Exhibit A
Scope of Services
Blatnik Bridge Preliminary Engineering
Detailed Scope of Services and Deliverables

Project Overview
The States of Minnesota and Wisconsin are proceeding with development of the John A. Blatnik Bridge (MN Bridge 9030, WI Bridge B-16-5) as a replacement/rehabilitation project with construction planned for 2027. The bridge connects the City of Duluth, Minnesota and Superior, Wisconsin and was originally constructed from 1958 - 1961, and was reconstructed (except the truss span) and widened in 1993. The bridge carries four lanes of traffic with an approximate ADT of 33,900.

The existing bridge has a total length of 7,980 feet and has a width varying from 58 – 70 feet. The bridge is comprised of two superstructure types. The main river spans include a long suspended tied steel arch truss between two continuous cantilevered deck trusses. The approach spans are made up of a multi-girder system with continuous spans suspended from pin and hanger connections, which transitions to a two-girder floor system that is also suspended from pin and hanger connections. The truss span measures 1,140 feet in length, which includes the cable suspended arch truss span with a length of 600 feet over the navigation channel and vertical clearance of 120 feet over the St. Louis River. The bridge is supported by 51 piers for combined total of 52 spans over the St. Louis River and ports of Duluth and Superior. The 1993 project utilized existing substructure foundations on the approach spans with added post-tensioned pier caps to support the widened approach span superstructure.

Other improvements, recent development of Management Plan, and ongoing Technical Analysis include:
2. Outline light system installed in 1996 and replaced in 2012
4. Center span cable evaluation – 2010
8. Load posting (legal loads only) – as result of ongoing Technical Analysis – 2019
9. Future Preservation Project (by others) – planned for 2021

The study area encompasses the logical termini at the I-535/Garfield Avenue interchange in Duluth, Minnesota and the termini in Wisconsin will be the intersection of Hwy’s 2 & 53 in Superior near Barker’s Island.

MnDOT is the lead agency for any work on the Blatnik Bridge with Wisconsin DOT participation. Contractor is required to assist State's Project Manager with extensive project coordination including, but not limited to, responsible agencies and other stakeholders. Extensive coordination will be required with MnDOT's District 1, MnDOT's Bridge Office and MnDOT's Office of Environmental Stewardship, WisDOT, and FHWA in both states.

The States have an in-progress Technical Analysis contract for structural analysis and service life evaluation and reporting, including LRFD load rating, cable loss analysis, wind loading analysis, paint system evaluation, substructure analysis and pile condition evaluation.

All deliverables will be electronic with engineering details delivered in both Microstation (Minnesota) and Civil 3-D (Wisconsin) formats.
The Blatnik Bridge replacement will be considered a Federal Major Project. All of the work under this contract and its deliverables are part of the Federal NEPA process and will need to be rolled up into the NEPA document, currently anticipated as an EA/EAW.

At each step and deliverable, the key items to be considered and documented for alternatives are:

- reasonable and foreseeable
- Reasonable, prudent, and practicable
- Avoid, minimize and mitigate

Overall, the scope of work (Phase 1 below) intends to accomplish the following:
1. Project Management and collaboration with stakeholders on development of a new signature bridge to replace the Blatnik Bridge truss spans with integrated rehabilitated or new approach spans. Contractor will be expected to collaborate with technical advisory committees, public advisory committees, environmental agencies and other stakeholders to develop a formal purpose and need for the project based on input to be gathered during development of the project.
2. Complete scoping and environmental documentation for project with rigorous study of various alignment alternatives for the bridge replacement/rehabilitation, including highway connections of approach roadways in Minnesota and Wisconsin. An Environmental Assessment (EA) process is assumed as the basis for environmental documentation.
3. Complete bridge alternatives analysis and bridge type selection for replacement of the truss spans, along with rehabilitation, replacement, or a combination of rehabilitation and replacement for the approach spans.
4. Complete preliminary structural analysis and development of Type, Size, and Location (TS&L) plans, and associated comparative total project cost analysis for various alternatives to be developed by Contractor, including consideration of various foundation types and re-use of existing foundations.
5. Upon selection of a preferred alternative, State’s may elect to add tasks to this contract to complete Phase 2 as outlined below. If desired by the State’s, these tasks would be added to this contract as Phase 2 by amendment.

