, along with their damage description, proposed repair, estimated construction cost, and estimated FEMA grant received.

Project No.	FEMA Project No.	Damage Description	Proposed Repair	2018 Decision	Estimated Project Cost	Estimated FEMA Funds
2	755 Site 4	Trail repair	Reconstruct trail	Proceed	$1,550	$808
5	755 Site 1	Boardwalk undermining	Realign boardwalk away from creek to allow for natural channel movement. Meander migration rate appears to be very slow. No channel work required.	Proceed	$100,477	$77,290
6	806 Site 8	Undersized historic walking bridge	Increase hydraulic capacity by rebuilding bridge or constructing additional floodplain capacity. Would require significant engineering and construction costs depending on salvage of the existing bridge or construction of a new bridge.	Defer	$200,000	$11,195
7	806 Site 7	Erosion at right and left bridge abutments	This solution is dependent upon the bridge solution noted above (Site 8). Once a bridge solution design is in place, the trail can be realigned away from creek or reconstructed in place, including stabilization of banks with an immobile rock toe and design of protected overtopping of trail during flooding.	Defer	$100,000	$7,300
8	806 Site 6	Bank erosion along trail	Stabilize bank with rock toe and possibly realign trail away from creekbank.	Proceed	$75,235	$57,873
9	806 Site 3	Erosion along left downstream bridge abutment	Evaluate bridge hydraulics and develop improved stormwater drainage. Realign left downstream bridge abutment and repair and	Proceed	$101,400	$78,000

Project No.	FEMA Project No.	Damage Description	Proposed Repair	2018 Decision	Estimated Project Cost	Estimated FEMA Funds
			extend decorative concrete/rock terrace to bridge.			
10	806 Site 5	Exposed storm sewer outlet along left downstream bridge abutment	Install riprap at end of storm sewer outlet.	Proceed	$5,156	$735
11	806 Site 4	Collapsing rock slab at right downstream abutment	Need to excavate, install blocks to depth of scour and then rebuild the slabs above.	Proceed	$15,061	$11,585
12	806 Site 1	Storm water and hillside runoff damaging trail	Address upstream drainage path and repair trail to match existing material.	Proceed	$3,380	$2,600
13	806 Site 2	Erosion on walking bridge surface and right downstream abutment	Repair overland flow with rock armoring.	Proceed	$1,658	$1,275
14	934 Site 10	Bank erosion along trail caused by surface runoff. Possible exposed storm sewer pipes	Not a fluvial problem. Caused by gullying from overland flow into the stream. Gravel washed rock armoring and reconstruct bank with FES.	Defer	$47,000	$0

Project No.	FEMA Project No.	Damage Description	Proposed Repair	2018 Decision	Estimated Project Cost	Estimated FEMA Funds
17	934 Site 7	Bank erosion along trail with exposed storm sewer outfall on opposite bank	Stream is attempting to add sinuosity naturally, but in a confined park area. Bank erosion rate and shear stresses are low, but erosion is occurring during episodes. Alternative is to add sinuosity to this reach. Recommend realign trail away from creek or reconstruct, stabilize bank with rock toe.	Defer	$117,000	$0
21	934 Site 3	High eroded and scalloped banks	Stormwater input is compounding natural tendency toward sinuosity. Need to accommodate stormwater flow path and allow for a slightly larger channel width here. Use on-site analogs for point bar design. Redesign channel with bench located at previous edge of water, stabilize bank with toe.	Defer	$160,000	$0
24	764 Site 11	High eroded bank upstream of footbridge	Bluff edge is eroding very slowly, eddying may be compounding the problem. Not an immediate problem. Stabilize bank with rock toe and reconstruct bank with FES and lay-back to 4:1 slope.	Defer	$124,000	$5,370
26	764 Site 9	Eroded bank downstream of footbridge	Stabilize bank with bioengineering.	Proceed	$22,898	$1,180
28	934 Site 12	Collapsing WPA wall	Remove collapsing WPA wall and stabilize creek bank with bioengineering.	Proceed	$192,448	$73,923

