Steele County
Agenda Item

Subject: Approve Contract with SRF Consulting, Inc. for the Feasibility Study of CR 180 & Mineral Springs Road Railroad Bridges and Authorize a Cooperative Agreement for Cost Participation with the City of Owatonna.

Department: Highway

Committee Meeting Date: February 11, 2021

Board Meeting Date: February 23, 2021

Consent Agenda: ☒ Yes ☐ No **Resolution:** ☐ Yes ☒ No

Policy Committee Recommendation:

Move to Board for Approval

Recommendation:

Approve contract with SRF Consulting, Inc. for the Feasibility Study CR 180 & Mineral Springs Road Railroad Bridges and Authorize the Chair and Administrator to execute a Cooperative Agreement for Cost Participation with the City of Owatonna.

Background *(Including Budget Impact)*:

The 2021-2025 Highway Capital Improvement Plan includes $100,000 for a feasibility study to consider options for addressing the Canadian Pacific Railroad bridge over CR 180 which has a sub-standard vertical clearance and is located directly over a deficient roadway structure. The City of Owatonna also desires to address a Canadian Pacific Railroad bridge over Mineral Springs Road which has a substandard vertical clearance. The Highway Department, in cooperation with the City of Owatonna, requested proposals for a Feasibility Study to study both locations. Two firms responded with a proposal for the work and both are attached.

A selection committee comprised of representatives of the County and the City independently evaluated and rated each proposal. Selection of the consultant was based on the following criteria:

1. Project Approach
2. Qualifications, specialized experience and professional competence
3. Project team experience and availability of project manager and project personnel
4. Completeness and overall feasibility of project work plan identifying deliverables
5. Proposed cost of engineering services

SRF Consulting Inc.'s proposal scored the highest on these criteria and was the low-cost proposal at $99,754 as well.

The Cooperative Agreement will be the standard agreement language. Due to the differences in the complexity of the two locations, the County will pay 60% of the cost ($59,852) and the City will pay 40% of the cost ($39,902).

Attachments:

WHKS Proposal for Feasibility Study

SRF (in partnership with TKDA) Proposal for Feasibility Study

COOPERATIVE AGREEMENT
BETWEEN
STEELE COUNTY AND THE CITY OF OWATONNA
FOR
Feasibility Study CR 180 & Mineral Springs Road Railroad Bridges

THIS AGREEMENT, made and entered into by and between the City of Owatonna, a municipal corporation, organized under the laws of the State of Minnesota, party of the first part, hereinafter referred to as "City", and the County of Steele, Minnesota, a municipal corporation organized under the laws of the State of Minnesota, party of the second part, hereinafter referred to as "County";

WITNESSETH:

WHEREAS, the Canadian Pacific Railroad bridge over Mineral Springs Road has a sub-standard vertical clearance which many trucks have crashed into, and

WHEREAS, The Canadian Pacific Railroad bridge over CR 180 has a sub-standard vertical clearance and is located directly over a deficient roadway structure, and

WHEREAS, a Feasibility Study will identify alternatives to correcting the issues at these locations, perform alternatives analysis and identify preferred alternatives which can then be used to seek funding, and

WHEREAS, a joint Feasibility Study for these two locations is the most cost-effective approach, and

WHEREAS, the County and the City desire to share the costs of the Feasibility Study, and

WHEREAS, the Feasibility Study is estimated to cost $99,754, and

WHEREAS, it is the desire of both parties to enter into a written agreement regarding the Feasibility Study for the CR 180 and Mineral Springs Road Canadian Pacific railroad bridges.

NOW THEREFORE, pursuant to Minnesota Statutes 471.59 and in consideration of the mutual covenants and promises hereinafter contained, it is agreed by and between the City of Owatonna and the County of Steele as follows:

A. That this agreement shall apply only to the Feasibility Study for the CR 180 and Mineral Springs Road Canadian Pacific railroad bridges.

B. Prosecution of work will be performed on the following basis. The County will:

1) Act as the contracting agency for the study in accordance with the requirements of Minnesota Statutes 471.345 and 375.21.

2) The County will administer all aspects of the study. Said supervision shall include keeping adequate records to document the quality of work and the substantiation of all invoices.

3) Maintain the study records open to inspection by the City or their duly authorized representatives.

4) Address public concerns with the study for the CR 180 location, and general concerns not specifically related to the Mineral Springs Road location.

5) The County will be responsible for and liable for costs it incurs in performing its obligations under this Agreement.

C. The City will:

1) Address public concerns with the study for the Mineral Springs location.

2) The City shall be responsible for and liable for all costs it incurs in performing its obligations under this Agreement.

D. The County agrees to do all things necessary for the work of said study except as set forth in this agreement. Said study is to be performed, consistent with current City and County State Aid Highway Standards.

E. The method of financing the project shall be the prerogative of Steele County and the City of Owatonna. Funding of the project is subject to the following provisions:

1) The City of Owatonna will pay 40% of the cost of the Feasibility Study and Steele County will pay 60% of the cost of the Feasibility Study.

2) REIMBURSEMENTS:

Upon completion and final acceptance of the study and receipt of an invoice with backup documentation of the final actual project costs, the City of Owatonna will reimburse Steele County.

F. The City of Owatonna agrees to save, hold harmless and indemnify Steele County and the County's officers, agents, employees, and volunteer workers against any and all claims, losses, damages, or law suits for damages arising from, allegedly arising from, or related to the provisions of the City's services hereunder, and further the City agrees to defend at its own sole cost and expense any action for proceeding commenced for the purpose of asserting any claim of whatsoever character arising as a result of the provision of City's services hereunder.

The County agrees to save, hold harmless and indemnify the City of Owatonna and the City's officers, agents, employees, and volunteer workers against any and all claims, losses, or law suits for damages arising from, allegedly arising from, or related to the County's provision of services hereunder, and further the County agrees to defend at its own sole cost and expense any action or proceeding commenced for the purpose of asserting any claim of whatsoever character arising as a result of the County's provision of services hereunder.

It is hereby understood and agreed that for the purpose of the Parties' performance hereunder, neither Party's employees shall be deemed employees of the other Party for any purpose and any and all claims made by third parties as a consequence of any act or omission on the part of a Party's employee(s) while engaged in the performance of any of the provisions of services hereunder shall in no way be the obligation or responsibility of the other Party

G. Each party shall be responsible for damages to or loss of its own equipment. Each party waives the right to sue any other party for any damages to or loss of its equipment, even if the damages or losses were caused wholly or partially by the negligence of any other party or its officers, employees, or volunteers.

H. Pursuant to Minnesota Statute 16C.05, Subd. 5, the City agrees that the County, the State Auditor, or any of their duly authorized representatives at any time during normal business hours and as often as they may reasonably deem necessary, shall have access to and the right to examine, audit, excerpt, and transcribe any books, documents, papers, records, etc., which are pertinent to the accounting practices and procedures of the County and involve transactions relating to this Agreement.

The City agrees to maintain these records for a period of six years from the date of termination of this Agreement.

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County agrees to maintain these records for a period of six years from the date of termination of this Agreement.

J. During the performance of this Agreement, the City and the County agree to the following:

No person shall, on the grounds of race, color, religion, age, sex, disability, marital status, public assistance status, criminal record, creed or national origin be excluded from full

employment right in, participation in, be denied the benefits of or be otherwise subjected to discrimination under any and all applicable Federal and State laws against discrimination.

K. Each party to this agreement reserves the right to withdraw from and cancel this agreement within 30 days from the opening of bids for the project in the event either or both parties consider any or all bids unsatisfactory; the withdrawal from or cancellation of the agreement to be accomplished by either or both parties within 30 days of opening of bids by serving a written notice thereof upon the other, unless this right is waived by both parties in writing.

L. Each party agrees that any modification of this agreement will be in writing and will be signed by the parties hereto.

IN TESTIMONY WHEREOF, The parties hereto have caused these presents to be executed.

City of Owatonna, Minnesota

_____
Mayor, City of Owatonna

Date: _____

Steele County, Minnesota

_____
Steele County Board Chair

Date: _____

Attest:

_____
City Administrator

Date: _____

_____
County Administrator

Date: _____

FEASIBILITY STUDY

CR 180 BRIDGES AND MINERAL SPRINGS ROAD RAILROAD BRIDGE

STEELE COUNTY & CITY OF OWATONNA

SRF

In Partnership With

TKDA

3701 Wayzata Boulevard, Suite 100
Minneapolis, MN 55416
763.475.0010
www.srfconsulting.com

January 29, 2021

Paul Sponholz, PE
Assistant County Engineer
Steele County

SUBJECT: PROPOSAL FOR FEASIBILITY STUDY OF CR 180 BRIDGES AND MINERAL SPRINGS ROAD RAILROAD BRIDGE

Dear Paul Sponholz and Members of the Selection Committee:

Steele County and the City of Owatonna have requested professional engineering assistance to study the railroad bridges over County Road 180 and Mineral Springs Road. In addition to less than standard roadway clearance under each railroad bridge, there is a structurally deficient box culvert at the County Road 180 location that conveys Izaak Walton Creek. The goal of this project is to work with Steele County, the City of Owatonna, the Canadian Pacific Railway, and other key stakeholders to prepare feasibility studies for new bridges at both locations to analyze alternatives and their impacts, determine project costs and funding sources, and recommend preferred alternatives.

The safety problems and design challenges at each location will require an experienced team with a broad range of skills in bridge and railroad track design, roadway design, alternatives analysis, and stormwater/stream hydraulics. **SRF** and **TKDA** are excited to team to provide Steele County and the City of Owatonna with the full range of skills and experience to develop a clear plan for future improvements. Our team is fully prepared to complete future project development if desired by the County and City.

In preparing our proposal, the SRF/TKDA team walked the project area, interviewed County staff, and reviewed available record drawings and area-wide transportation plans to fully understand the project context and constraints. We have assembled a team with extensive experience in Class 1 Railroad track design, railroad bridge design, State Aid roadway design, water resources and stream hydraulics, and traffic operations. By selecting the SRF/TKDA team, you will be assured that all elements of the alternatives analysis process will be skillfully coordinated and surpass the County and City's expectations. This will be accomplished through:

Strong, Committed Project Leadership: Nate Will will lead the team. Nate has 28 years of experience in managing complex county and city projects, many with strong similarities to County Road 180 and Mineral Springs Road including preliminary design alternatives analysis, extensive railroad coordination, bridge and roadway reconstruction, and property owner coordination. Nate is committed to working collaboratively with County and City staff and the project team to deliver a quality project on time and within budget.

Railroad Experience: Jim Hoschka has been designing track for Class 1 and industrial railroad clients for 27 years. At TKDA, Jim oversees survey, design, and construction management services for new track, intermodal facilities, bridge structures, inter-track drains, and permitting. Jim works on a daily basis with Class 1 railroad staff, responding to their everyday operational and maintenance needs and long-term capital improvement plans. His expertise will be critical to the success of this study.

Local Transportation Plan Knowledge: Craig Vaughn is currently working with staff from both the City of Owatonna and Steele County on their respective 2040 Transportation Plans. His knowledge of the local transportation system will help our understanding of the local roadway characteristics and in analyzing potential re-route options for Mineral Springs Road and County Road 180.

Deep Funding Experience: Doug Fischer will draw on his extensive knowledge of funding systems and grant opportunities to help the County and City best position themselves to apply for construction funding. In addition, Sue Miller and Mitch Rasmussen, both former Minnesota County Engineers, will assist with identifying funding sources.

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Equal Employment Opportunity / Affirmative Action Employer

As both of the railroad bridge locations are very visible and fall on important regional corridors, their replacement will receive a lot of local attention. The consultant team will need to listen closely to local residents, adjacent property owners, and other stakeholders to gain a clear understanding of the issues and concerns as project alternatives are developed. The SRF/TKDA team has the experience, technical expertise, staff capacity, and management strategy needed to successfully complete the feasibility study process. In addition, our team has the energy, enthusiasm, and commitment to move the project forward with the goal of guiding productive decision making between County and City staff and affected stakeholders. We look forward to meeting with you to discuss the project in greater detail. Our proposal is valid for a period of not less than 60 days from its receipt by the County. If you have any questions about our proposal, please contact Nate Will at 763.249.6761 or nwill@srfconsulting.com.

Sincerely,

Nate Will, PE
Project Manager

Ken Holte, PE
Division Lead – Civil Engineering

SRF Contact Person

Nate Will, PE, Principal
3701 Wayzata Boulevard, Suite 100
Minneapolis, MN 55416

P: 763.249.6761 | F: 1.866.440.6364
nwill@srfconsulting.com

2. Project Understanding and Approach

Project Understanding

Steele County and the City of Owatonna have identified two railroad bridges with substandard vertical clearance. Both railroad bridges are over 100 years old and are located on important roadway corridors. Due to the low clearance, the bridges have been struck by vehicles many times. Based on available railroad inventory data, the track segments that cross County Road 180 and Mineral Springs Road carry one daytime and two nighttime trains operating at a maximum of 30 mph. A feasibility study and alternatives analysis is required at each location to develop preliminary design options and to identify preferred alternatives to improve conditions at both locations.

The County Road 180 location is summarized as follows:

- Railroad Bridge No. 6037 (CP Railway) 50-foot steel-deck-girder structure built in 1908; vertical clearance 12 feet.
- Bridge No. 4686, 12-ft span, concrete box culvert built in 1925 conveys Izaak Walton Creek; listed as structurally deficient.
- CR 180 is prone to flooding at this location.
- There are no pedestrian facilities along CR 180 at this location.
- CR 180 is an important east-west roadway that connects to other roads (i.e., CSAH 2 to the west) through the county connecting with neighboring counties. This will be furthered by its connection to Old US Highway 14 to the east - connecting Owatonna and Claremont in 2022.

Per FEMA mapping, Izaack Walton Creek (IWC), is a FEMA Zone AE, which indicates that mapping was conducted via detailed hydraulic modeling. The regulatory hydraulic profiles, provided in the Flood Insurance Study (FIS) for IWC indicate that it overtops CR 180 in events greater than the 10-year. This is corroborated by information provided in the request for proposal. The hydraulic profiles of IWC at Bridge No 4686 are influenced by the tailwater conditions at the downstream crossing of Rice Lake Rd, especially at the 50, and 100-year event. As such, the desired level of protection provided to CR 180 will dictate the viable solutions to replacing the culvert crossing, as high tailwaters can only be overcome by raising the road up and out of the floodplain. With low tailwaters, widening and providing additional flow area can help to mitigate flooding.

The SRF/TKDA team will assess the sensitivity of the hydraulic crossing and work with stakeholders to assess the cost benefit relationships of stream impacts to help define the level of protection. We will also engage the MnDNR Floodplain specialists to provide input and concurrence of our analysis. SRF has a strong working relationship with MnDNR and have conducted this process numerous times to help inform feasibility and alternative analysis.

Roadway sections and local drainage at this site are rural in nature. The alternative analysis at this location will ensure existing drainage patterns are propagated, or changes are mitigated properly. The alternative analysis shall also assess changes to impervious surfaces to stay compliant with State and Local water quality requirements.