The phased work is anticipated in the following phased approach:

PHASE 1:
1. Project Management
2. Public and Agency Involvement
3. Data Collection and Analysis
   a. Traffic
   b. Surveys
   c. Wetlands and Hydraulics
   d. Utilities
   e. Bridge 9030 Bridge Management Plan
   f. Blatnik Bridge Technical Analysis Contract (ongoing and overlapping with this Contract)
   g. Bridge 9030 Plans (includes original construction, major rehab project, and other)
4. Scoping
5. Visual Impact Assessment (includes Renderings and 3D Visualizations)
6. Preliminary Geometric Layout
8. Bridge Alternatives Development and Comparative Total Project Cost Analysis
9. Risk Management
10. Environmental Documentation leading to the selection of the Preferred Alternative
12. Support for Cost Risk Analysis Value Engineering (CRAVE) efforts by others
13. Quality Management

PHASE 2: (as authorized in writing and incorporated by Contract amendment)
1. Final Geometric Layout and Design Memorandum
2. Bridge Type, Size, and Location Plans (preliminary bridge plans)
3. Preliminary Staging Plans
4. Design Memorandum
5. Visual Quality Manual (VQM)
6. Updated Renderings, 3D Visualizations, and Animation of Preferred Alternative
7. Support for Cost Risk Analysis Value Engineering (CRAVE) efforts by others
8. Data for Cost Estimate Review Update
9. One more FHWA Cost Estimate Review (CER)

For Phase 1, Contractor will complete all necessary scoping, project management, assist State with public involvement, environmental documentation, staging considerations, lifecycle cost determination, preliminary layout alternatives, and other data collection required to complete the environmental documentation leading to a preferred alternative for rehabilitation or replacement of Bridge No. 9030. Contractor will present to State for approval all deliverables resulting from these tasks as detailed in this scope.

Phase 2 activities will proceed at State’s sole discretion, and only upon written notice to proceed from State.

1.0 PROJECT MANAGEMENT (Activity Code 1010)

Project management will include work necessary for communication and completion of the project tasks on time and within budget. Contractor’s Project Manager or their primary duties will not be reassigned without the written consent of the State’s Project Manager. Contractor’s staff will have the training and expertise necessary for the work tasks to which they are assigned.

1.1 Administration
Administration of the project will include meetings, progress reports, invoicing, preparation of contract amendment requests, cost and schedule updates, billing preparation, other non-technical work, communication with the project personnel, sub-consultant management, and all other work to ensure all the project tasks are completed on time, within budget, and in accordance with State and Federal laws, rules, and regulations.

Progress reports and invoices will be submitted on a monthly basis. Contractor will submit invoices in a timely manner.

Contractor will hold bi-weekly Coordination Meetings (teleconference) with State's Project Manager (assume 4 hours per month for a duration of 3 years)

1.2 Schedule Management
State will maintain a P6 project schedule throughout the duration of this project. Contractor will review the State’s schedule as requested by the State’s Project Manager and provide bi-
weekly updates to State’s Project Manager for all activities included in this contract. Major milestones/critical path activities will be provided to Wisconsin by the Contractor.

1.3 Kick-off Meeting
The Kick-off meeting will establish a communications protocol and discuss the project schedule. Contractor will receive available existing information from the States. There will be State-provided survey and mapping data, previous studies completed for the area, a brief discussion of known issues, and a review of the project schedule. Contractor will prepare a meeting agenda and minutes.

1.4 Project Management – Preliminary Engineering Team Meetings
Meetings will be held monthly until the final deliverables are complete, Topics will include the project schedule, issues that may affect design, schedule, budget, or work quality will be addressed. Contractor will prepare an agenda and facilitate the Project Management Team meetings. Contractor will also prepare and distribute draft minutes for review/comment to all meeting participants within two business days after each meeting and final minutes within 10 business days after each meeting. Assume six meetings per year in Duluth, MN or Superior, WI and six meetings per year via teleconference. It is also assumed that these meetings will be held in state facilities and there will be no cost to the Contractor for meetings rooms.

1.5 Quality Management
Contractor will maintain a project specific Quality Management Plan (QMP) that specifies how the Contractor will perform Quality Assurance (QA) and Quality Control (QC) activities throughout the contract duration to ensure delivery of quality design in a timely manner and in conformance to contract requirements established for the project. The QMP will be submitted to the State’s Project Manager for reference within 10 working days of the Notice to Proceed.

Contractor will perform Discipline Coordination Reviews and quality control checking of each submittal.