Project No.	FEMA Project No.	Damage Description	Proposed Repair	2018 Decision	Estimated Project Cost	Estimated FEMA Funds
30	764 Site 7	Hillside gully erosion	Stabilize slope with bioengineering.	Proceed	$15,700	$7,850
31	764 Site 6	Constricted channel and compromised WPA wall	Repair or remove wall. Reconstruct channel to accommodate higher flows.	Proceed	$144,236	$13,960
34	764 Site 3	Eroded bank along wooden walkway	Slow rate of bank erosion requiring minor toe stabilization. Stabilize bank with rock toe. Potential to extend downstream and construct large wood crib.	Proceed	$27,524	$9,380
			Total Estimated Costs for "Proceed" Projects:		**$706,723**	**$336,459**



MINNEHAHA CREEK WATERSHED DISTRICT

FEMA Flood Damage Sites

WENCK

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APRIL 2018

Figure 1

Proposal

WENCK ASSOCIATES

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To: Tiffany Schaufler, *Project & Land Manager*
Minnehaha Creek Watershed District

From: Chris Meehan and Mark Schroeher, Wenck Associates, Inc.

Date: April 20, 2018

Subject: 2018 FEMA Floodway Repairs

Background

In 2014 Minnehaha Creek experienced record flooding throughout the District resulting in road closures, sustained standing water, bank failures, and in-stream erosion issues. As a result, MCWD in consultation with Wenck, completed a field assessment where 47 sites along Minnehaha Creek were identified as flood damage locations. Of the 47 sites, 35 were submitted and approved for FEMA federal funding assistance for stream bank stabilization. Approved FEMA funding for the 35 sites targets stream bank stabilization that generally focuses on standardized riprap material, channel bank re-sloping, erosion control practices, and, to a lesser extent, integrated design to improve the in-stream condition using bioengineered practices.

In early August 2017 Inter-Fluve and Wenck staff completed a visual assessment of the 47 sites identified in 2014. This confirmed project site elements still required action and identified other project constraints (e.g. infrastructure, cultural resource issues). Based on this high-level screening and dialogue with MCWD, 19 of the 47sites were recommended for preliminary design in Stage 1.

In November 2017 Inter-Fluve staff conducted a field inventory to assess project sites identified in preliminary screening conducted by Inter-Fluve and Wenck in August 2017. The goal was to identify sites that may be constructed in 2018 without additional planning considerations and to identify sites that require additional consideration in terms of a regional approach to stormwater management. Thirteen (13) of those sites were recommended project sites in the StaGe One – Phase One Minnehaha Creek Corridor Planning assessment.

Scope of Work

Wenck Associates, Inc. (WAI) and Inter-Fluve (IFI) are pleased to submit a scope of work and schedule to create construction documents and cost estimates, and aid in construction administration for the 13 recommended projects sites identified in the Stage One – Phase One Minnehaha Creek Corridor Planning assessment in Minneapolis. The sites included in this scope of work include project sites 2, 5, 8, 9, 10, 11, 12, 13, 26, 28, 30, 31, and 34 (numbering is based on Inter-Fluve's technical memorandum dated January 23, 2018 – updated March 6, 2018).

We propose the following tasks to complete the project.

- Task 1: Project Management
- Task 2: Site Assessment
- Task 3: Preliminary Design (60%)
- Task 4: Final Design (90%)
- Task 5: Construction Documents (100%)
- Task 6: Bid Period Support
- Task 7: Construction Engineering
- Task 8: Construction Quality Control
- Task 9: Construction Contract Administration
- Task 10: Final Construction Documentation

A detailed description for each of the above tasks is provided below.

Task 1 Project Management

Project management and meetings are critical to the success of this project as there are several smaller projects within the overall project scope. It is essential that all projects and agencies/entities are integrated into the process.