The Mineral Springs Road location is characterized as follows:

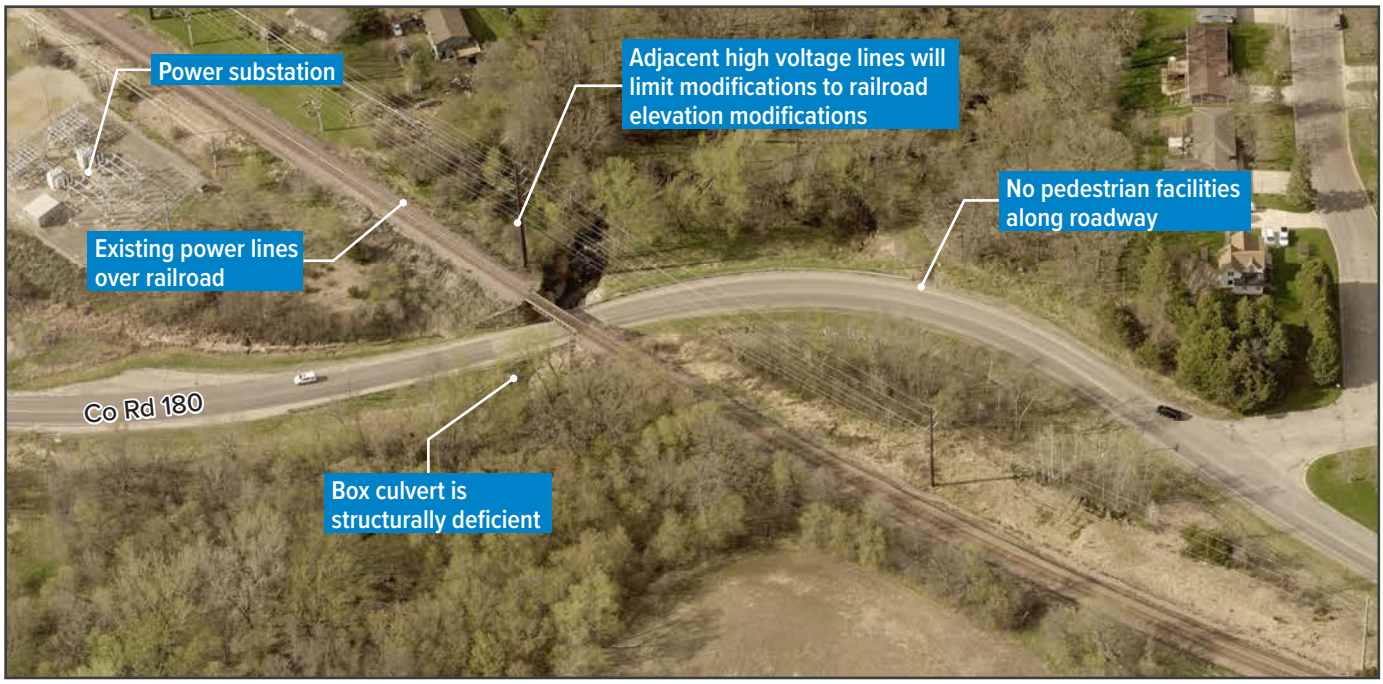
- Railroad Bridge No. 88071 (CP Railway) 45-foot steel-span structure built in 1894; Vertical clearance 11-ft, 8-in.
- Mineral Springs Road is prone to flooding; the storm sewer system in the area may be undersized.
- Pedestrian passage under the railroad is accommodated by a substandard pipe culvert tunnel
- Mineral Springs Road is an important route on the city system serving as a Minor Arterial carrying approximately 8,500 vehicles per day. It connects the northeast part of town to the Owatonna core and beyond.
- There are sight distance concerns at the Mineral Springs Road railroad bridge and a skewed intersection to the west.

The roadway drainage in this location is urban and likely undersized. Local contributing drainage areas may range from close to North Elm Avenue to the west, Cherry Street to the east, and up Cherry Street past North Pine Avenue, and potentially further in larger or intense events that overwhelm the local system. This drainage area then contributes to the flooding experienced under the CP Railway, which is the local low point. Prior to the alternative analysis, a strong understanding of the contributing drainage area and the adjacent drainage infrastructure will be gathered to assess the magnitude of flows and flow volumes reaching the low point. With this information the required storm sewer infrastructure needed to handle the flood flows can then be part of the alternative evaluation, as it will impact construction extents, pier and abutment placement, etc.

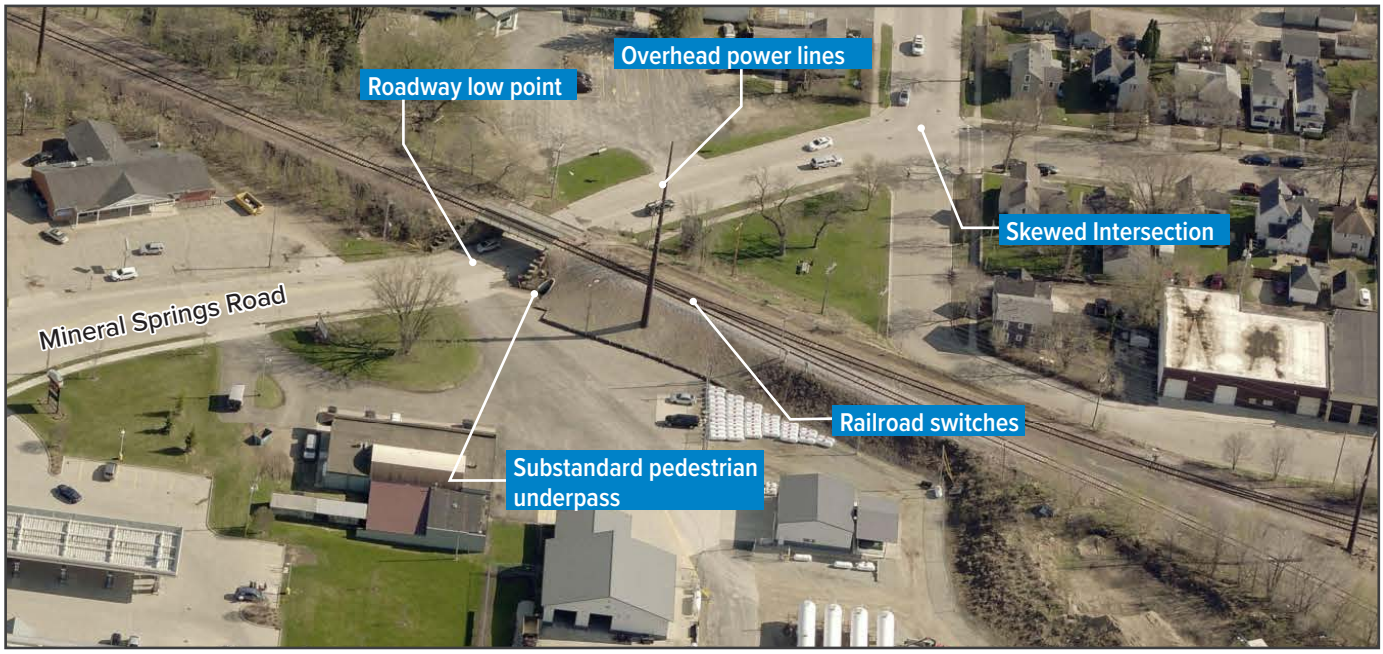
There is a significant overhead power line that parallels the CP Railway in both locations. The power lines and support poles will need close consideration for proposed railroad and roadway alignment alternatives.

These challenging characteristics and other project issues are highlighted on the project area maps on the following page.

Project Area Map - CR 180



Project Area Map - Mineral Springs Road



Poor bike/pedestrian accommodations at both locations

Project Approach

Our team has discussed the project challenges with County staff to help provide us with a clear understanding of the project and the desired goals and objectives. We've combined this project background information with a site visit and thorough review of the RFP to help us develop an approach that will ensure our team exceeds the expectations of the County and City.

The key to our team's approach is our depth of experience. The SRF/TKDA team will draw on our railroad, roadway, hydraulics, and utility coordination experience to work collaboratively with staff from the County, City, CP Railway, and MnDOT to develop alternatives at both locations. Our methodology includes close coordination throughout the alternative's analysis process:

- Initial meeting with stakeholders (County, City, CP Railway, MnDOT) to brainstorm alternatives
- Design team analysis to determine viability
- Layout preparation of viable alternatives, including costs and impacts
- Stakeholder review/comment
- Public input
- Prepare draft feasibility reports
- Stakeholder review/comment
- Finalize feasibility reports

The preparation of the feasibility studies will require close coordination with representatives from Steele County, City of Owatonna, CP Railway, and MnDOT to ensure that the preliminary design alternatives meet all agency requirements. Identifying preferred alternatives including cost estimates and environmental and right of way impacts will be a significant benefit to securing future funding for construction.

The experience of the SRF/TKDA team is woven into this process and will provide the County and City with high quality deliverables throughout the project. Our approach for each subtask is further detailed in the Work Plan section of this proposal. However, it is important that our team meets with the County and City staff to confirm assumptions and expectations and be on the same page as the project begins.

Sight lines are limited at CR 180 due to roadway curvature; Mineral Springs Road also has sub-standard sight lines.

3. Project Team, Experience, and Availability

SRF Consulting Group

Established in 1961, SRF is headquartered in Minneapolis and employs more than 350 engineers, planners, and designers who work with public sector clients across the Midwest. SRF's award-winning projects range from designing highway interchanges and bridges to planning statewide transportation systems to revitalizing neighborhoods and urban spaces.

SRF has a long history of providing cities and counties with a full range of professional services needed for projects like this including stream hydraulics and floodplain analysis, box culvert designs, roadway alternatives analysis and design, pedestrian facilities and utility coordination. We have worked on many similar projects, from the initial feasibility studies, through preliminary and final design, through construction.

We are committed to delivering quality that stands the test of time, striving for innovation and sustainability, providing superior service, and being true to the spirit of collaboration. Our long-term client relationships reflect our ability to provide quality services and creative solutions that make a difference.

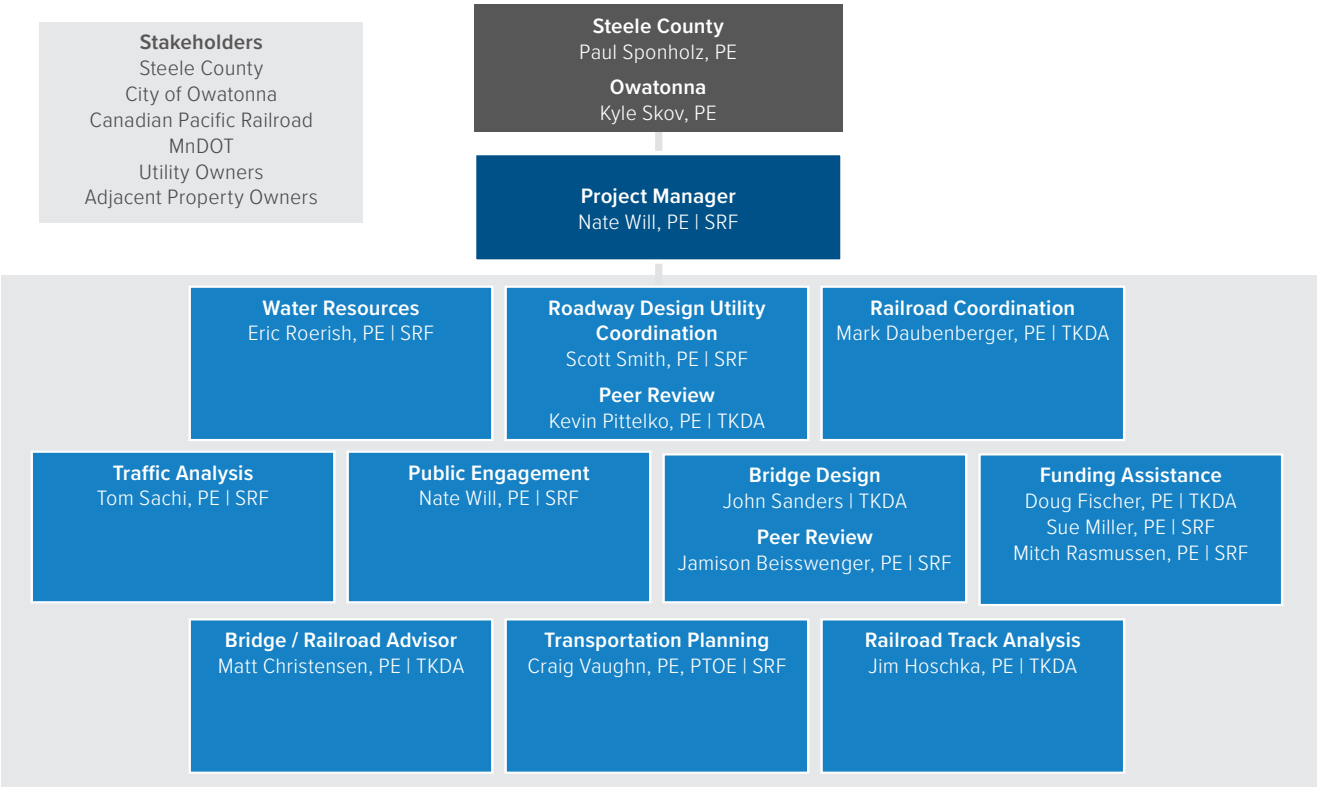
TKDA

Established in 1910, TKDA is a fully-integrated engineering, architecture, and planning firm based in Saint Paul. Their staff of over 300 offers a full range of services from planning and design to construction administration and operational support. TKDA creates safe and efficient solutions that meet client goals, design standards, project budget, and schedule. They are a trusted transportation partner for highways, bridges, interchanges, roundabouts, trails, retaining walls, construction staging, permitting, and construction inspection.

TKDA provides planning and design, along with operations, maintenance, and construction management services to Class 1, short line, commuter, and private industry railroads across the U.S. and Canada. Their rail transportation services include bridges and tunnels, track and yards, mechanical and fueling facilities, maintenance and administration buildings, electrical distribution systems, intermodal facilities, and projects that require rail coordination with public agencies. Among their clients are CP Railway, BNSF Railway Company, Union Pacific Railway, Norfolk Southern Corporation, Canadian National Railway, and Amtrak.

Organization Chart

The organization of the SRF/TKDA team is presented below, and resumes for our team members are presented on the following pages.



Nate Will, PE | Project Manager & Public Engagement

Nathen manages and designs a variety of municipal and highway projects. He has 28 years of experience in engineering, including project management, feasibility studies, preliminary and final design, coordination with public agencies, and construction administration. Nate has significant experience with local municipal, county, and State Aid design including projects with complex utility design and construction staging. His relevant projects include:

CSAH 14 Design-Build, Anoka County, Minnesota. The first county-led design-build roadway project in Minnesota reconstructed three miles of CSAH 14 (between TH 65 and Hanson Boulevard) and converted the two-lane road to a four-lane divided urban roadway. The design included a new bridge over the BNSF Railroad, replacement of five traffic signals, several water quality ponds, realignment of County Ditch 60, significant utility coordination and relocations, multiple construction stages requiring temporary traffic control measures and traffic detours, and an aggressive five-month design and construction schedule. Nate was the lead roadway design engineer responsible for roadway alignments, geometry, profiles, cross-sections and pedestrian access.

CSAH 18 (Lyman Boulevard) Reconstruction, Carver County, Minnesota. This challenging project involved reconstructing an existing two-lane rural roadway to a four-lane urban roadway from Audubon Road to Galpin Boulevard. Construction plans were expedited to coordinate with the planned opening of the new Chanhassen High School, which included three signalized entrances to CSAH 18. Nate managed this project which included coordination with TC&W Railway to expand the at-grade crossing to accommodate the four-lane roadway.