1.6 Deliverables
**Contractor will:**
1. In cooperation with State’s Project Manager, Schedule and attend meetings.
2. Hold a kick off meeting
3. Hold bi-weekly conference calls with State’s Project Manager.
4. Hold monthly preliminary engineering team meetings
5. Prepare meeting agendas, displays, and minutes for meetings listed above.
6. Prepare and submit monthly progress and status reports.
7. Provide bi-weekly P6 schedule updates to the State’s Project Manager
8. Provide timely copies of critical correspondences and project issue data.
9. Prepare and maintain Quality Management Plan (QMP)

**State will:**
1. Review and respond to submittals.
2. Coordinate meeting schedules and internal reviews.
3. Provide copies of project correspondences, project studies, and general project information.
4. Attend meetings.
5. Approve deliverables.
2.0 PUBLIC AND AGENCY INVOLVEMENT (Source Code 0054)

Contractor will participate in development of a Public Involvement Plan led by the State with the intent of developing and maintaining a consistent level of public awareness and understanding of the project. Contractor will assist State in development and implementation a Public Information Plan that supports State in developing and maintaining a consistent level of public communication with the goal of establishing trust, public awareness and understanding of Project. Public Involvement meetings will be held in either Duluth, MN or Superior, WI. See details on each group for further details.

Contractor will not be responsible for responding to media inquiries. All media inquiries will be directed to the State’s Project Manager.

All materials and presentations prepared by the Consultant for meetings must be pre-approved by the State’s Project Manager.

2.1 Technical Advisory Committee
The role of this committee is to support and guide project development. Contractor will prepare for and facilitate up to 24 technical advisory committee (TAC) meetings, and distribute meeting notices and summaries to be held in the project area. Assume an average of two staff per meeting at State facilities in the Duluth/Superior area. Contractor will arrange and pay for lunches for all day meetings (assume 12) and prepare exhibits and presentations. Participants for the TAC will be identified with the State’s Project Manager and will vary with the stage of the project. Participants may include, but are not limited to, the Minnesota and Wisconsin Departments of Transportation, St. Louis County (MN), Douglas County (WI), the City of Duluth, City of Superior, US Fish and Wildlife Service, US Army Corps of Engineers, Minnesota Department of Natural Resources, Wisconsin Department of Natural Resources, US Coast Guard and other agencies. Tribal coordination is included in this task and each tribe will require individual consultation to determine participants.

2.2 Stakeholder Advisory Committee
The role of this committee is to provide input for development of the purpose and need for the project and to assist with potential issues. Contractor will prepare for and facilitate up to 10 project advisory committee (PAC) meetings, and distribute meeting notices and summaries to be held in the project area. Contractor will arrange and pay for adequate facilities and refreshments and prepare exhibits and presentations. Participants for the PAC will be identified in the Public Involvement Plan. Participants may include, but are not limited to, the Minnesota and Wisconsin Departments of Transportation, St. Louis County, Douglas County (WI), City of Superior, City of Duluth, Metropolitan Interstate Committee (MPO), Duluth Chamber of Commerce, Superior Chamber of Commerce, Port of Duluth/Superior and other interest groups and business groups.

2.3 Environmental Agency Workshop
Contractor will prepare for and facilitate an Environmental Agency workshop focusing on locations of any legally protected resources, alternatives scoping, decision support, and alternative refinement. Contractor will arrange and pay for refreshments, lunches, facilities and prepare exhibits and presentations. Contractor will prepare and distribute workshop notices and summaries.
2.4 Environmental Agency Progress Review Meetings
Contractor will prepare for and facilitate an Environmental Agency Progress Review Meetings focusing on the locations of any legally protected resources, alternatives decision support and alternative refinement. Contractor will arrange and pay for refreshment, lunches, and facilities and prepare exhibits and presentations. Contractor will prepare and distribute workshop notices and summaries. Contractor will prepare for and facilitate up to 5 (five) Environmental Agency Progress Review Meetings upon direction from the States Project Manager. The meeting will focus on locations of legally protected resources and ways to avoid them, alternatives decision-making support and alternative refinement, including any unavoidable, potential mitigation measures.

2.5 Additional Meetings (Stakeholder and Special Interest groups)
Contractor will prepare for and facilitate up to 24 additional meetings with review agencies or other stakeholders as directed by the State’s Project Manager. Arrange and pay for adequate facilities and refreshments and prepare exhibits and presentations. Contractor will prepare and distribute meeting notices and summaries.

2.6 Project Web Documents
Contractor will be responsible for providing project information in web/ADA ready formats for the State's use in keeping the general public informed. Contractor will provide documents and graphics for the States to post on their websites. Assume monthly updates for the duration of the project.