Meetings

Wenck and Inter-Fluve assume the following meeting schedule:

- Project kick-off meeting (MCWD, WAI, IFI)
- Progress meetings (2 meetings, 1- hour each) (MCWD, WAI, IFI via conference call)
    - One meeting at completion of Preliminary Design (60%)
    - One meeting at completion of Final Design (90%)
- Permitting meetings (4 meetings) (MCWD, WAI)
    - One meeting with MCWD
    - One with all external agencies
    - Two assumed follow up with specific external agencies (USACOE, SHPO)

Task deliverables and meetings:

- Project kick-off meeting (M) (WAI and IFI)
- Progress Meetings (M) (WAI and IFI)
- Permitting Meetings (M) (WAI)

Task assumptions:

- Meeting agenda and minutes are to be provided by MCWD

Task 2 Site Assessment

Geomorphic Analysis

Inter-Fluve staff will review previously collected field reconnaissance data, including geologic controls, post flood signatures, sediment movement and channel stability. The information informs the overall design for each project site.

Hydrology Analysis

Flood flow estimates will be generated by Wenck for baseflow conditions as well as the 2, 10, 25, 50 and 100-year recurrence interval events. Design flows will be determined by Inter-Fluve through consensus by comparing the results with multiple methodologies such as regional regression equations, gage transfer, watershed runoff calculations, and comparison to other studies.

Hydraulics Analysis

Inter-Fluve will create a hydraulic model of the existing and proposed conditions using HEC-RAS, surveyed topography, field notes from the reconnaissance and geomorphic assessment, and the results from the hydrologic analysis. Based on the conditions observed during the site visit, Inter-Fluve anticipates developing a HEC-RAS 1D model to assess hydraulic conditions. The existing conditions model will be correlated with geomorphic field data to complete the understanding of sediment transport and shear stresses. Iterations of the proposed channel dimensions will be examined for shear stress and capacity to transport sediment. Model results will be used to design the channel cross section, planform, and bed and bank materials and details. Modeling will include the effect of the projects on local flood elevations.

Additional Data Collection

Survey data was collected as part of the Stage One – Phase One effort. Wenck and Inter-Fluve will review all existing data and make recommendations for additional data needs.

Wenck has included up to a total of 24 hours of additional survey related effort, which may include additional site survey.

Inter-Fluve has included up to a total of 28 hours of additional survey related effort, which may include additional site survey.

Draft Technical Design Memo

Based on the findings of the previous site visit and the geomorphic, hydrologic and hydraulic analysis, a draft technical design memo (DTDM) will be initiated at this phase for project sites 8, 26, 28, 31, and 34. The DTDM shall include:

- Restoration Objectives
- Geomorphic Analysis Results
- Hydrologic Analysis Results

- Hydraulic Analysis Results
- Analysis of any proposed preliminary restoration treatment design changes

Historical Data Review

Components of this project are receiving federal funding from the Federal Emergency Management Agency (FEMA) and/or are subject to permitting by the U.S. Army Corps of Engineers (USACE) and, therefore, must comply with Section 106 of the National Historic Preservation Act of 1966, as amended, as well as applicable state mandates governing cultural resources, including the Minnesota Historic Sites Act, Minnesota Field Archaeology Act, and Minnesota Private Cemeteries Act.

An archaeological and architectural history literature review recommended that additional archaeological study, including Phase I archaeological survey, should be undertaken to determine whether there are any unknown archaeological sites within the project area. In addition, the literature review found that one National Register of Historic Places (NRHP)-listed historic district, three NRHP-eligible historic districts, and two NRHP-eligible structures are located within the architectural history study area. The literature review recommended further study to be developed in consultation with the lead federal agency, likely including additional research to assess the effects of the project to NRHP-listed and eligible historic properties.

Consultation with the USACE and FEMA is ongoing; however, this scope of work has been prepared for several tasks that are likely to be required as a result of consultation: (1) Determine the Area of Potential Effects (APE); (2) Analysis of Effects for architectural history properties; and (3) Phase I archaeological survey.

Determine the Area of Potential Effect

An APE has not yet been defined for the project. In order to facilitate compliance with both state and federal cultural resources regulations, and based on current project information, a brief memo will be prepared that provides justification and recommendation regarding the appropriate APE for both archaeology and architectural history resources. The draft APE memo will be prepared for client review in electronic format. One round of client comments will be addressed and a final memo submitted in electronic format for submittal to appropriate agencies and SHPO.