Eric Roerish, PE | Water Resources

Eric will lead the surface drainage design and the hydraulic design of the Izaak Walton Creek crossing alternative analysis. He has 21 years of national water resources design and management experience with an emphasis on hydrology, hydraulics, scour, channel and bridge protection design, flood mitigation design, and local, state, and federal permitting. Five years were providing hydraulic design services for Union Pacific Rail Road bridge and culvert replacement designs. Eric has developed and applied various hydrologic numerical and analytical models to support alternative analyses and design refinement of new and replacement culverts and bridge crossings of creeks and rivers. Local physical characteristics, permitting requirements, client goals, and modeling results are all elements that are weighed when selecting a preferred solution. FEMA CLOMR/LOMR requirements are often a major driver in design. Eric has successfully worked with bridge designers to achieve a "No-Rise" condition on numerous projects and avoid FEMA permitting. Below are examples of very recent projects Eric worked on that achieved the "No-Rise" condition or fit within FEMA guidelines to avoid permitting.

TH 10/Rum River, Anoka County, Minnesota. Eric lead the bridge replacement hydraulics, storm sewer, and water quality BMP alternative analysis, preliminary design, and permit coordination. The bridge type study balanced road profile corrections with impacts to local bridge crossing over TH 10. The preferred alternative minimized impacts and costs, while achieving a 'no-rise' condition.

TH 212/Carver Creek, Minnesota. Eric lead the rural drainage design and the Carver Creek crossing alternative analysis, final design and permitting. The selected creek crossing achieved a 'no-rise' condition and improved creek functionality within the reach.

CSAH 22/Outlet to Goose Lake, Minnesota. Eric's team performed the alternative analysis of the CSAH 22 crossing of Goose Lake outlet. The successful design was a balance of constructability, elimination of flooding, permitting, and achieving a 'no-rise' condition.

Scott Smith, PE | Roadway Design and Utility Coordination

Scott has managed and designed a variety of municipal, county and state roadways, as well as trail and site development projects. He has 24 years of experience in engineering, including project management, survey, inspection, feasibility studies, preliminary and final design, public agency coordination, and construction administration. Prior to joining SRF, Scott was a Project Manager/Design Engineer/Civil Engineer with Carver County for 16 years. Scott's experience also includes working for the City of Shakopee as the Assistant City Engineer and Designer for three years. Scott has significant experience with City State Aid and County State Aid projects as well as several years experience managing Federal Aid projects under the DCP process that include complex road designs, utility designs and construction staging. This includes multiple stakeholders with separate complex and multiple funding agreements. Scott's relevant projects include:

CSAH 18 (Lyman Boulevard) Reconstruction-Phase 1, Carver County, Minnesota. This was a very challenging project that is currently moving into construction. Scott's involvement was getting various agencies approvals with SRF in developing preliminary design, final design, stormwater management features, wetland mitigation, final plans, project proposal, project bidding and project award. The project includes 3 roundabouts and a significant amount of communication with City agencies, MnDOT and the surrounding businesses.

CSAH 61 Bridge Replacement and Road Improvements, Chaska, Minnesota. As the City of Chaska and it's surrounding communities expanded and the roadway aged, the 0.5 mile of existing bridge and roadway from TH 41 to CSAH 44 needed significant safety improvements. The final design was a median divided 4-lane roadway with trail & sidewalk, bridge with trail, Pedestrian Hawk signal system as well as stormwater management features. Scott was involved with the final design review and served as the County's Project Manager that oversaw all construction related activity.

Tom Sachi, PE | Traffic Analysis

Tom's work focuses on traffic impact studies, corridor studies, and evaluations of new data collection technologies. Tom has worked on projects throughout the Midwest, using a multitude of traffic operations/capacity analysis tools and softwares to analyze projects. He has also completed multiple interchange access or operations reports. Tom co-authored the Addressing Citizen Requests for Traffic Safety Concerns guidebook, which won the 2018 APWA Exceptional Performance in Journalism Award. He has worked on 100+ residential and commercial development traffic studies, and 15 school-related traffic management plans. Additionally, Tom has led several large-scale data collection efforts throughout the Midwest.

Craig Vaughn, PE, PTOE | Transportation Planning

Craig has more than 21 years of experience in traffic and transportation engineering and planning. His abilities include performing a wide variety of traffic and transportation project work such as transportation plans, corridor studies, multimodal plans, travel demand forecasts, and preliminary design projects. Craig has also managed many multidisciplinary projects. His strength is in overall project coordination and delivery coupled with facilitation of efficient and effective public involvement process. Craig is currently working with the City of Owatonna and Steele County on their respective 2040 Transportation Plans. This experience provides him with unmatched situational awareness and knowledge of the Mineral Springs Road and County Road 180 roadway needs.

Mark Daubenberger (TKDA) | Railroad Coordination

Mark has been designing bridges and retaining walls for railroads, trails, and highways, and for 27 years. He is also active in the design of trails and roadways. Mark provides project management, agency coordination, public engagement, feasibility studies, environmental documentation, preliminary and final design, plan production oversight, cost estimating, special provisions, construction contract administration, and quality management.

Robert Piram Regional Trail; Saint Paul, South St. Paul, and Lilydale, MN. Pedestrian trail connection linking the City of Saint Paul's Harriet Island Regional Park and Kaposia Landing Park in the City of South St. Paul. The proposed 3.7-mile-long multi-use, off-road trail which features a bridge over Union Pacific Railroad, will become a part of the multi-state Mississippi River Trail (MRT). Mark led alternatives analysis, railroad coordination, preliminary engineering, final design and construction documents, and construction administration services.

Point Douglas Regional Trail and Pedestrian Bridge; Washington County, MN. Preliminary and Final Design Services for Point Douglas Regional Trail Pedestrian Bridge 82J26 over BNSF Railway. Mark led preliminary and final bridge and trail design, coordination with MnDOT and BNSF, and construction inspection.

Bridge 38.92 Replacement over TH 12; BNSF Railway Company, Delano, MN. Design of 159'-4" three-span bridge with 92'-8" steel welded plate girder with steel ballast plate main span. The new bridge was built under traffic and accommodates a wider highway section with increased vertical clearance. MnDOT required architectural features on the bridge to match the corridor aesthetics. Responsible for checking of the final plans and special provisions.

John Sanders, PE (TKDA) | Bridge Design

John has 32 years of service with TKDA. He has extensive experience in the design of railroad bridges and retaining walls, including new construction and rehabilitation. John has served as TKDA's Project Manager and lead Design Engineer for BNSF Railway Company bridge rehabilitations and bridge rebuilds at more than 340 sites in 17 states. Steel structures have included rolled beams, welded plate girders, and through plate girders. Prestressed concrete spans have included slab spans, single-cell box girders, double-cell box girders, T-girders, and I-beams. He has also completed designs of bridges and retaining walls for the Minnesota Department of Transportation, including new construction and rehabilitation. As a Project Manager, John oversees budgets and is responsible for quality control, scheduling, and client contacts.

Bridge 7.18 Replacement Over Raymond Avenue; BNSF Railway Company, Saint Paul, MN. The project involved design of a 94'-1" single-span double-track bridge with a 94'-1" steel through plate girder. The new abutments were built under traffic and the main span was rolled in. John's responsibilities were the abutment design and detailing.

Bridge 38.92 Replacement Over TH 12; BNSF Railway Company, Delano, MN. Design of a 159'-4" three-span bridge with a 92'-8" steel welded plate girder with steel ballast plate main span. The new bridge was built under traffic and accommodates a wider highway section with increased vertical clearance. MnDOT required architectural features on the bridge to match the corridor aesthetic design guide. John was responsible for managing the project and quality control.

Matt Christensen, PE (TKDA) | Bridge/ Railroad Advisor

Matt has been involved in project management and bridge analysis and design for 21 years. He designs post-tensioned and mildly reinforced concrete slab bridges, pre-stressed concrete beam bridges, post-tensioned concrete box girder bridges, straight steel beam bridges, and curved built-up steel beam bridges. Matt also is a frequent team member with the TKDA rail division and works with rolled beam bridges, built-up beam bridges, and through-girder bridges.

CSAH 158 (Vernon Avenue) over CP Railway; Hennepin County, Edina, MN. Preliminary and final design services for the replacement of Bridge 4510. An alternatives analysis and initial railroad coordination was recently completed. Preliminary design is now underway.

Matt is responsible for project management, bridge design, and railroad coordination.

CSAH 11 (Foley Blvd) Bridge 02584 over BNSF; Anoka County, Coon Rapids, MN. Anoka County procured TKDA to complete the preliminary and final design for the reconstruction of Foley Boulevard (CSAH 11) from East River Road (CSAH 1) to Coon Rapids Boulevard (CSAH 3) in the City of Coon Rapids. When completed in 2022, Foley Boulevard will be a four-lane divided section that will be grade separated from the BNSF railroad tracks. Matt was responsible for project management and railroad coordination.

Twin Ports Interchange Preliminary Engineering; MnDOT District 1, Duluth, MN. Project design coordinator with BNSF for the reconstruction of theTPI that will have right-of-way and operational impacts on BNSF Railway. The existing interchange, as well as the proposed interchange, has four bridges over two BNSF mainline tracks that provide access to area industry and the BNSF Rice Point Yard. The existing Miller Creek box culvert will also be replaced with the TPI project, requiring extensive staged construction and coordination with BNSF.

Jim Hoschka, PE (TKDA) | Railroad Track Analysis

Jim has been designing track for Class 1 and industrial railroad clients for 27 years. As TKDA's Track and Yard Group Manager, he oversees survey, design, and construction management services for new track, intermodal facilities, auto facilities, bridge structures, access roads, public/private road crossings, drainage culverts, inter-track drains, and permitting. Jim works on a daily basis with our Class 1 railroad clients, responding to their everyday operational and maintenance needs and long-term capital improvement plans. He also frequently serves as a facilitator between railroads and public agencies.

Raymond Avenue Track Raise; BNSF Railway Company, Saint Paul, MN. Provided grading plans, bid package, and construction staking for the Raymond Avenue Track Raise Project in Saint Paul, MN.

Bridge No. 68.0; BNSF Railway Company, Sioux Falls, SD. A three-span bridge over Pasley Park Road. The bridge construction was part of a larger grade separation project. The bridge has two 27-foot-10-inch pre-stressed concrete double-cell box beam end spans and a 48-foot-3-inch rolled beam center span with a steel ballast plate. The piers, which consist of a precast concrete cap on piling, were encased in concrete and received architectural treatment.

Bridge No. 34.87; BNSF Railway Company; Harwood, ND. A 572-foot-long, nine span bridge for the US Army Corps of Engineers and the BNSF Railway Company as part of a flood control diversion control channel around Fargo, ND. The center span consists of a 114-foot long welded plate girder span and the approach spans are precast concrete girders. The Project also included a 7,000-foot shoo-fly track.

Doug Fischer (TKDA) | Funding Assistance

Doug is Vice President of TKDA's Municipal Division. He has been involved with highway, bridge, street, drainage, and utility projects for 35 years. From planning, preliminary engineering, environmental review, final design, funding, construction, and construction administration, Doug's vast experience and knowledge is invaluable to assist clients deliver projects. Doug's previous work in the public sector brings an in-depth understanding of client's needs and pressures that accompany many projects and provides real-world working solutions navigating through complex legal, regulatory, and political situations to accomplish project goals.

As the former County Engineer/Transportation Division Manager with Anoka County for 17 years, Doug was responsible for $478M of highway reconstruction and rehabilitation projects, $60M in engineering services contracts, and $71M of right-of-way acquisition. The key to this robust program delivery was not just limited to his engineering skills and expertise but due to Doug's intimate knowledge of funding systems and grant opportunities, expert communication skills with the public and elected officials to gain project consensus, and leadership skills in building collaborative teams and partnerships.

Sue Miller, PE | Funding Assistance

Sue joined SRF after nearly three decades of leading county and city public works teams. Her collaborative approach resulted in innovative, sustainable and sharable solutions. While with Freeborn County, Sue led the management and operation of more than 600 miles of county highways and 179 bridges.

Sue's passion for improving safety on local roads saw her inauguration as a member of Minnesota's first County Engineer Safety Committee. Her strategic thinking and leadership within the team helped to successfully secure millions of federal highway safety dollars now annually available to all 87 counties.

Mitch Rasmussen, PE | Funding Assistance

Mitch brings more than 30 years of experience working at all levels of state and local government in Minnesota. His diverse background includes all facets of design and construction as well as specialized knowledge in funding programs and processes, interagency cooperation, and asset management. Mitch joined SRF from the Minnesota Department of Transportation where he served as the Assistant Commissioner - State Aid Division where he led state aid and federal funding for cities and counties across the state and served on MnDOT's leadership team to help shape MnDOT's direction and policy positions as they relate to local agencies. Prior to MnDOT, Mitch held positions as the Scott County Engineer/Public Works Director, Burnsville City Engineer, and Rice County Engineer.

SRF & TKDA Project Experience

SRF and TKDA have selected the following projects to highlight our qualifications.

BRIDGE NO. 02583 CSAH 14 DESIGN-BUILD | *Anoka County, Minnesota*

Anoka County managed the first county-led design-build (D-B) roadway project in Minnesota. SRF served as the lead designer to C.S. McCrossan for the $36 million project. The project reconstructed three miles of CSAH 14 between TH 65 and Hanson Boulevard and converted a two-lane road to a four-lane divided urban roadway. A key design element included design of new grade separated bridge over the BNSF Railway. The new bridge is a single-span 123 feet structure which spans the existing track and allows for two future tracks. SRF coordinated with BNSF during design including preloading of inplace soils in order to utilize cost effective spread footing abutments. The tracks remained active throughout construction. The new roadway profile was designed to pass safely under an existing high voltage transmission line west of the new bridge over BNSF Railway. The design of CSAH 14 included replacement of five traffic signals, several water quality ponds, realignment County Ditch 60, significant utility coordination and relocations, and multiple construction stages that required temporary traffic control measures and traffic detours. SRF designers created a pedestrian tunnel through the MSE wall embankment to address the importance of safe bicycle and pedestrian connectivity in this growing community.

Awards

- MnSPE Seven Wonders of Engineering Merit Award
- ACEC/MN Engineering Excellence Honor Award

BRIDGE NO. 7.18 REPLACEMENT | *Saint Paul, Minnesota*

TKDA was commissioned by BNSF Railway to design a new bridge in Saint Paul, Minnesota, to replace an existing 100-year-old bridge. The new bridge was designed for increases both vertically and laterally. The existing bridge is a skewed three-span thru plate-girder bridge; the new bridge is a single-span thru plate-girder bridge. The superstructure has two main girders that are 10 feet 6 inches tall and 92 feet long. New abutments were constructed behind the existing abutments and under temporary steel jump spans to minimize disruption to the railroad traffic. Concurrently the new superstructure was constructed next to the existing bridge and rolled into its final position well within a 24-hour track closure window.