2.7 Public Hearings
Contractor will assist the State in organizing and conducting one public hearing in each state as required by the EA/EAW process. Contractor will arrange and pay for adequate facilities refreshments and a court reporter and prepare exhibits and presentations. Contractor will prepare a record of public and agency comments. See Section 13.1 for further details.

If a roundabout is proposed for any roadway in Wisconsin, a separate public hearing is required. This work will be added by amendment to the contract if required.

2.8 Public Information Meetings
Contractor will assist the State in organizing and conducting up to 10 Public Information Meetings per year (assume 30 days total) to gather input from and inform the general public and the stakeholders of the project’s progress. It is anticipated that 2 meetings would be held on the same day rotating between lunch and evening times and Duluth and Superior. Contractor will arrange and pay for adequate facilities refreshments and prepare exhibits and presentations. Public Information Meetings will be held in the project area with meetings split between Minnesota and Wisconsin and lunch and evening times. Contractor will prepare a record of any comments. Assume 2 Contractor staff per meeting.

Half of the public meetings will be livestreamed to a public media such as Public Access Television, You Tube or Facebook etc. All presentation materials must be ADA compliant.

2.9 High Quality Renderings and 3D Visualizations as accompanying materials for the EA/EAW and to be shown on project websites and at public meetings, Contractor will prepare renderings and 3D Visualizations. Contractor must have State’s approval of renderings prior to any public release. Assume up to 4 alternatives in Phase 1.
2.10 Deliverables

**Contractor will:**
1. Assist with development of the Public Information Plan.
2. Prepare and facilitate up to 24 TAC meetings.
3. Prepare and facilitate up to 10 PAC meetings.
4. Prepare and facilitate an Environmental Agency Workshop.
5. Prepare and facilitate up to 5 Environmental Agency Progress Review Meetings.
6. Prepare and facilitate up to 24 additional meetings.
7. Provide web/ADA ready documents for posting to the State's project websites to include project concept layouts, pertinent documents and presentation materials.
8. Prepare and facilitate the Public Hearings.
9. Prepare and facilitate up to 30 Public Information Meetings.
10. Prepare renderings and 3D visualizations for each alternative presented.
11. Provide notices, agendas and meeting minutes for all meetings.
12. Provide timely copies of critical correspondences and project issue data.
13. Pay for meetings rooms, refreshments, exhibits and a court reporter.

**State will:**
1. Lead the Public Involvement Plan development.
2. Provide project oversight and direction.
3. Review and approve submittals in a timely manner.
4. Furnish copies of pertinent project correspondence and project data.
5. Attend and assist with project meetings.

3.0 DATA COLLECTION AND REVIEW (Source Code 1003 unless otherwise noted)

For the Environmental Assessment, Contractor will perform the required data collection and field studies as noted below and analysis needed for evaluation of the build/no-build alternatives, environmental documentation, and proposed mitigation.

3.1 Traffic Forecasts (Source Code 1015)
Contractor will project year 2027, 2047, & 2077 intersection turning movements, roadway ADTs, and equivalent single axle loads (ESALs) for the Project. Contractor will perform traffic analysis utilizing Synchro/SimTraffic software to project the study area intersection delays, level of service (LOS), and queuing for years 2027 & 2047. Contractor will complete additional traffic analysis - including detour/user cost assessment, multiple additional operations model runs, concept failure analysis and street sensitivity analysis. The detour/user assessment will include both full closure and partial closures.

3.2 Intersection Control Evaluation (ICE) Report (Source Code 1251)

3.3 Business Economic Study
Contractor will conduct a business/economic study outlining the economic impact of each alternative. In addition to the roadway impacts, this study must include shipping and freight through the channel, limitations on the shipping channel, and cumulative and indirect...
impacts. The study should utilize the long term comprehensive port plan and the port land use plan.

3.4 The Metropolitan Interstate Committee (MIC) is in the process of conducting a freight study. Contractor will review and incorporated these findings into the project studies as appropriate.

3.5 Geotechnical Data Review (Source Code 1190)
Contractor will review and evaluate all existing foundation borings from the original plans, together with existing pile driving records for consideration of viability of the rehabilitation alternatives. The results from the ongoing Blatnik Bridge Technical study will be provided by State which include evaluation of the existing substructures from end to end of bridge, based on existing pile driving records. This will allow an evaluation of the existing substructures from end to end of bridge to allow Contractor to gain understanding of existing substructure capacity of existing pier footings and pile foundations. Feasible and prudent options for foundations and reuse of existing foundations must be documented.