Analysis of Effects

The literature review indicated that one NRHP-listed historic district (the Minnehaha Historic District), three NRHP-eligible historic districts (the Grand Rounds Historic District, the Minnehaha Parkway Historic District, and the Washburn Park Historic District), and two NRHP-eligible bridges are located within the architectural history study area and could be affected by the proposed project. Additional analysis will be conducted to assess the effects of the project to these NRHP-listed and eligible properties.

In addition, a preliminary review of Google Earth aerial imagery from 2017 indicates that there are other potentially undocumented structures, including footbridges and trails, within the architectural history study area. A site visit will be conducted to confirm whether undocumented structures are located within the recommended architectural history APE. If so, preliminary research into their age and association will be conducted to assess whether they may be contributing properties to a known historic district or have the potential to be individually historically significant. If research at the Minneapolis Park and Recreation Board is required, we assume that MCWD would facilitate communications with the Park Board. This information will confirm if additional architectural history survey may be required to comply with Section 106.

The draft analysis of effects report will be prepared for client review in electronic format. One round of client comments will be addressed and a final report submitted in electronic format.

Phase 1 Archaeological Survey

The Phase I Archaeological Survey will consist of the following tasks:

- The literature review identified that all 12 project areas possessed an elevated potential to contain unknown archaeological resources due to their location along Minnehaha Creek and the presence of nearby archaeological sites. Research will be conducted to better characterize and refine the archaeological potential of the archaeology APE, and to identify areas that may have been subject to previous significant disturbance and therefore may not require Phase I survey. A variety of online resources will be referenced, including historical plat and topographic maps, aerial photographs, and data on soils.
- An appropriate survey area for archaeology is assumed to be the same as the archaeology APE, which includes all areas of project-related ground-disturbing activity. For purposes of this scope, the APE is assumed to correspond with the boundaries of each of the 12 project areas, totaling approximately 2.45 acres.
- The Phase I archaeological survey will include a visual reconnaissance of the survey area to identify and document any above-ground features, any areas characterized by greater than 25 percent ground surface visibility, and any indication of significant ground disturbance that were not identified during the literature review and historical research.
- Any portions of the archaeology survey area that are characterized by 25 percent or greater surface visibility will be subject to systematic pedestrian survey with transects spaced at 10-meter (m) intervals.
- Areas lacking any indication of significant ground disturbance and characterized by less than 25 percent ground surface visibility will be subjected to Phase I shovel testing. This will entail the distribution of small (approximately 14-16 inch [30-60 cm] diameter) excavations reaching depths of up to 3 ft (1 m) below the surface. Because the area is considered to have high archaeological potential, in keeping with SHPO guidelines, shovel test excavations will be spaced no more than 10 m (33 ft)

apart within the survey area. It is assumed that no more than 95 shovel tests will be required to complete the Phase I survey.

- It is assumed that the entire survey area (2.45 acres) will require shovel testing. If areas are identified that are characterized by previous disturbance, low archaeological potential, or greater than 25 percent ground surface visibility, then the level of effort and associated costs will be reduced accordingly.
- Any archaeological sites identified during the course of the archaeological survey will be further investigated with additional radial shovel tests distributed in cardinal directions from the original find spot. These shovel tests will aid in characterizing the site and delimiting its horizontal and vertical extents. It is assumed that no more than one site will be identified, and no more than 15 artifacts will be collected. If no sites are identified, costs will be reduced accordingly.
- A Minnesota Archaeological Site Form will be completed for each archaeology site. It is assumed that no more than one site form will need to be completed.
- Following the analysis of all data collected during fieldwork (including any artifacts collected) a report will be prepared describing project methodology, previous investigations, historical contexts, results, and recommendations. One copy of the draft report will be prepared for review in electronic format. Up to four hard copies of the final report will be prepared for distribution by MCWD.
- Any artifacts identified on publicly owned lands during the investigation will need to be curated at the Minnesota Historical Society. The labor and costs associated with this task will depend on the number and type of artifacts identified during the investigation and can be negotiated once the survey has been completed, if needed.
- The principal investigator for this project holds an annual archaeological license from the OSA; the OSA will be notified of this project for inclusion under this existing license, if needed. It is assumed that no other state or federal permits or licenses to complete the archaeological survey will be required. Before beginning survey work, we will also arrange for public utilities to be marked within the survey area.