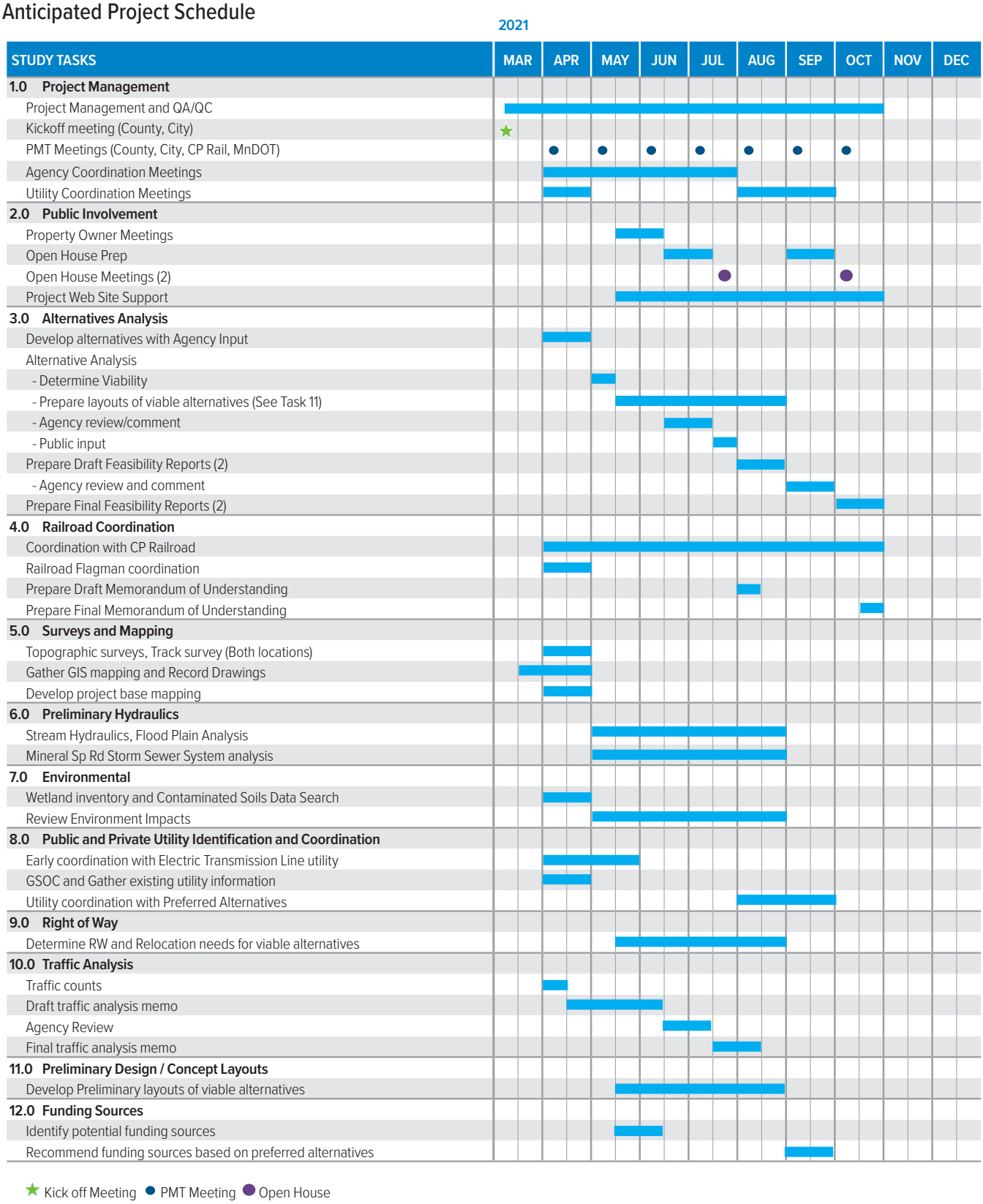
BRIDGE NO. 38.92 REPLACEMENT | *Delano, Minnesota*

TKDA was commissioned by BNSF Railway Company to design a new bridge in Delano, Minnesota, to allow for roadway improvements to TH 12 below. The roadway was widened from 24 feet to an 82 foot wide section. The new bridge is designed to increase both the vertical and lateral clearance. The bridge has 33 foot long concrete double-cell box girder approach spans and a 93 foot long welded-steel-plate girder main span. The built-up steel girder span has four 5 foot 7 inch deep girders. To minimize disruption to the railroad traffic, the line was constructed with only three track closure windows, with the longest closure being 20 hours.

4. Detailed Work Plan and Schedule

The SRF/TKDA team has closely evaluated the project tasks and deliverables to create a realistic project schedule. As shown on the following page, our schedule estimates starting and completion dates for key tasks and allows for critical review time by County and City staff and other agencies. As shown, our project schedule assumes authorization to proceed in early March 2021.

Anticipated Project Schedule



Work Plan

Task 1: Project Management

Effective project management, including coordination of major project activities is the cornerstone of a successful project. Overall project management tasks will include:

- Coordinating all team members including SRF/TKDA team, County and City staff, CP Railway, and key project stakeholders.
- Ensuring frequent and clear communication with team members (email, telephone, zoom meetings, formal correspondence, etc.)
- Monitoring project schedule and budget.

Project manager Nate Will is highly qualified to manage all aspects of the CR 180 and Mineral Springs Road project. He has experience in all aspects of the project and will successfully guide the team and coordinate the alternatives analysis design process. Nate will maintain regular contact with County and City staff to coordinate the work and maintain the project schedule. He will facilitate the project kick-off meeting, lead Project Management Team meetings, engage stakeholders as appropriate, and produce timely meeting minutes.

Nate will set up and monitor a **quality control program** specifically tailored to the CR 180 and Mineral Springs Road project. A Quality Management Plan (QMP) will be shared with the project team that will specify daily and periodic QA/QC procedures. An internal quality check will be performed on every deliverable – from meeting minutes to bridge design computations – to ensure accuracy and completeness.

DELIVERABLES: Monthly invoicing and progress reports, project meeting schedule, meeting agendas, handouts, and minutes.

Task 2: Public Involvement

The public involvement task includes meetings with property owners, soliciting public input, conducting two public open house meetings, and supporting the project website to be hosted by Steele County. Nate Will will also lead up to four small group property owner meetings.

Nate will lead the two public open house meetings. Given the current COVID-19 situation, our team is prepared to deploy a variety of online open house alternatives. We will develop interactive and visually engaging materials that enhance public and stakeholder understanding of both project areas, while providing easy opportunities for community members to ask questions and provide feedback. If online open houses are still necessary when we have prepared alternatives, we will provide rich engagement experiences for community members, providing a high level of interaction and engagement similar to a traditional open house. Potential options include an online open house using the Arc StoryMap platform, webcasting, Facebook Live, narrated video presentations, facilitated office hours, and other public engagement strategies. We will work with the County and City to tailor the approach that best meets the needs of the project.

DELIVERABLES: Minutes from property owner meetings; notices, brochures, handouts, and displays for open house meetings; project updates, maps, and technical data for the project web site.

Task 3: Alternatives Analysis

The alternatives analysis task includes coordination with County, City, and CP Railway stakeholders to identify viable alternatives. The skills required to develop viable alternatives for further study will take a consultant team with a broad range of experience in railroad bridge and track design, MnDOT State Aid roadway design, stream flow and hydraulic analysis, as well as a thorough understanding of the local transportation network and future transportation planning needs. The SRF/TKDA team has the skills and experience to study and recommend a preferred alternative at each location.

The RFP included descriptions of potential alternatives for both locations. Once we are under contact, the SRF/TKDA team will thoroughly review each option presented in the RFP. Our team has completed a high-level initial review of the options presented and our observations are presented in the tables below.

We have also included a consultant-provided option for initial consideration. Based on our experience with similar projects, a potentially feasible railroad overpass structure type alternative that should also be considered is a steel beam main span with precast concrete slab approach spans. Steel beams, either rolled shapes or welded sections similar to Bridge 38.92 shown on page 8, are routinely used and often preferred by railroads. These structures are typically the most cost effective, require the least amount of construction time, and are most conducive to being constructed under train traffic.

Based on existing conditions data (as-builts, topo survey, etc.) our team will coordinate with staff from County, City, and railroad to develop and review initial alternatives. We assume up to three viable alternatives will be developed for both locations. Preliminary layouts and cost estimates will be prepared for each alternative (completed under Task 11). The team will solicit feedback from affected stakeholders including County, City, railroad, and adjacent property owners, and input from the general public at open houses and project website feedback.

Location 1 - County Road 180

Alternative	Alternative constructable?	Receive CP Approval?	Comments
1. Realign CR 180 with new stream crossing location and new at-grade RR crossing.	This alternative appears feasible	May be difficult to get CP Rail to approve new at-grade crossing	Potential feasible alternative. Need to investigate further
2. Reconstruct RR bridge, raise RR profile; and raise road profile at existing location	Raising RR profile will introduce conflicts with adjacent power poles and overhead lines	Revised track grades will need CP Rail approval	Need to investigate further
3. Reconstruct RR bridge, raise RR profile; realign CR 180 and raise road profile at new location; new stream structures for roadway and RR.	Raising RR profile will introduce conflicts with adjacent power poles and overhead lines	Revised track grades will need CP Rail approval	Need to investigate further

Location 1 - County Road 180			
4. Construct new roadway structure over railroad; new stream structure	Likely not constructable; a new roadway structure over the RR will require relocation of the high voltage power lines.	New roadway bridge over RR will need CP Rail approval	Likely not a feasible alternative.
5. Close roadway at RR, maintain a ped underpass; re-route CR 180 to alternate alignment	Appears feasible. Need to coordinate with County and City to determine acceptable alternate route.	Depends on alternate route; need to coordinate with CP Rail	Potential feasible alternative. Need to investigate further
6. SRF/TKDA proposed alternate: Construct new steel beam RR bridge at the same location	Steel beam RR bridge design in same location may allow for shallower RR bridge depth.	Economic structure type often preferred by railroad need to coordinate with CP Rail.	Potential feasible alternative. Need to investigate further
7. SRF/TKDA proposed alternate; Construct new steel beam RR bridge in new location	Steel beam RR bridge in new location may allow for shallower RR bridge depth	Economic structure type often preferred by railroads; need to coordinate with CP Rail	Potential feasible alternative. Need to investigate further.

Location 2 - Mineral Springs Road			
Alternative	Alternative Constructable?	Receive CP Approval?	Comments
1. Reconstruct RR bridge with thru girder; raise RR profile; raise or lower road profile	Raising RR profile will introduce conflicts with adjacent power poles and overhead lines	Revised track grades will need CP Rail approval	Investigate further; track raise problematic due to switches and proximity to at-grade road crossings.
2. Construct roadway overpass structure; lower RR profile if possible.	Likely not constructable; a new roadway structure over the RR will require relocation of the high voltage power lines.	New roadway bridge over RR will need CP Rail approval	Likely not a feasible alternative.
3. Construct new at-grade RR crossing.	Potentially feasible depending on revised roadway profile	May be difficult to get approval of new at-grade crossing	Investigate further; requires significant roadway profile adjustments and review of access and adjacent driveways.
4. Reroute Mineral Springs Road	Potentially feasible. Coordinate with County and City to determine acceptable alternate route.	Depends on alternate route; need to coordinate with CP Rail	Potential feasible alternative; investigate further
5. SRF/TKDA proposed alternate: Construct new steel beam RR bridge	Steel beam RR bridge design in same location may allow for shallower RR bridge depth.	Bridge type has been approved by CP Rail; need to coordinate with CP Rail.	Potential feasible alternative; investigate further

Viable alternatives will be presented in two draft feasibility studies, one for each location. The draft studies will include estimated costs, utility and environmental impacts, right of way needs, and possible relocation requirements. The studies will also propose a process going forward to secure project funding, complete design and right of way acquisition, and plan for construction. After the County and City complete their review of the drafts, we will prepare final feasibility studies.

DELIVERABLES: Matrix of potential alternatives; draft and final feasibility studies (concept layouts and cost estimate deliverables are included in Task 11)

Task 4: Railroad Coordination

Early in the project, TKDA will hold a virtual meeting with representatives from CP Railway to brief them on project objectives and the study. We will request current railroad standards and requirements and solicit information that may be pertinent to the study, such as future plans for bridge and track improvements and existing infrastructure. As the feasibility study progresses, we will conduct another virtual meeting with CP Railway to present the options being considered and discuss the framework of the Memorandum of Understanding (MOU).

Standards outlined by railroads are often impractical to satisfy. If necessary, a variance request with written justification and supporting documentation will be submitted to the railroad for consideration and approval. A successful request will succinctly describe all geometric and structural constraints which make the railroad preferred/approved alternate not feasible and show all options have been exhausted. Past experience has shown railroads do not consider cost alone to be a determining factor. **TKDA understands the railroad requirements and how difficult they can be to achieve and have been successful with variance requests on several recent projects.**

The MOU will identify key CP Railway personnel involved in development of the project; bridge, track, and at-grade crossing design standards; guidelines for temporary works; design responsibilities; overpass, at-grade crossing, and right of entry agreement requirements; utilities; right of way and easement requirements and procedures; bridge ownership; and coordination protocols. The MOU will include, as attachments, the preferred bridge alternative and standard variance request and justification (if applicable).

DELIVERABLE: Meeting materials and minutes and draft/final MOU

Task 5: Surveys and Mapping

Topographic survey will be conducted at both sites using GPS to collect data suitable to inform the design team of site conditions and constraints for the feasibility study. The following information will be collected:

CR 180: railroad cross sections approximately 1,000 feet up/downstation of the bridge; bridge corners, seat, and bottom of beam; box culvert corners, invert; and two creek sections up/downstream of the box culvert; transmission poles.

Mineral Springs: railroad cross sections between Elm Avenue and Pine Avenue; bridge corners, seat, and bottom of beam; roadway centerline/gutterline/driveways between Grove Avenue and Cherry Street; and transmission poles.

We have assumed that parcel and RW lines will be based on GIS data and utility information will be provided by the utility owner and, therefore, not included in the survey scope.

DELIVERABLE: Survey data file

Task 6: Preliminary Hydraulics

County Road 180

The first step will be to identify and document drainage design standards and goals for overland flow and the IWC crossing at CR 180 for team consideration. The IWC crossing goals may be further informed and influenced once the hydraulic modeling analysis begins. Drainage alternative analysis at CR 180 will consist of collecting existing site data, including LiDAR, GIS, WebSoil, record drawings, etc. With this information, our team will create existing conditions drainage model to understand drainage patterns and magnitude of design flows, that will be used to inform the alternative analysis as it pertains to local drainage and overflow patterns.

For the hydraulic analysis and design of IWC, the FEMA regulatory model obtained from MnDNR will be used as the base. Additional detail at the existing crossing location and at a potential realignment location will be added. This will be considered the Corrective Effective Model (FEMA MT-2 language). The Corrective Effective Model will then be used to assess alternative creek crossings and understand the hydraulic characteristics and opportunities at the CR 180 crossing. This in turn will help inform potential road profile adjustments, box or bridge sizing refinements, etc. Coordination with MnDNR Floodplain group will be conducted during the alternative analysis to ensure concurrence of the results to provide confidence in the alternative selection process. Coordination with the MnDNR area hydrologist and the Army Corps of Engineers will also be conducted during the alternative analysis to identify the permitting needs triggered by each IWC crossing alternative. The hydrologic and hydraulic results, and permitting needs, of the alternatives will be provided in a drainage summary document.

Box culvert also conveys City water main

Mineral Springs Road

The drainage analysis at Mineral Springs Rd will consist of understanding where the flooding comes from, its magnitude, and where it goes to, as often the outlet can be a limiting factor. The first step will be to identify and document storms ewer design standards and goals. To understand the drainage patterns and design flow magnitudes, existing site data will be collected, including LiDAR, GIS, WebSoil, record drawings, etc, to generate an existing conditions drainage model. The model will aid in understanding drainage patterns and magnitude of design flows. A preliminary proposed catch basin and trunk line sizing will then be completed to identify what proposed infrastructure that will need to be considered in the road and RR bridge alternative analysis. The required infrastructure size and depths may influence road profiles and pier and abutment locations. The proposed model will also identify how far improvement may need to extend to improve the outlet from the system. This data will be reported in a drainage summary report for the site.