State anticipates that further substructure investigations will occur concurrently with this contract for more in-depth foundation alternatives evaluation and will be completed by others. Initial review of results from ongoing technical study is planned to be augmented with a foundation exploration plan to characterize the subsurface site conditions for further evaluation of various alignment alternatives (upstream, downstream, and along the existing alignment).

Contractor will provide a Geotechnical Engineer with expertise in evaluation of existing foundations and foundation strengthening alternatives and collaborate with State’s Foundation Engineer(s) for development of foundation exploration plan. Consideration of various foundation alternatives will be integral to development of various rehabilitation alternatives, leading to the preferred alternative. Contractor will develop comparative cost evaluation of alternatives leading to the preferred alternative. Foundation borings will be done by others and provided to Contractor.

3.6 Deliverables

**Contractor will:**
1. Conduct traffic counts as needed for the traffic forecasts.
2. Provide traffic forecasts.
4. Prepare ICE reports for intersections in the alternatives.
5. Evaluate results from Blatnik Bridge Technical study
6. Conduct a review of the existing foundations.
7. Participate in foundation exploration program recommendations

**State will:**
1. Provide any existing traffic counts and studies.
2. Review and approve submittals in a timely manner
3. Provide any geotechnical information and analysis results of existing foundations from Blatnik Bridge Technical Study, together with existing pile drive records
4. Provide additional foundation borings for further development of foundation recommendations, anticipated to be a collaborative effort between Contractor and State’s Geotechnical Engineer.
4.0 COST ESTIMATING (Source Code 1003)

This work involves cost estimating for the various alternatives. The estimates will need to be delivered in electronic format (Excel). Contractor will provide project specific cost information to State for supporting processes such as the STIP, Financial Plans and other processes in both states in addition to construction cost estimates and Total Project Cost Estimates. Cost estimates will be done in current year prices and inflated to the mid-point of construction. Assume updating costs estimates on a quarterly basis.

The cost estimate for this project could exceed $500 million. A project in excess of $500 million is considered a Federal Major Project. One requirement of major project development will be a Cost Estimate Review (CER). For the purposes of the cost proposal, assume a CER will be required.

4.1 Cost Estimating for Roadway and Bridge Alternatives
Contractor will prepare preliminary cost estimates for the alternatives. Cost estimates will be based on the Contractor’s preliminary geometric layout, and typical State roadway construction costs, assembled by Contractor with concurrence by State Project Manager.

Cost estimates will be calculated on a detailed (including all grading, base, surfacing, etc.) basis for various roadway design typical sections (mainline roadway, frontage roads, ramps, etc.) plus drainage features, structures, lighting, retaining walls, bridges and any other features of the constructed project.

Assume 4 roadway alternatives and 4 bridge alternatives.

4.2 Total Project Cost Estimate (TPCE)
Contractor will also prepare a total project cost estimate that will include road, bridge, right of way, engineering, risk, and as directed user and business costs. See Section 3 for user and business cost studies.

4.3 Cost Estimate Review (CER)
The CER will be done toward the end of the Preliminary Design/NEPA phase, about 90 days prior to the anticipated NEPA document approval. The CER would be conducted by FHWA personnel. It would require a week-long workshop, and would require states personnel and the Preliminary Design Consultant, to attend the workshop. The CER would be done on the preferred alternative. More information can be found at https://www.fhwa.dot.gov/majorprojects/cost_estimating/process.cfm

4.4 Cost Risk Analysis Value Engineering (CRAVE) Support
A CRAVE study will be conducted by others before the selection of the preferred alternative. Consultant will not be required to participate in the CRAVE study, but will need to provide exhibits and data to the study.

4.5 Deliverables
**Contractor will:**
1. Develop cost estimates as indicated.
2. Update costs quarterly
4. Participate and provide supporting information for the CER and CRAVE studies.
State will:
1. Review and approve estimates.