We request that you provide the following:

- Any pertinent data in electronic format, such as historical information pertaining to the project area or information on previous development in the area; and
- Copies of previous communication with SHPO or other pertinent agencies.

Task deliverables and meetings:

- Draft Technical Design Memo (D)
  - Project sites: 8, 26, 28, 31, 34
- Draft and Final APE Memo (D)
- Draft and Final Analysis of Effects Report (D)
- Phase 1 Archaeological Survey (D)

Task assumptions:

- The survey data is generally assumed to be sufficient for final design and hydraulic modelling through each of the project sites. The additional 28 hours is anticipated to fill data gaps within projects 8 and 31.
- Additional data collection will require an addendum.
- Schedule for archaeological fieldwork is dependent on the weather/ground conditions to allow sufficient ground visibility and the excavation of shovel tests (snow melted and ground thawed).
- Based on preliminary conversations, no proposed ground disturbance will extend deeper than approximately 1 m (3 ft) from the existing surface. Accordingly, it is assumed that no deep testing methodology will be required by the USACE as a component of Phase I archaeological survey. If deep testing is required by the USACE, the additional time and budget can be negotiated.
- This scope of work does not include time and expenses for Phase I architectural history survey of any newly identified properties. If such survey becomes necessary, separate scopes of work will need to be developed.
- If consultation with the lead federal agency and SHPO determines that additional tasks beyond those identified in this scope of work are required to comply with Section 106, the additional scope and associated costs will need to be negotiated. Likewise, if the results of the archaeology Phase I survey indicate the potential for further investigation at the Phase II level, the additional tasks and budget can be re-negotiated and only one final report prepared that incorporates the results of the Phase I and II investigations, if you so wish.

Task 3 Preliminary Design (60%)

Wenck and Inter-Fluve will prepare preliminary design documents for each project site based on the previous field assessments and additional site assessment data gathered in task 2.

Preliminary Design (60%)

Plan sheet drawings will be developed to the 60% completion level and submitted electronically (PDF 11”x17”).

- Wenck estimates that the plan set for project sites 2, 5, 8, 9, 10, 11, 12, 13, 30 and overall project will contain the following sheets (20 sheets)
  - Title and index sheet (1 sheet)
  - Existing Conditions/Proposed Site Plan (14 sheets)
  - Proposed Grading Plan (5 sheets)
- Inter-Fluve estimate that the plan set for project sites 8, 26, 28, 31, and 34 will contain the following sheets (20 sheets):
  - Site Plan (5 sheet) – plan view including existing conditions, access, staging, quantities and construction notes
  - Proposed Grading Plan and Profile (5 sheet)

- Channel Cross Sections (5 sheet) – existing and proposed grades, typical cross-section and approximate proposed 100-year flood elevations for floodplain grading if needed
- Planting Plan (5 sheet)

Preliminary Design Meeting

Wenck and Inter-Fluve will participate in one preliminary design review meeting with the Project Team.

Permitting and Environmental Compliance Support

Wenck will provide up to 30 hours of permitting support of required permits.

Inter-Fluve will provide up to 40 hours of permitting support of required permits.

Draft Technical Design Memo

Based on the preliminary designs, the TDM for project sites 8, 26, 28, 31, and 34 will be updated and distributed for review and comment. The updated DTDM shall include analysis of the preliminary restoration treatment designs.

Opinion of Probable Construction Cost

An Opinion of Probable Construction Cost (OPC) based on Preliminary Design will be generated for each site.

Task deliverables and meetings:

- Preliminary design plans (60%) (D)
- Preliminary design opinion of probable construction cost (D)
- Draft Technical Design Memo Update (D)
  - Project sites: 8, 26, 28, 31, 34

Task Assumptions:

- Meeting agenda and minutes are to be provided by MCWD
- MCWD will provide one (1) written set of comments.