DELIVERABLE: Hydraulics memo

Task 7: Environmental

During the alternatives analysis process the team will identify environmental impacts for each alternative. Both locations may have wetlands within the project area. Our team will complete a desktop review of wetland mapping in the area to help determine approximate wetland boundaries. We will also complete a preliminary review for contaminated materials within the project area using the "What's in my neighborhood" database. This information will inform the design team and help mitigate or minimize environmental impacts.

DELIVERABLES: Approximate wetland boundaries and a tabulation of impacts.

Task 8: Public and Private Utility Identification and Coordination

Our Utility Coordination engineer will engage local utility companies to identify their facilities in both project areas and investigate impacts created by the proposed alternatives. The overhead power lines follow the CP Railroad and will impact design options at both locations. Our team has extensive experience with utility coordination and will make this a priority by engaging the power line owners early in the process. A minimum of two utility coordination meetings will be facilitated by our Utility Coordination engineer to gain a clear understanding of the existing facilities and ensure that the design team has a detailed utility base map to work with. In addition to accounting for the City water main located in the box culvert at the CR 180 location, there will likely be impacts to City utilities that will need to be accounted for with each alternative.

DELIVERABLES: Utility owner tabulation, Existing utility base maps.

Task 9: Right of Way

The design team will identify permanent right of way and temporary easements needs for each alternative. The design team will coordinate with SRF's Right of Way Acquisition Group to estimate the cost to acquire right of way and temporary easements. The team will also assist with estimated cost for residential or commercial relocation if necessary.

DELIVERABLES: tabulation of right of way, easement, and relocation impacts including estimated costs.

Task 10: Traffic Analysis

During the alternative analysis, the team will review potential traffic rerouting on a daily and peak hour basis to identify impacts from the alternatives. Resulting modifications to traffic volumes, traffic control, and lane geometry/cross sections will be documented and incorporated into the alternatives analysis decision process. The analysis includes potential rerouting of both CR 180 and Mineral Springs Road from their current alignments as a result of the bridge replacements. Along with the rerouting traffic analysis, SRF will review the impacts of connecting CR 180 to old US Highway 14 post construction of the new US Highway 14.

DELIVERABLE: Traffic memo

Task 11: Preliminary Design/Concept Layouts

Based on the alternatives analysis task, the SRF/TKDA team will work to prepare concept layouts of each viable alternative. We assume three alternatives at each location. The concept layouts will show preliminary roadway and/or railroad alignments, clearances, proposed geometrics, pedestrian facilities, environmental impacts, construction limits, and right of way and easement needs. The layouts will be suitable for presentation to affected stakeholders and the general public to gain input and feedback.

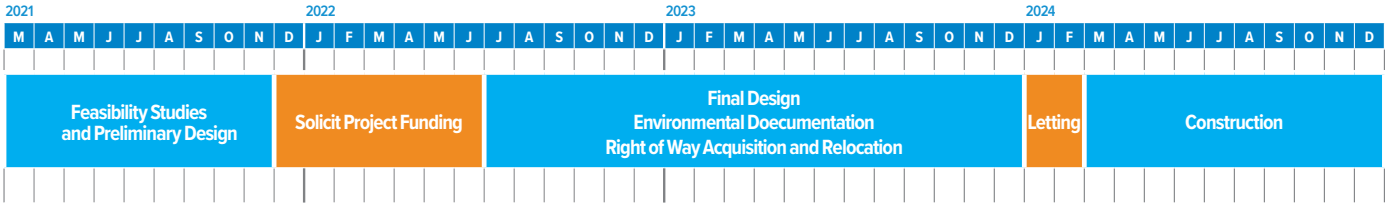
DELIVERABLES: Draft and final concept layouts

Task 12: Funding Sources

It is understood that neither the County nor the City have allocated funds for construction at either of the two sites. The project team, led by Doug Fischer, will investigate potential funding sources that may be applicable for the respective sites as part of the alternatives analysis. Our approach will be leveraged on experience and a thorough understanding of funding requirements and flexibility. We will collaborate internally as a team, as well as with the County, City, and MnDOT District State Aid for Local Transportation, and State Aid Bridge to brainstorm funding opportunities. Potential funding sources are Local Road Improvement, State Bridge Bonds, and federal funds. Based on the outcome of the alternatives and funding analysis, the project team will confer with the County and/or City on additional scope required to complete the funding application. **The schedule below shows our anticipated schedule to meet the County's goal of construction in 2024.**

DELIVERABLE: Memorandum summarizing findings

Project Development Schedule



5. Cost of Services

Our estimated fee for the CR 180 and Mineral Springs Road project is shown below. Our fee is based on discussions with Steele County staff, an initial investigative site visit, and requirements in the RFP. We have made every attempt to include a sufficient number of hours based on our experience with similar projects and yet provide Steele County and the City of Owatonna with a reasonable value. The summary of hours shown below is based on a detailed scope of work spread sheet that is available for your review. Prior to executing a professional services contract we recommend meeting to review our work tasks to refine the work program as appropriate, and discussing our project assumptions and deliverables.

		SRF					TKDA												TEAM			
							PM	Advisor	Roadway		Bridge				Railroad		Survey	Admin				
Task	TASK DESCRIPTION	Principal	Sr. Assoc.	Assoc.	Sr. Prof.	Prof.	Sr Reg Eng	Sr Reg Eng	Reg Eng	ES II	Sr Reg Eng	Sr Reg Eng	Reg Eng	Grad Eng	Sr Reg Eng	ES II	ES I	Tech II	Subtotal Hours	Total Hours	Subtotal Cost	Total Cost
	Rate	$182	$155	$124	$111	$95	$155	$214	$128	$151	$228	$173	$110	$82	$198	$135	$121	$85				
1.1	Administration	4	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	28		$4,448	
1.2	General Coordination	12	8	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	28		$4,540	
1.3	QA/QC	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	8		$1,154	
1	Project Management	18	10	4	0	0	30	0	0	0	0	0	0	0	0	0	0	2		64		$10,142
2.1	Property Owners	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8		$1,456	
2.2	Public and Agency Involvement	14	4	0	0	6	8	0	0	0	0	0	2	2	0	0	0	0	36		$5,362	
2	Public Involvement	22	4	0	0	6	8	0	0	0	0	0	2	2	0	0	0	0		44		$6,818
3.1	Location 1: CR 180	11	8	4	0	0	14	0	4	4	7	20	20	60	2	2	0	0	156		$19,866	
3.2	Location 2: Mineral Springs Road	11	8	4	0	0	6	0	4	4	3	8	8	24	4	0	0	0	84		$11,492	
3	Alternatives Analysis	22	16	8	0	0	20	0	8	8	10	28	28	84	6	2	0	0		240		$31,358
4.1	General Coordination and Meetings	1	0	0	0	0	16	0	0	0	4	0	6	0	4	0	0	0	31		$5,026	
4.2	Memorandum of Understanding (1 Co, 1 City)	1	0	0	0	0	24	0	0	0	2	0	0	0	4	0	0	2	33		$5,320	
4	Railroad Coordination	2	0	0	0	0	40	0	0	0	6	0	6	0	8	0	0	2		64		$10,346
5.1	Location 1: CR 180	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	18	0	22		$2,732	
5.2	Location 2: Mineral Springs Road	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	18	0	22		$2,732	
5	Surveys and Mapping	0	0	4	0	0	2	0	0	2	0	0	0	0	0	0	36	0		44		$5,464
6	Preliminary Hydraulics	9	0	23	0	44	0	0	0	0	0	0	0	0	0	0	0	0		76		$8,670
7	Environmental	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		6		$868
8	Public and Private Utility Identification and Coordination	0	0	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0		14		$1,580
9	Right of Way	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7		$899
10	Traffic Analysis	0	0	8	0	51	0	0	0	0	0	0	0	0	0	0	0	0		59		$5,837
11	Preliminary Design / Concept Layouts	8	12	62	16	0	0	0	0	0	0	0	0	0	0	0	0	0		98		$12,780
12	Funding Sources	2	0	0	0	0	2	8	0	0	0	0	0	0	0	0	0	0		12		$2,386
	TOTAL HOURS	83	47	119	28	101	102	8	8	10	16	28	36	86	14	2	36	4		728		
	COST	$15,106	$7,285	$14,756	$3,108	$9,595	$15,810	$1,712	$1,024	$1,510	$3,648	$4,844	$3,960	$7,052	$2,772	$270	$4,356	$340				$97,148
	EXPENSES	$156					$2,450															$2,606
	TOTAL COST																					**$99,754**

ASSUMPTIONS:

We propose to be reimbursed for our services on an hourly basis for the actual time expended.
Direct project expenses such as printing, supplies, reproduction, etc., will be billed at cost, no mark up.
Invoices submitted on a monthly basis.

Task

1 Project duration is 8 months, March 2021 thru October 2021.
All PMT meetings are virtual (zoom).
2 Open House meetings (two) will be virtual format.
Assume six updates to project web site hosted by Steele County.
3 Assume three viable alternatives at each location to be studied further; one alignment for bridge analysis.
Assume feasibility reports (two) will be brief, concise, technical documents with alternatives matrix, graphics, costs, and supporting data.
4 Assume two meetings with CP Rail
Assume two MOUs (one County, one City).
5 One day of topographic field survey at each location; includes railroad flagging (one day of flagging cost included in expenses).
6 Regulatory FEMA hydraulic model available; No Rise condition is the goal.
Additional detail in hydrology and hydraulic modeling created with LiDAR, record drawings, and applicable survey; HydroCAD modeling for local hydrology.
7 Includes data search for wetlands and contamination locations.
9 RW and parcels lines in GIS format provided by Steele County.
11 Assume three concept layouts at each location.

6. Cost Sharing Recommendations

The hours and costs required to study alternatives at each location are fairly evenly split. We recommend splitting all Tasks and expenses 50/50 with the following exceptions:

Task 3 Alternatives Analysis: We anticipate spending more time and effort with alternatives investigation at the CR 180 location due to added complexity of the box culvert. Our estimated cost split is shown in our cost table.

Task 6 Preliminary Hydraulics: We anticipate spending more time and effort at the CR 180 location due to the complexity of the stream modeling and box culvert. The costs are not split in our cost table but would generally be split 70/30 with the larger share for the CR 180 location.

7. Summary

We appreciate your consideration of our proposal. The County Road 180 and Mineral Springs Road locations are complex and include multiple challenges that are interrelated to each other. The selected consultant team will need to do their homework during the alternative analysis task to bring forward realistic options for consideration. The team will need firsthand experience working with railroads and designing railroad bridges and knowing what is acceptable and what isn't. The experience and collaborative spirit of the SRF/TKDA team will provide Steele County and the City of Owatonna with the best value for this project. Our team is excited for this project!

We hope the skill summary below will give you confidence in selecting us as your partner:

Project Knowledge: We have studied the sites and will use the combined railroad and roadway skills from SRF and TKDA to collaborate alternatives.

Railroad Experience: Our team understands railroads and their requirements. Our current and long-time public project experience with Canadian Pacific Railroad and other Class I railroads will be a key component in evaluating railroad alternatives.

Local Transportation Plan Knowledge: Our team knows the local roadway system and it's plans for future growth, providing us with realistic re-route options.

Funding Experience: Our team includes three former County Engineer who are all well versed in identifying future funding opportunities for project like this.

Project Leadership: Our Project Manager, Nate Will, will draw from his 28 years of experience in managing similar complex projects. Nate is committed to working collaboratively with County and City staff.

SRF

whks

engineers + planners + land surveyors

Feasibility Study of CR 180 Bridges and Mineral Springs Road Railroad Bridge

Request for Proposals

» SUBMITTED TO:

Steele County Highway Department
Attn: Paul Sponholz, P.E.
3000 Hoffman Drive NW, P.O. Box 890
Owatonna, MN 55060-0890
Email: paul.sponholz@co.steele.mn.us

January 29, 2021

Proposing Firm: WHKS & Co., Brandon Theobald, 2905 South Broadway, Rochester, MN 55904, Phone: 507.288.3923, Email: btheobald@whks.com

2905 South Broadway
Rochester, MN 55904-5515
Phone: 507.288.3923
Email: rochester@whks.com
Website: www.whks.com

whks
engineers + planners + land surveyors

PREMIER AWARD FOR CLIENT SATISFACTION PSMJ Resources, Inc. 2020

VIA EMAIL

January 29, 2021

Mr. Paul Sponholz, P.E.
Steele County Highway Department
3000 Hoffman Drive NW, P.O. Box 890
Owatonna, MN 55060-0890

RE: Response for Request for Proposal for Feasibility Study of CR 180 Bridges and Mineral Springs Road Railroad Bridge

Dear Mr. Sponholz and Members of the Selection Committee:

On our way home from visiting the project sites, we did what we always do. We brainstormed solutions and started designing the improvements out loud. We've been there, done that.

Spoiler Alert: It's going to be great! We specialize in complex structural and roadway design.

At WHKS, we believe the key to a successful project is preventing issues before they arise. We maintain exceptional working relationships with the Minnesota Department of Transportation (MnDOT) and the Canadian Pacific Railroad.

WHKS provides the best value to Steele County and the City of Owatonna for the following reasons:

- **Railroad Coordination Expertise.** Our excellent working relationship with the CP Railroad will help keep the project on schedule. This expertise allows us to provide effective and efficient solutions.
- **Consultant with a Wide Range of Technical Expertise.** Our team members have experience working on many hydraulic projects, bridge replacement, street, roadway, and utility improvements, including those with traffic engineering, construction phase services, and railroad coordination elements. WHKS assisted Mason City, IA to receive $5.5 M in funding to construct two Union Pacific Railroad (UPRR) overpasses.
- **Positive Communication with Stakeholders.** We understand the importance of strong communication and interaction with all agencies and stakeholders.
- **Responsiveness.** When you call, it's our goal to call you back within the hour.
- **Innovative Project Approaches to Alternative Alignments.** We have no preconceived notions and will approach this study with a fresh perspective. We will help you implement the right solutions for the right reasons.
- **Record of Cost-Effective Solutions.** We pride ourselves in getting projects right the first time and without design and budget "surprises". We have proven project development and implementation experience with Federal and State-funded projects.

How does WHKS' experience benefit you*?** Our team's experience will avoid time delays during critical points in the project development phase, ***saving you time and money.

If selected for this work, the project will be managed by Brandon Theobald, a seasoned project manager with extensive experience serving Minnesota cities and counties. The WHKS Team has the expertise and qualifications to provide cost-effective and sustainable solutions at both locations.

Thank you for the opportunity to present our project approach and qualifications. If you have any questions, please contact Brandon at 507.288.3923 or by email at btheobald@whks.com.

Sincerely,

WHKS *& CO.*

Timothy A. Hruska, P.E., L.S.
Vice President, Rochester Office Manager

General Requirements / Project Understanding and Approach

Table of Contents

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Project Understanding and Approach	1-8	Cost Sharing Recommendations	14
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Introduction to WHKS Team

This is the type of project that make us eager to come to work every day.

In the past 15 years, WHKS has completed 3 feasibility studies for railroad bridges in Mason City and Boone, IA. These projects proceeded to the design phases and included Environmental Assessments, roadway and bridge engineering, survey, right-of-way services, bridge aesthetics, public involvement, and extensive coordination with the Iowa DOT, the Cities, and the Railroad. Additionally, WHKS has completed survey and bridge design projects for the CP Railroad at various locations in Iowa and Illinois.