Task 4 Final Design (90%)

Wenck and Inter-Fluve will prepare final design documents for each project site based on the comments provided in preliminary design.

Final Design (90%)

Plan sheet drawings will be developed to the 90% completion level and submitted electronically (PDF 11”x17”).

- Wenck estimates that the plan set for project sites 2, 5, 8, 9, 10, 11, 12, 13, 30 and overall project will contain the following sheets (25 sheets)

- Title and index sheet (1 sheet)
- SWPPP (1 sheet)
- Existing Conditions/Proposed Site Plan (14 sheets)
- Proposed Grading Plan (5 sheets)
- Details (4 sheets)

- Inter-Fluve preliminarily estimates that the plan set will contain the following sheets (29 sheets):
  - Statement of Estimated Quantities (1 sheet)
  - Existing Conditions (5 sheets) – plan view including aerial photo of site
  - Site Plan (5 sheet) – plan view including access, staging, erosion and sediment control
  - Proposed Grading Plan and Profile (5 sheets)
  - Typical Cross Sections (2 sheet)
  - Channel Cross Sections (1 sheet) – existing and proposed grades and approximate proposed 100-year flood elevations for floodplain grading if needed
  - Typical Details (4 sheets)
  - Planting Plan (5 sheet)
  - Planting Details (1 sheet)

Final Design Meeting

Wenck and Inter-Fluve will participate in one final design review meeting with the Project Team.

Final Design Technical Memo

Based on the final designs, the DTDM for project sites 8, 26, 28, 31, and 34 will be updated and distributed for review and comment. The updated DTDM include an analysis of the final restoration treatments.

Opinion of Probable Construction Cost

An updated Opinion of Probable Construction Cost (OPC) will be generated for each site based on final design revisions from preliminary design.

Task deliverables and meetings:

- Final design plans (D)
- Final Technical Design Memo (D)
  - Project sites: 8, 26, 28, 31, 34
- Opinion of Probable Construction Cost (D)

Task assumptions:

- Project sites 2, 8, 10, 12 and 13 are assumed to have little to no updates from preliminary design as they are basic repairs.
- Meeting agenda and minutes are to be provided by MCWD

- MCWD will provide one (1) written set of comments.
- Changes to the planform and channel dimensions may be made in response to client comments that are received before the 90% submittal. Significant changes that are requested after that time will require an addendum.

Task 5 Construction Documents (100%)

Wenck and Inter-Fluve will complete final construction documents based on comments on the 90% submittal package. Wenck and Inter-Fluve will complete final construction documents, which will include signed project plans by a registered engineer in the State of Minnesota, written specifications, necessary permit documentation, and code review documentation, and a final opinion of probable construction cost.

Task deliverables and meetings:

- Construction Document Plans, Specifications, and Opinion of probable construction cost in PDF format (D) (WAI and IFI)
- Three (3) sets of Project Plans printed and signed on 11 x 17" paper, with additional electronic copies delivered in scanned PDF format (D) (WAI and IFI)
- Three (3) sets Project Specification printed, bound, and signed on 8 ½" X 11" paper, with additional electronic copies delivered in scanned PDF format (D) (WAI and IFI)
- Final design opinion of probable cost (D)[1] (WAI and IFI)

Task assumptions:

- N/A

Task 6 Bid Period Support

Wenck and Inter-Fluve will be readily available to field calls from prospective bidders to answer questions. We will prepare addendum(s) to address any issues in the contract documents. Wenck and Inter-Fluve will then open the bids with MCWD staff, tabulate the bids, and make a recommendation on the results.

Respond to Requests for Additional Information/Addenda

Wenck and Inter-Fluve will respond to Requests for Information (RFIs) submitted by potential bidders during the solicitation period and will prepare addenda if required. Responses will be prepared in writing and submitted electronically for distribution to all plan holders.

Pre-bid meeting

Following dispersal of bids, Wenck and Inter-Fluve will attend and assist the Project Team at a pre-bid meeting for interested contractors. Notice of the pre-bid meeting will be included in the bid package.