WHKS has completed projects for the City of Owatonna and managed major transportation improvements for Southeast Minnesota municipalities. We're ready to get started.

Brandon Theobald has managed planning and design projects the have involved the CP Railroad and Southern Minnesota Municipal Agency Power transmission lines.

General Requirements

WHKS Team Contact Information

Brandon Theobald, P.E., Project Manager

WHKS & Co., 2905 South Broadway, Rochester, MN 55904

507-288-3923, btheobald@whks.com

Proposal Statement and Authorized Signature

This proposal is valid for 60 days from January 29, 2021. This proposal is signed by a person authorized to bind WHKS to the terms of this proposal.

Project Understanding and Approach

CR 180 is a critical transportation corridor in Steele County, serving the east side of the County. Steele County, in partnership with the City, is commissioning a feasibility study to evaluate alternatives for replacing a structurally-deficient box culvert and Canadian Pacific Railroad bridges on CR 180 (Location 1) and Mineral Springs Road (Location 2).

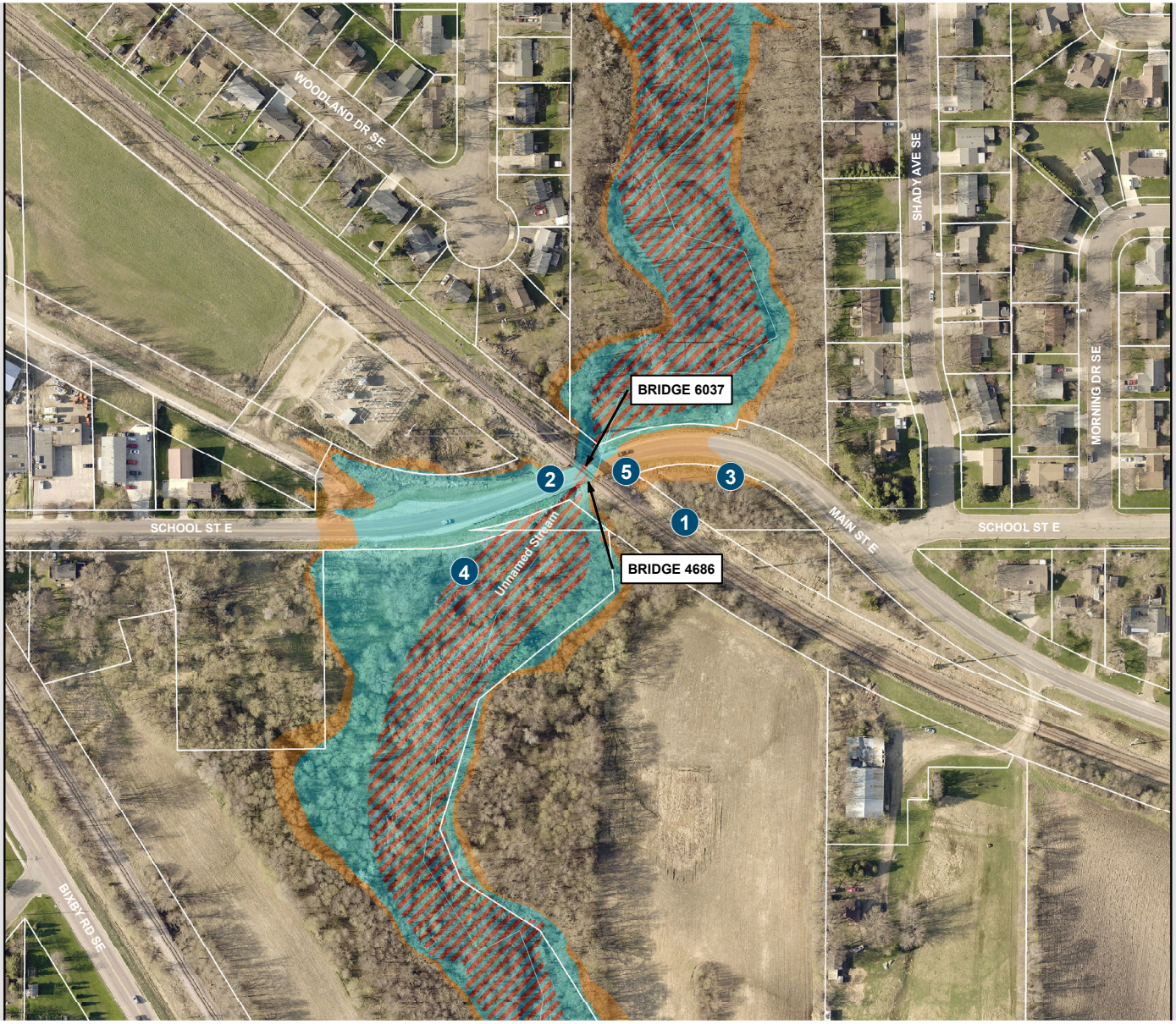
The study will investigate options to get two roadways over, under, or around the existing railroad, requiring coordination with the CP Railroad.

Key Issues and Solutions

A number of issues will need to be addressed. We have visited the project site and identified the key issues for each location on the following pages. Our approach to providing solutions are provided in this section.

Project Understanding and Approach

Key Issues and Solutions - Location 1 - County Road 180

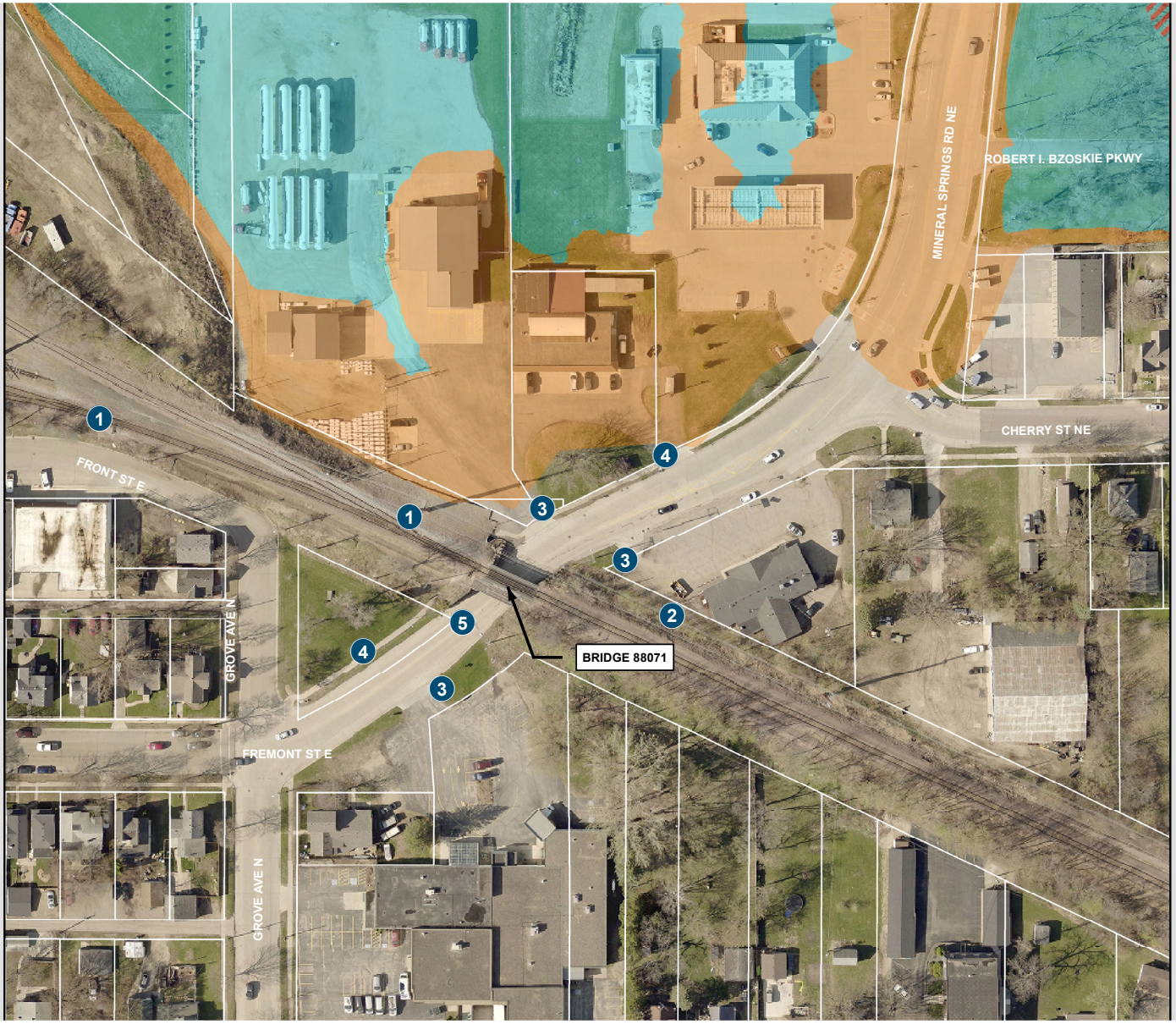


County Road 180 - Key Issues

1. WHKS has previous experience with permitting and coordinating construction activities with Southern Minnesota Municipal Agency Power transmission lines.
2. Raising County Road 180 out of the flood-plain will provide a higher level of service and a greater number of design considerations.
3. Changes to the Highway 14 corridor will spur the need to evaluate the regional roadway network and its effects on the project.
4. Lack of development in the immediate area may allow for additional geometric changes.
5. Opportunity to implement the planned trail connection between Jaycee Park and the Izaak Walton Creek Trail.

Project Understanding and Approach

Key Issues and Solutions - Location 2 - Mineral Springs Road



Mineral Springs Road - Key Issues

1. Canadian Pacific coordination during planning and construction will be paramount.
2. WHKS has previous project experience with permitting and coordinating construction activites with Southern Minnesota Municipal Power Agency transmission lines.
3. Existing driveways and lack of right-of-way will make geometric improvements more complex.
4. Opportunity to provide an improved trail crossing that connects the residential area and the Buxton Park/Dartts Park area.
5. Roadway construction provides an opportunity to solve existing drainage issues.

Gud Kumminikashun iz Importint

Got Your Attention, Didn't It?!

Meeting one-on-one in person, virtually, or in a public meeting setting are all possibilities for informing stakeholders.

A well-communicated and coordinated project is a WELL-RECEIVED infrastructure improvement!

Tim Hruska has led public meetings for MnDOT, municipalities, and counties for numerous roadway, ADA-compliance, and utility projects. Listening to the client and public is the cornerstone of our client experience.

Brandon Theobald coordinates with client staff, stakeholders, residents, and regulatory personnel to communicate project objectives, listen to concerns, and mitigate challenges before they become issues.

Project Approach

Project Management, Coordination and Meetings

A kick-off meeting with Steele County and the City of Owatonna will review the objectives at each location, establish project roles and lines of communication, and gather necessary existing information. Project milestones, submittals, and design review meetings will be scheduled.

In addition to coordination with the County and City, WHKS will coordinate with property owners, stakeholders from private utilities, railroad, and consultant teams for nearby projects.

Routine project updates will be provided to the City throughout the project via personal contact, e-mail, written reports, and telephone conversations. Progress meetings will be held on an as-needed basis. All conversations/meetings with outside agencies, MnDOT, CP Railroad, County and City staffs, and property owners will be documented to keep the Team informed of project activities and developments.

QA/QC services will be performed throughout the studies.

Site Visit/Review Existing Conditions

WHKS will conduct a field review to familiarize the design team with the project corridor. A video of the route and photographs of site-specific features will be taken for reference. County, City, and CP Railroad staff will be invited to attend the site visit.

Public Involvement

Public informational meetings have been—and continue to be—a mainstay of the public input process. These meetings are intended to be open forums where the project team presents information and attendees provide feedback. The input received during the public process phase will provide valuable input that will drive the preliminary engineering tasks.

WHKS will develop materials for two open house public meetings and meet one-on-one with property owners with right-of-way and access impacts.

Regular communication throughout the project will promote greater understanding and expectations. Project updates, maps, and other information will be provided on the project-specific page on the Steele County website for residents and interested parties.

WHKS can provide project updates to the Steele Board of Supervisors and Owatonna City Council, if requested.

You Can't Beat the Train, But Knowing It's Coming is Key

Recent Experience with CP Railroad

La Crescent, MN
Whistle Free (Quiet) Zone

WHKS coordinated with the City, MnDOT, Canadian Pacific Railroad, and Federal Railroad Administration (FRA) for establishment of Zone. WHKS prepared the application for implementation of Zone.

Rochester, MN
2nd Street SE Phase D of the 1st Avenue SE Relief Line Project
and
North Broadway and 3rd Street NW

WHKS coordinated the geotechnical investigation, Settlement Monitoring Plan, and prepared crossing applications to the CP. WHKS prepared plans, specifications and supplemental specifications for work required for the crossings.

For the North Broadway/3rd Street NW project, WHKS performed survey monitoring for settlement during crossing work.

Railroad Coordination

Early and frequent coordination with the CP Railroad will keep them informed of the project's schedule and impacts. The proposed structure design will be reviewed to minimize railroad impacts and construction costs. Our team members are familiar with CP Railroad's engineering requirements and guidelines.

WHKS has worked with CP Railroad on numerous projects in southeast Minnesota and understand their needs, design criteria, and protocol. Concepts will be submitted to the CP representative for review and meeting minutes will document project discussions.

Survey

Survey crews will proceed immediately with topographic survey tasks. WHKS will:

- Develop project control using Steele County Coordinates and City of Owatonna vertical datum.
- Provide necessary topographic surveying. Traffic control may be required to obtain data within the traveled roadway.
- Create base mapping utilizing field survey, County GIS, and record plans.
- Contact Gopher State One Call and locate utilities within the project corridor.
- Surveyed utility locations will be supplemented with existing utility maps from the County, City, and utility companies.
- Property pins and other information will be gathered during the field survey. Record research will be conducted to determine the existing right-of-way lines.

WHKS Positions MN Communities to Grow

A Profile of Kasson, MN

Kasson is a growing and progressive city in SE Minnesota. WHKS is assisting the City to plan for and design infrastructure improvements at multiple locations.

TH 57 Improvements

WHKS is designing improvements to support growing development, improve mobility and safety, and upgrade existing infrastructure. (Design underway)

WHKS Services: Feasibility Study, funding application assistance, traffic analysis, route analysis, geometric improvements, trail and sidewalk connections, railroad crossing considerations, street and utility upgrades, and traffic signalization.

How has Kasson benefited from the specialized expertise of WHKS?

We listened to the community desires and the City's goals, identified the City's infrastructure needs, and helped them find project funding. The results followed.

Kasson Funding in the Last 4 Years:

» TH 57 Reconstruction - $3.2 M
» Safe Routes to School Demo Project - $5,000
» Safe Routes to School – Infrastructure Improvements - $375,000
» 16th Street NE Improvements - $ 1 M
» 16th Street NW Extension - $900,000

Total = $5,480,000...and Counting!

Alternatives Analysis

WHKS will evaluate proposed alternatives for each project location, balancing impacts and costs, including:

- Short and long-term costs including design, construction, and life cycle
- Relocation and right-of-way acquisition
- Utility impacts
- Environmental impacts (stream, wetlands, floodplain)
- Constructibility (including shoofly)
- Public outreach
- Future growth

The objective of the alternatives analysis is to provide layouts that meet the needs of the County and City while enhancing safety and minimizing costs and effects on adjacent landowners.