Contractor Selection Support

Wenck and Inter-Fluve will assemble bid tabulations electronically (MS Excel and PDF) and will assist MCWD in contractor selection (IFI participation via phone meeting).

Task deliverables and meetings:

- Written responses to questions and addenda (D) (WAI and IFI)
- Bid tabulation, analyze and make recommendation (D) (WAI and IFI)
- Pre-bid meeting (M) (WAI and IFI)
- Bid opening (M) (WAI)

Task assumptions:

- Wenck has included up to 36 hours for this task
- Inter-Fluve has included up to 59 hours for this task
- Meeting agenda and minutes are to be provided by MCWD

Task 7 Construction Engineering

Construction Staking

Wenck will provide construction staking services for projects 2, 5, 8, 9, 10, 11, 12, 13, and 30. Checking of elevation, lines, and grades during construction will be the responsibility of the construction contractor. Wenck has included up to 32 hours of construction staking.

Inter-Fluve will provide construction staking services for stream stabilization portions of projects 8, 26, 28, 31, and 34. Checking of elevations, lines, and grades during construction will be the responsibility of the construction contractor. Inter-Fluve has included up to 20 hours of construction staking services for stream stabilization portions of the projects.

Construction Observation

Wenck will provide on-site observation for project sites, 2, 5, 8, 9, 10, 11, 12, 13, and 34 construction areas during key periods of construction. The effort will include part-time observation. Wenck has included up to 24 hours of time for this task. On-site observation will be as directed by MCWD.

Inter-Fluve will provide on-site observation for project sites 8, 26, 28, 31, and 34 construction areas during key periods of construction. The effort will include both full- and part-time observation, depending on the site activity. Inter-Fluve has included up to 80 hours of time for this task, which is intended to allow Inter-Fluve to provide oversight for up to 10 anticipated construction days. On-site observation will be as directed by MCWD.

Wenck and Inter-Fluve will work closely with MCWD to provide efficient oversight of projects. Additional time can be added via addendum.

Progress Meetings

Wenck and Inter-Fluve will attend up to 6 progress meetings each with the Project Team and the construction contractor. Attendance will be directed by MCWD.

Task deliverables and meetings:

- Progress Meetings (M) (WAI and IFI)
- Coordination phone calls with Project Team and Contractor as necessary (M) (WAI and IFI)

Task assumptions:

- MCWD will organize progress meetings for the overall project and prepare meeting minutes.
- MCWD will complete progress reports summarizing work completed, estimated upcoming work to be completed, tabulate quantities, and identify issues for resolution.
- The scope outlined above is assumed to be sufficient for this task. If additional staking, observation, or meeting time is requested, it will require an addendum.

Task 8 Construction Quality Control

Submittal Review

Wenck and Inter-Fluve will review shop drawings, samples, technical performance data, and other contractor submissions for general compatibility with the design intent and conformance with information given in construction documents.

Wenck and Inter-Fluve will coordinate with the Project Team to prepare designs and/or change orders for work not covered by the contract for the Project Team's approval and execution.

Notification of Non-Complaince

Notify construction contractor of non-compliant work and coordinate remedies/corrections. Wenck and Inter-Fluve have included up to 8 hours each for this task.

Task deliverables and meetings:

- Review submittals in written format as noted above (D) (WAI and IFI)

Task assumptions:

- Digital photos of constructed facilities or key operations to support documentation will be collected by MCWD.

Task 9 Construction Contract Administration

Preconstruction Meeting

Wenck and Inter-Fluve will attend a pre-bid meeting with the Project team and selected contractor.

Pay Request Assistance

Wenck and Inter-Fluve will provide support to MCWD for tracking of material utilization, partial payment preparation, and final payment preparation. Wenck has included up to 18 hours of time for this task. Inter-Fluve has included up to 10 hours of time for this task.