The goal of this alternative analysis would be to produce an approved layout.

WHKS will utilize a Context Sensitive Solutions (CSS) approach. This seeks effective, multimodal transportation solutions by working with stakeholders to develop, build, and maintain cost-effective transportation facilities, fitting into and reflecting the project's surroundings and context.

Given the effects on access and other impacts that the construction will have on adjacent properties and stakeholders, WHKS believes that a CSS process will provide creative and innovative solutions to complex design issues and provide the best approach to constructively engage stakeholders.

We believe engaging in early, frequent, and meaningful communication with stakeholders results in projects that best meet the needs of all parties with less public opposition. CSS may also help preserve and enhance the scenic, economic, historic, and natural surroundings of the project area.

Many of these principles allow the project to introduce the appropriate horizontal and vertical curvature as well as aesthetically pleasing amenities within the project corridor.

Bridges, Roadways and Studies Related to New Alignments

A Few of Our Favorite Things!

Preliminary Bridge Design - Silver Lake Pedestrian Bridge, Rochester

Preliminary Utilities, Storm Sewer Design, and Railroad Coordination East Main Storm Sewer, Kasson

Preliminary Roadway, Hydraulics, Environmental, ROW and Traffic US 65, Albert Lea

Bridge Preliminary Design

After the roadway alignment and grades are set, preliminary bridge layouts will be developed and submitted to the County, City, CP Railroad, and MnDOT for review. The layouts will identify the bridge length, width, horizontal and vertical clearances, type of superstructure, number of spans, wall types and geometry, pedestrian facilities, and type of substructure. The construction methods for bridge layouts and potential impacts to the railroad will be coordinated with CP Railroad and the layouts will be provided for their concurrence and approval.

Alternatives will be in conformance with the current MnDOT State Aid Standards, Design Guides and Specifications, AREMA Manual for Railway Engineering, and the CP Railroad Guidelines.

Roadway/Utilities Preliminary Design

Preliminary design for the alternatives will continue with the refinement of roadway, bicycle and pedestrian traffic; right-of-way impacts; utility impacts; and public involvement.

Context Sensitive Solutions identified in the Alternatives Analysis will be continued in the preliminary design of the roadway. A preliminary construction cost estimate will be developed. The concepts will be based on estimated costs, right-of-way impacts, traffic operations and safety, public involvement and comments, desirable and minimum design criteria, and maintenance of traffic issues.

Preliminary Hydraulics

WHKS is well-versed in urban and rural storm water conveyance and design standards. An effective and efficient conveyance system will make sure that any existing drainage issues are not exacerbated, and no new issues are created. Stormwater will be considered during preliminary alignment configurations, providing for a robust roadway design. Floodplain modeling will be conducted in the area of the proposed structures.

Environmental

WHKS will identify any potential environmental impacts for each location and provide recommendations for minimizing or mitigating impacts.

Utility Coordination

WHKS will utilize the MnDOT Utility Coordination Process and will contact utility companies early in the project. All existing utilities will be located and included in all surveys and/or resultant concepts. Copies of topographic survey base sheets will be provided to all utility companies for review.

We Showed Them The

$$$$$$$$$$$

WHKS assisted the City of Mason City, IA apply for and receive funding for the construction of two UPRR Overpasses:

12th Street UPRR Overpass

✓ **60%** State and Federal Funding
Total Construction Cost: $3.8 Million

19th Street UPRR Overpass

✓ **40%** State and Federal Funding
Total Construction Cost: $8.2 Million

WHKS assisted the City by:

- Completing Feasibility Studies
- Preparing funding applications
- Meeting with Federal representatives
- Coordinating UPRR cost-sharing

WHKS Is Experienced With Other Funding Sources, Including:

- MnDOT State Aid
- MN LRIP
- Mn DEED
- State Bonding Bill
- MnDOT LPP

Right-of-Way

Right-of-Way acquisition needs will be identified. WHKS will determine property lines, existing ROW, and existing ownership information.

Traffic Analysis

WHKS will obtain traffic data and conduct a traffic analysis of the alternatives for each location. This task may require the determination of traffic impacts of the CR 180 connection to the portion of US 14 that will be transferred to Steele County in 2022. Potential rerouting of CR 180 to other corridors may require analysis of traffic impacts. Turning movements and intersection counts may be required at Location 2 for Fremont Street/Mineral Road/Grove Avenue. WHKS has the in-house ability to conduct the analysis and modeling tasks for existing and future traffic operations.

Preliminary Design/Concept Layouts

For both locations, WHKS will develop preliminary layouts for alternatives.

Funding Sources

WHKS is prepared to vigorously pursue additional sources of funding. We routinely assist our clients with project funding through MnDOT, State Bonding Bill, and other state and federal programs.

WHKS provided services to the Cities of Mason City and Boone, IA on three grade separation projects that are similar in scope to CR 180 projects. WHKS completed the feasibility studies, prepared funding applications, and met and corresponded with legislators to assist in obtaining and securing funds for the projects.

Additional Services

WHKS offers the following expertise that we believe would be beneficial for these projects:

- **3D Modeling and Design Visualization.** Particularly during the public outreach phase, the power of imagery can convey a lot of meaning to interested parties and regulators.
- **ADA Compliance Review.** Did you know WHKS is the On-Call Consultant to MnDOT to augment the State's ADA Unit? Tim Hruska leads the efforts across the state and will provide his expertise for these projects.

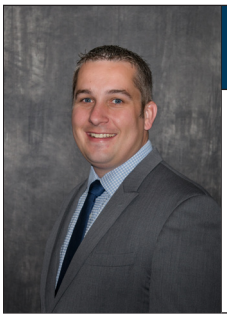
Availability

WHKS can begin work upon Notice to Proceed.

Project Team

The following section provides a brief overview of the qualifications and expected work tasks for the WHKS Team.

No changes in the WHKS key personnel will be made without written approval of the Steele County Engineer.



Brandon W. Theobald, P.E. - Project Manager

Work Tasks: Alternative Analysis, Funding Investigations, Public Involvement, Report Preparation

Education:
B.S. Degree, Civil Engineering, 2005

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 16 Years

Qualifications: Brandon's design and project management experience includes urban and rural street design and maintenance, State Aid projects, utility design, drainage, erosion control, and construction engineering. He is experienced with grant and loan funding assistance and public outreach activities.

Timothy A. Hruska, P.E., L.S. - Project Principal, Roadway QA/QC, Surveyor

Work Tasks: Right-of-Way Determination, Public Involvement, Report QA/QC

Education:
B.S. Degree, Civil Engineering, 2001

Registration:
Professional Engineer/Surveyor: Minnesota

Number of Years of Experience: 20 Years

Qualifications: Tim has an extensive project record with managing MnDOT State Aid projects and is the Project Manager for WHKS' ongoing projects with the Minnesota Department of Transportation (MnDOT), including roadway, survey, and ADA staff augmentation projects.

Scott G. Huneke, P.E. - Assistant Project Manager

Work Tasks: Alternative Analysis and Layouts, Environmental Impact Reviews

Education:
B.S. Degree, Civil Engineering, 2013

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 8 Years

Qualifications: Scott's experience includes street and roadway design, State Aid projects, utility design, drainage, and construction observation. He is experienced with desktop environmental review, route analysis, and report preparation tasks for feasibility and planning-level studies.

Justin M. Zimmerman, P.E., S.E. - Structural Engineer

Work Tasks: Alternative Analysis and Layouts

Education:
B.S. Degree, Civil Engineering, 2004
M.S. Degree, Civil (Structural) Eng., 2006

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 15 Years

Qualifications: Justin has designed and managed major highway, County and City bridge improvements, including several structures over railroads. He has conducted feasibility and planning-level studies and led the design of new bridges and bridge repair/rehabilitation projects.

Fouad K. Daoud, P.E., S.E. - QA/QC Engineer and Railroad/Funding Coordination

Work Tasks: Report QA/QC, Funding Investigations, Railroad Coordination

Education:
B.S. Degree, Civil Engineering, 1985
M.S. Degree, Civil (Structural) Eng., 1987

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 34 Years

Qualifications: Fouad has been the Project Principal/Project Manager for over 400 bridge design and rehabilitation projects, including grade separation structures and structures over railroads. He has an extensive project record of railroad coordination and funding application assistance for state and local infrastructure improvements.

S. Scott Sweet, P.E. - Roadway Project Engineer

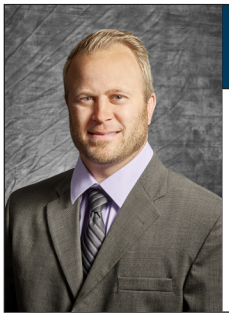
Work Tasks: Alternative Analysis and Layouts

Education:
B.S. Degree, Civil Engineering, 1988

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 33 Years

Qualifications: Scott led the alternatives analysis tasks and feasibility study preparation for UPRR overpasses in Mason City and Boone, IA. He has been the project manager/principal for over 300 projects including MnDOT assignments and MnDOT State Aid projects.



Eric J. Tott, P.E. - Traffic Engineer

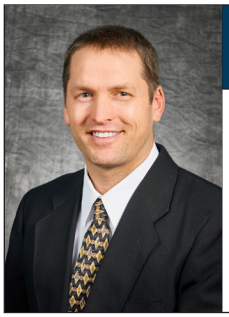
Work Tasks: Traffic Analysis and Modeling

Education:
B.S. Degree, Civil Engineering, 2004

Registration:
Professional Engineer: Minnesota

Number of Years of Experience: 17

Qualifications: Eric has completed numerous ICE evaluations, traffic impact studies, roundabout designs, and traffic signal improvements. He prepared traffic studies and conducted the analysis for 2 UPRR grade separation and overpass projects and has designed projects with geometric constraints in urban and rural areas.



Brian J. Birkland, P.E. - Drainage and Hydraulics Engineer

Work Tasks: Drainage, Hydraulic and Floodplain Analysis

Education:
B.S. Degree, Civil Engineering, 2000

Registration:
Professional Engineer: Iowa

Number of Years of Experience: 21 Years

Qualifications: Brian conducted complex drainage and hydraulic analyses for 2 UPRR overpasses. Additionally, he led the field survey and preliminary roadway design tasks for the Snedden Drive UPRR grade separation in Boone, IA.

James M. Loehr - Railroad Coordination

Work Task: Railroad Coordination

Education:
AA Degree in Engineering Technology from Rochester Community College

Number of Years of Experience: 46 Years

Qualifications: Jim has coordinated extensively with MnDOT, Federal Railroad Administration, and various railroads as part of municipal infrastructure improvements in southeast Minnesota. He is familiar with permitting and application processes required for transportation projects.

Project Experience

Following are three project examples of similar feasibility studies.

WHKS Team Members:
» Fouad Daoud, P.E., S.E.
» Brian Birkland, P.E.

Services:
» Feasibility study
» Alternative analysis/layouts
» Railroad coordination
» Survey, mapping, right-of-way
» Bridge and roadway design
» Hydraulic analysis
» Environmental assessment
» Utility coordination
» Funding application assistance

12th Street NW UPRR Overpass

12th Street NW UPRR Overpass, Mason City, IA

WHKS assisted the City of Mason City to resolve the traffic delays on 12th Street NW at the Union Pacific Railroad (UPRR) tracks.

Previously, WHKS studied a railroad underpass concept, which consisted of two bridges in close proximity of each other. The plans were prepared and approved by the Union Pacific Railroad and the City of Mason City, but neither bridge was constructed.

WHKS prepared a feasibility study which determined that an overpass would reduce traffic congestion and improve safety and air quality. 12th Street NW is a major east-west route on the north side of Mason City, and is one of only three east-west streets that have a continuous alignment across the City. Expanding commercial development on the west side of the City increased the importance of uninterrupted traffic movement on 12th Street.

The project extended 6½ blocks with the major focus being a 661-foot long overpass bridge structure. The bridge and associated roadway width provides for four traffic lanes, but operates as a three-lane roadway.

WHKS Team Members:
» Fouad Daoud, P.E., S.E.
» Scott Sweet, P.E.
» Justin Zimmerman, P.E., S.E.
» Brian Birkland, P.E.
» Tim Hruska, P.E., L.S.

Services:
» Feasibility study
» Alternative analysis/layouts
» Railroad coordination
» Survey, mapping, right-of-way
» Bridge and roadway design
» Hydraulic and traffic analysis
» Environmental assessment
» Utility coordination
» Funding application assistance

19th Street SW UPRR Overpass, Mason City, IA

WHKS provided planning, design, and construction engineering services for a grade separation structure on 19th Street SW. This major east-west route was recognized as an important traffic artery due to continuing development along the corridor and increasing volumes at the UPRR crossing.

WHKS prepared a feasibility study outlining construction options, which the City used to secure funding from the Iowa Clean Air Attainment Program.

WHKS designed a pre-stressed concrete beam bridge overpass structure with mechanically stabilized earth (MSE) retaining walls at each abutment. The roadway consists of four 12-foot lanes with attached curb and gutter for through traffic, plus a 16-foot variable width median to provide left turn lanes at the Pierce Avenue intersection.

19th Street SW UPRR Overpass

WHKS Team Members:
» Fouad Daoud, P.E., S.E.
» Scott Sweet, P.E.
» Brian Birkland, P.E.

Services:
» Alternative analysis/layouts
» Railroad coordination
» Survey, mapping, right-of-way
» Preliminary bridge/road design
» Hydraulic and traffic analysis
» Environmental assessment
» Utility coordination
» Funding application assistance

Snedden Drive Grade Separation Preliminary Engineering - Boone, IA

WHKS provided preliminary design services for the extension of Corporal Roger Snedden Drive and the design of a grade separation over the UPRR.

Corporal Roger Snedden Drive is a north-south arterial through Boone, with a UPRR switchyard and dual mainline tracks located north of the existing route. The proposed 2,500 foot long extension of Snedden Drive will include a 575'-0" x 40'-0" three-span continuous-welded girder bridge grade separation structure to cross the switchyard. Impacts to the switchyard will be minimized using a three-span structure and mitigated through coordination with the UPRR. Retained earth high abutments will reduce the overall bridge length.

The proposed northerly extension will be a two-lane roadway with PCC pavement with sidewalks, storm sewer and intakes, roadway lighting, and underground utility improvements.

The project included a streamlined environmental assessment including wetland determination and delineation, cultural/historical, and archaeological evaluations (performed by subconsultants).