Task deliverables and meetings:

- Pay Request Assistance (D) (WAI and IFI)
- Preconstruction Meeting (M) (WAI and IFI)

Task assumptions:

- Meeting agenda and minutes are to be provided by MCWD
- Material utilization and accounting of materials will be provided by MCWD
- Monthly estimates of completed work for partial progress payments will be provided by MCWD
- Change orders and supplemental agreements will be provided by MCWD
- Preparation of information required for FEMA to obtain payment for items authorized under FEMA mitigation agreement will be provided by MCWD
- Preparation of final payment will be provided by MCWD
- The scope outlined above is assumed to be sufficient for this task. If additional time is requested, it will require an addendum.

Task 10 Final Construction Documentation

Following construction, Wenck and Inter-Fluve will complete a site walk through to develop and punchlist of items for the contractor to fix before final closeout. After completion of construction Wenck and Inter-Fluve will provide record drawings of the construction product and submit to MCWD.

Task Deliverables and meetings:

- As-built drawings (D) (WAI and IFI)
- Punchlist (D) (WAI and IFI)
- Punchlist walk through (M) (WAI and IFI)

Task assumptions:

- Project sites 2, 12 and 13 are assumed to not require an as-built drawing from preliminary design as they are basic repairs.

Overall Proposal Assumptions

- Easements, access, etc. for construction will be negotiated by MCWD.
- All meeting agendas and minutes will be developed by MCWD.
- No soil borings are required.
- No wetland delineations are required.
- Independent testing (if required) will be paid for by MCWD

- MCWD will determine all necessary permits and coordinate with each applicable agency on permit requirements

Summary of Key Deliverables

a) Technical Design Memo (Draft and Final)
b) Preliminary Design Plans (60% and 90%)
c) Bid Documents (100%)
    a. Final construction plans on 11" x 17" signed and sealed by a Professional Engineer Licensed in Minnesota and signed by all other approving agencies. Hard copy and pdf format.
    b. Final specifications/special provisions and proposal. Microsoft word and pdf format.
d) As-built drawings on 11" x 17" sealed by the Project Engineer. Required in hard and electronic format.
e) AutoCAD Civil 3D (version 2017) electronic documents.
f) Electronic design calculations and hydrologic and hydraulic models.

Project Responsibilities

Table 1. Project Responsibilities

Project Site No.	Responsibility	
	Wenck	Inter-Fluve
2	X	
5	X	
8	X	X
9	X	
10	X	
11	X	
12	X	
13	X	
26		X
28		X
30	X	
31		X
34		X

Fee Summary

Table 2. Scope of Work by Task

Scope of Work	Fee Estimate		
	Wenck	**Inter-Fluve**	**Total**
Task 1: Project Management	$6,213	$7,540	$13,753
Task 2: Site Assessment	$44,127	$30,000	$74,127
Task 3: Preliminary Design (60%)	$23,946	$39,626	$63,572
Task 4: Final Design (90%)	$21,564	$23,833	$55,397
Task 5: Construction Documents (100%)	$22,448	$30,571	$53,019
Task 6: Bid Period Support	$5,049	$8,564	$13,612
Task 7: Construction Engineering	$11,584	$16,583	$28,147
Task 8: Construction Quality Control	$7,140	$7,122	$14,262
Task 9: Construction Contract Administration	$3,725	$3,303	$7,029
Task 10: Final Construction Documentation	$9,630	$7,766	$17,396
TOTAL ALL TASKS=	**$155,425**	**$174,887**	**$330,312**

The total cost for table 2 above include all reimbursable expenses including mileage, per diem, printing, and equipment rental costs.

Schedule

Wenck and Inter-Fluve anticipate the following schedule for design and construction:

Table 3. Schedule

Task	May	June	July	August	September	October	November	December	Jan	Feb	Mar	Apr	May	June
Task 1: Project Management														
Task 2: Site Assessment														
Task 3: Preliminary Design (60%)														
Task 4: Final Design (90%)														
Task 5: Construction Documents (100%)														
Task 6: Bid Period Support														
Task 7: Construction Engineering														
Task 8: Construction Quality Control														
Task 9: Construction Contract Administration														
Task 10: Final Construction Documentation														

Note: This assumes that the approval of the proposal and authorization to move forward with the work is provided by April 27th, 2018. Should that be delayed, the schedule would be moved back respectively by the number of weeks beyond April 27th, that the authorization to move forward is delayed.