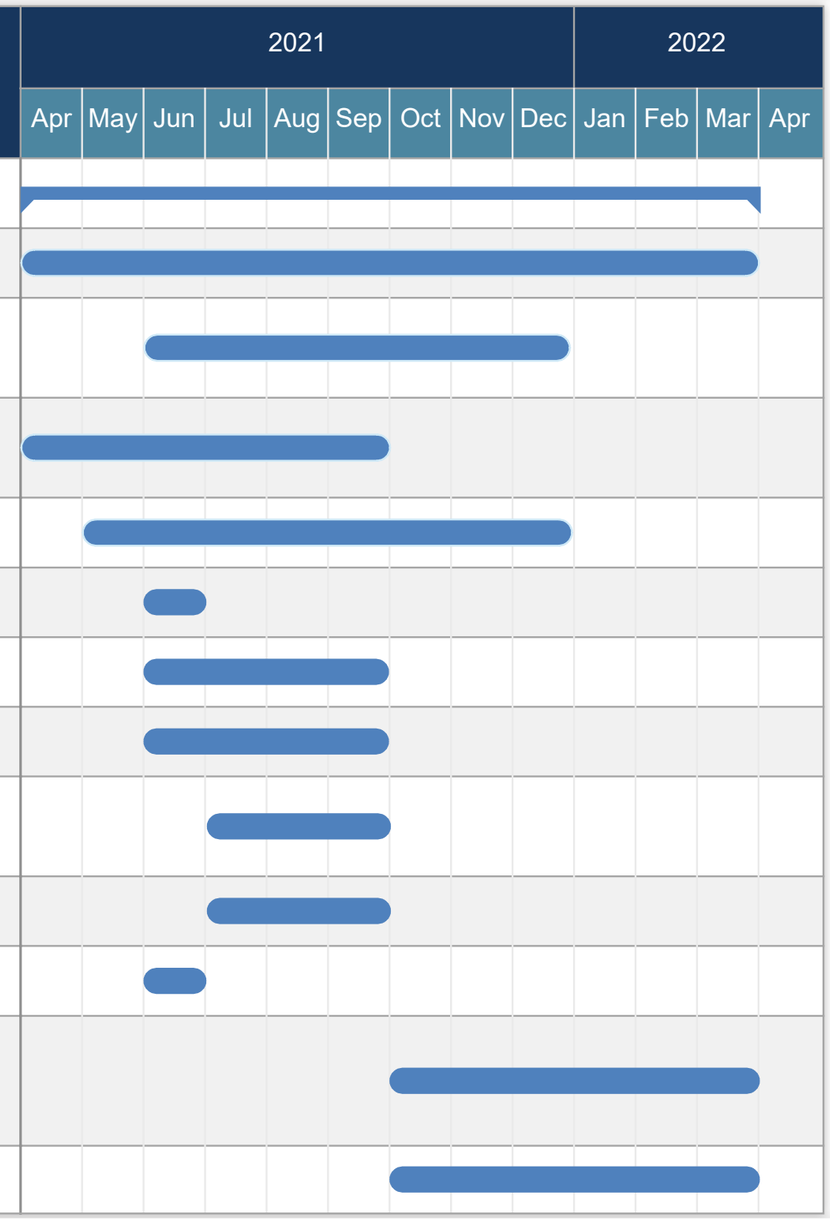
WHKS led the public involvement efforts, including stakeholder coordination and public meetings.

Team Experience with Additional Work Tasks Related to Feasibility Studies

Projects / Locations	Alternative Analysis	Preliminary Layouts	MnDOT Coordination	Railroad Coordination	Survey/ROW	Hydraulics	Environmental Review	Utility Coordination	Traffic Analysis	Public Outreach	Funding Application
Albert Lea, MN - US 65 Improvements	X	X	X		X	X	X	X	X	X	
Byron, MN - East Avenue Reconstruction and Roundabout	X	X	X		X	X	X	X	X	X	
Byron, MN - 10th Ave & 7th St NE Roundabout	X	X	X		X	X	X	X	X	X	
Eyota, MN - Utility Extension			X	X	X						
Eyota, MN - West Side Trail Connection			X	X	X						X
Kasson, MN - 16th Street NE Improvements			X		X	X	X	X		X	X
Kasson, MN - East Main Storm Sewer			X	X	X			X			
Kasson, MN - TH 57 Improvements	X	X	X	X	X	X	X	X	X	X	X
Rochester, MN - North Broadway Sanitary Sewer Phases 3/4	X	X	X	X	X			X	X		
Winona Co. MN - CSAH 15 Improvements			X		X	X	X	X		X	
Winona, MN - Riverview Drive Reconstruction		X	X		X	X		X	X		X

Detailed Work Plan and Schedule

Task	Deliverable
Steele County/Owatonna Railroad Bridge Feasibility Studies	
Project Management	Meeting Documentation
Public Involvement	Public Involvement Plan, Open House and Meeting Documents
Alternative Analysis	Layouts of Alternatives, Memo of Decision Matrix on Preferred Alternative
Railroad Coordination	Memorandum of Understanding
Surveys and Mapping	Topographic Survey
Preliminary Hydraulics	Hydraulics Memo
Environmental Impact Review	Environmental Impact Memo
Public and Private Utility Identification and Coordination	Utility Design Meeting Memo
Right-of-Way	[Address in Feasibility Study]
Traffic Analysis	Traffic Report
Preliminary Design/Layout	Feasibility Study - Concept Layouts, Hydraulics, Bridge Type, Decision Matrices, Cost Estimates, Schedules, Funding, Preferred Alternatives
Identification of Funding Opportunities	[Address in Feasibility Study]



Detailed Work Plan and Schedule

Cost of Services — **PROJECT TITLE:** Feasibility Study of CR 180 Bridges and Mineral Springs Rd. Rail Bridge, Steele County, MN

DESCRIPTION OF PROFESSIONAL SERVICES OR TASKS	WHKS											
	Project Principal	Project Manager	Asst. Project Manager	Roadway / Trail Design Engineer	Design Technician	Utility Design Engineer	Enviro Scientist	Structural Project Engineer	Structural Technician	Survey Supervisor	Survey Tech.	Subtotals
	Staff Assignment by Hours											
Task 1 Project Management												
1.1 Administration	8.0	30.0										38.0
1.2 General Coordination	2.0	8.0										10.0
1.3 Quality Assurance and Quality Control Functions (QA/QC)	16.0	10.0	10.0									36.0
SUBTOTAL HOURS	26.0	48.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	84.0
SUBTOTAL FEE	$ 4,420.00	$ 6,720.00	$ 1,150.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,290.00
Task 2 Public Involvement												
2.1 Property Owners		8.0	16.0									24.0
2.2 Public and Agency Involvement	4.0	8.0	16.0									28.0
SUBTOTAL HOURS	4.0	16.0	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.0
SUBTOTAL FEE	$ 680.00	$ 2,240.00	$ 3,680.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,600.00
Task 3 Alternative Analysis												
3.1 Evaluate Feasibility of Proposed Alternatives	2.0	4.0	12.0	20.0	40.0	8.0		16.0				102.0
3.2 Refine Proposed Alternatives	2.0	4.0	12.0	20.0	20.0	8.0						66.0
3.3 Identify Impacts Associated with Alternatives	2.0	4.0	12.0	16.0	8.0		8.0					50.0
SUBTOTAL HOURS	6.0	12.0	36.0	56.0	68.0	16.0	8.0	16.0	0.0	0.0	0.0	218.0
SUBTOTAL FEE	$ 1,020.00	$ 1,680.00	$ 4,140.00	$ 6,440.00	$ 6,460.00	$ 1,840.00	$ 720.00	$ 2,080.00	$ -	$ -	$ -	$ 24,380.00
Task 4 Railroad Coordination												
4.1 Coordination - Evaluation of Alternatives	2.0	8.0	24.0					8.0	8.0			50.0
4.2 Coordination - Field Work	2.0	4.0	4.0							8.0	16.0	34.0
4.3 Memorandum of Understanding (MOU)	2.0	8.0	24.0					8.0	8.0			50.0
SUBTOTAL HOURS	6.0	20.0	52.0	0.0	0.0	0.0	0.0	16.0	16.0	8.0	16.0	134.0
SUBTOTAL FEE	$ 1,020.00	$ 2,800.00	$ 5,980.00	$ -	$ -	$ -	$ -	$ 2,080.00	$ 1,520.00	$ 960.00	$ 1,360.00	$ 15,720.00
Task 5 Survey and Mapping												
5.1 Topo Survey		2.0								16.0	120.0	138.0
5.2 GIS Coordination		2.0					8.0					10.0
SUBTOTAL HOURS	0.0	4.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	16.0	120.0	148.0
SUBTOTAL FEE	$ -	$ 560.00	$ -	$ -	$ -	$ -	$ 720.00	$ -	$ -	$ 1,920.00	$ 10,200.00	$ 13,400.00
Task 6 Preliminary Hydraulics												
6.1 Stream Hydraulics	1.0	2.0	8.0			60.0						71.0
6.2 Storm Sewer Hydraulics	1.0	2.0	8.0			60.0						71.0
SUBTOTAL HOURS	2.0	4.0	16.0	0.0	0.0	120.0	0.0	0.0	0.0	0.0	0.0	142.0
SUBTOTAL FEE	$ 340.00	$ 560.00	$ 1,840.00	$ -	$ -	$ 13,800.00	$ -	$ -	$ -	$ -	$ -	$ 16,540.00
Task 7 Environmental												
7.1 Identify Environmental Impacts		2.0	8.0				8.0					18.0
SUBTOTAL HOURS	0.0	2.0	8.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0	18.0
SUBTOTAL FEE	$ -	$ 280.00	$ 920.00	$ -	$ -	$ -	$ 720.00	$ -	$ -	$ -	$ -	$ 1,920.00
Task 8 Public and Private Utility Identification and Coordination												
8.1 One-Call and Utility Mapping		2.0								4.0	16.0	22.0
8.2 Utility Design Meeting		2.0	6.0							8.0		16.0
8.3 Coordination with Electrical Transmission Line	2.0	20.0	10.0									32.0
SUBTOTAL HOURS	2.0	24.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	16.0	70.0
SUBTOTAL FEE	$ 340.00	$ 3,360.00	$ 1,840.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,440.00	$ 1,360.00	$ 8,340.00

Detailed Work Plan and Schedule

Cost of Services — **PROJECT TITLE:** Feasibility Study of CR 180 Bridges and Mineral Springs Rd. Rail Bridge, Steele County, MN

DESCRIPTION OF PROFESSIONAL SERVICES OR TASKS	WHKS											
	Project Principal	Project Manager	Asst. Project Manager	Roadway / Trail Design Engineer	Design Technician	Utility Design Engineer	Enviro Scientist	Structural Project Engineer	Structural Technician	Survey Supervisor	Survey Tech.	Subtotals
Task 9 Right of Way												
9.1 Develop Needs and Costs		2.0		8.0	16.0						16.0	42.0
SUBTOTAL HOURS	0.0	2.0	0.0	8.0	16.0	0.0	0.0	0.0	0.0	0.0	16.0	42.0
SUBTOTAL FEE	$ -	$ 280.00	$ -	$ 920.00	$ 1,520.00	$ -	$ -	$ -	$ -	$ -	$ 1,360.00	$ 4,080.00
Task 10 Traffic Analysis												
10.1 Acquire Counts		2.0	2.0	16.0								20.0
10.2 Modeling and Report		12.0	2.0	80.0								94.0
SUBTOTAL HOURS	0.0	14.0	4.0	96.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	114.0
SUBTOTAL FEE	$ -	$ 1,960.00	$ 460.00	$ 11,040.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,460.00
Task 11 Preliminary Design / Concept Layouts												
11.1 Preliminary Layouts	4.0	8.0	20.0	10.0	20.0	8.0		16.0	16.0			102.0
11.2 Review	4.0	8.0	20.0	10.0	20.0	8.0		8.0	8.0			86.0
11.3 Finalize Layouts	2.0	8.0	20.0	10.0	20.0	8.0		8.0	8.0			84.0
SUBTOTAL HOURS	10.0	24.0	60.0	30.0	60.0	24.0	0.0	32.0	32.0	0.0	0.0	272.0
SUBTOTAL FEE	$ 1,700.00	$ 3,360.00	$ 6,900.00	$ 3,450.00	$ 5,700.00	$ 2,760.00	$ -	$ 4,160.00	$ 3,040.00	$ -	$ -	$ 31,070.00
Task 12 Funding Sources												
12.1 Identify Sources	4.0	4.0	4.0									12.0
SUBTOTAL HOURS	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0
SUBTOTAL FEE	$ 680.00	$ 560.00	$ 460.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,700.00
Task 13 Additional Tasks												
13.1 3D Model of Preferred Alternative	2.0	4.0	2.0		24.0							32.0
SUBTOTAL HOURS	2.0	4.0	2.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	32.0
SUBTOTAL FEE	$ 340.00	$ 560.00	$ 230.00	$ -	$ 2,280.00	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,410.00
Project Total Hours	62.0	178.0	240.0	190.0	168.0	160.0	24.0	64.0	48.0	36.0	168.0	1338.0
Project Rates	$170.00	$140.00	$115.00	$115.00	$95.00	$115.00	$90.00	$130.00	$95.00	$120.00	$85.00	
Project Total Fee	$ 10,540.00	$ 24,920.00	$ 27,600.00	$ 21,850.00	$ 15,960.00	$ 18,400.00	$ 2,160.00	$ 8,320.00	$ 4,560.00	$ 4,320.00	$ 14,280.00	$ 152,910.00

TASK SUMMARY		Total	
Task 1	Project Management	$12,290.00	
Task 2	Public Involvement	$6,600.00	
Task 3	Alternative Analysis	$24,380.00	
Task 4	Railroad Coordination	$15,720.00	
Task 5	Survey and Mapping	$13,400.00	
Task 6	Preliminary Hydraulics	$16,540.00	
Task 7	Environmental	$1,920.00	
Task 8	Public and Private Utility Identification and Coordination	$8,340.00	
Task 9	Right of Way	$4,080.00	
Task 10	Traffic Analysis	$13,460.00	
Task 11	Preliminary Design / Concept Layouts	$31,070.00	
Task 12	Funding Sources	$1,700.00	
Task 13	Additional Tasks	$3,410.00	
	Subtotal	$152,910.00	
	Expenses	$3,500.00	Mileage, Traffic Counts
	TOTAL PROJECT COST	$156,410.00	

COST SHARING RECOMMENDATION

WHKS recommends a 60% Steele County and 40% City of Owatonna cost split for this project.

WHKS Client Testimonials

Similar Project Studies/Design Projects

"WHKS staff provided exceptional professional services throughout all phases of the 19th Street Overpass Bridge project. Project Engineers managed and coordinated relocation of several utilities, as well as the general bridge contractor. The City was very pleased with the responsiveness and attention to details related to this complex project."

--Mark A. Rahm, P.E.
City Engineer, Mason City, Iowa

"WHKS has been proactive when issues or changes have been proposed, responsive to questions and innovative in the preliminary design process. WHKS worked to maintain the budget and schedule. The City looks forward to our continued partnership during final design and construction of this project."

--Darrel Rensink
Former City Economic Development Director, Boone, Iowa

Summary

Why is the WHKS Team the Best Choice?

» **Your Transportation Engineering Experts.** WHKS has participated in the planning and design of many major transportation corridors, bridges, and streets as well as drainage, railroad-related projects, traffic signal, and utility improvements.

We will apply our specialized experience to resolving project challenges without "reinventing the wheel" - saving the County and City time and money.

» **Team's Understanding of Key Issues.** Our key team members have delivered similar projects and provide a wide range of "lessons learned", knowledge, and extensive project experience. We have identified the project's key issues and opportunities on Pages 2 and 3.

» **Communication and Public Outreach.** We understand the importance of strong communication and interaction with stakeholders, County and City staff, the CP Railroad, and residents. We have the tools and experience to communicate project objectives, impacts, and schedule in person or virtually.

» **Responsiveness.** When you call, it's our goal to call you back within the hour or email you back within the same business day.

» **Innovative Alignment Alternatives.** We will suggest implementation of the right solutions for the right reasons. The WHKS Team will provide innovative and practical solutions.

» **Cost Effective Solutions.** We pride ourselves in getting projects right the first time and without design and budget "surprises". WHKS has proven project development and implementation experience with similar projects.

We respectfully ask you to select WHKS for this work based on our understanding of the project's key issues and our commitment to providing functional, cost-effective and accessible solutions.