5.0 RISK MANAGEMENT (Source Code 1010)

Contractor will support State’s Project Manager, Project Staff and potentially project construction contractor in the development of risk registers and cost plus risk estimates. Contractor will coordinate with State’s Project Manager to invite regulatory agencies into this process at key times. The risk registers will be developed via a collaborative process in three facilitated workshops at the key design milestones for the project. In addition to the key workshops, risks will be updated quarterly. Activities in this task include:

5.1 Pre-Workshop Activities
- Collect and analyze relevant information that may help forecast or discuss project risks
- Review current project scope, cost estimates and schedules with Project Manager
- Prepare agenda that correlates with State Risk Management Process

5.2 Risk Workshop Activities
- Identify and assess project-specific risks and opportunities that would either impact the project’s cost and/or schedule, or project objective impacts, or could provide the opportunity to realize some cost and/or schedule savings
- Establish suitability of both cost estimate and schedule for an assessment and cost load
- Establish risk impacts (probability, cost and time impacts, objective impacts) to be applied to each identified risk event
- Develop a risk register reflecting same
- Categorize the risks impacts in accordance with the project’s work breakdown structure
- Facilitate the qualitative assessment of the risks and opportunities by workshop attendees
- Facilitate the defining of risk response strategies and quantify residual risk after implementing.
- Update cost estimate for budget purposes that includes the base cost plus risk cost.

5.3 Risk Analysis and Reporting Activities
- Facilitate a quantitative assessment of the uncertainty surrounding quantities, unit prices and schedule activity durations
- Prepare a cost risk analysis using Monte Carlo methods utilizing such tools as Palisade @Risk, Crystal Ball etc.
- Prepare a schedule risk analysis using Monte Carlo methods utilizing such tools as Oracle Primavera Risk Analysis (OPRA), Acumen etc.
- Prepare Draft and Final Risk Register
- Prepare a presentation of results
- Prepare a Cost Risk Analysis report for the results from the initial workshop at and two page executive summaries for each of the updates the subsequent workshops.
- Conduct conference calls/webinars with State staff to review new information about project and program risks and cost estimates
- Document and present changes to project and program risks and costs
- Update risk models and recomputed information as projects are updated at least quarterly.

5.4 Deliverables
Contractor will:
1. Complete project risk workshops at project initiation, preliminary geometric layout and completion of Phase 1.
2. Draft Project Risk register will be completed within 14 days of the Project Workshop.
3. Update the risk model quarterly.
4. Actively manage and reduce impact of the top project risks
5. Assist in developing mitigation strategies for each risk.

State will:
1. Provide project oversight and direction.
2. Review and approve submittals in a timely manner.
3. Furnish copies of pertinent project correspondence and project data.
4. Provide list of participants for risk workshop
5. Attend and participate in meetings and workshops.

6.0 SURVEYS (Source Code See item for code)

6.1 Design/Location Surveys (Source Code 1021)
State will furnish previously completed Digital Terrain Mapping (DTM) files, survey control point information, historic water level map, dredge survey and other previously completed mapping files covering the potential project area. Contractor will review the supplied survey information and will identify where supplementary survey work is required to complete the design deliverables, acquire additional data/information, or demonstrate the location of proposed features.

Contractor will perform supplementary design/location surveys in either the state of Minnesota or in Wisconsin. Supplementary survey work completed by the Contractor will use the same datum(s) and project controls that are identified in the State supplied mapping files. Contractor will notify the State’s Project Manager at least five (5) business days before performing any supplementary survey work in the field.

Contractor will verify survey datums used for data furnished by Third Parties (if any), such as hydraulic models or affected utilities. Contractor will ensure that third party information (if any) is consistent with datums in use by the Project and consistent with Quality Control checks detailed in the QMP. Datum conversion must be shown on all data.

Contractor will update the base mapping to incorporate the supplemental survey information and provide it to the States. Douglas County (Wisconsin) is currently updating the state line survey.

The tasks will be performed in conformance with the current standards and specifications of State Survey and Mapping Manual, unless otherwise specified. Assume 240 person hours of supplemental surveying and data processing.

6.2 Bridge Survey (Source Code 1040)
State will provide bridge surveys to support development of bridge alternatives. Contractor will coordinate with State to determine if there are additional survey needs. Bridge surveys must follow the MnDOT Survey Manual.

6.3 Utilities Analysis (Source Code 1195)
Contractor will conduct a utilities analysis on the alignments including the following:
• Data Collection - Contractor will initiate calls to Gopher State One Call and Digger’s Hotline to request information from utilities.
• Review Inplace Utility Information - Contractor will follow-up with direct contact to each utility owner to obtain and verify information and drawings provided by utility owners.
• Create Utility Owner Database - Contractor will create a utility owner database in Microsoft Excel listing the names, addresses, phone numbers and contact person of each utility in the corridor.
• Survey Significant Inplace Utilities - Contractor will conduct surveys to locate major inplace utilities including power transmission lines, gas lines and fiber optic.
• Identify Major Utility Impacts - Contractor will prepare a memorandum to inform the State of any major utility impacts that may affect right of way needs for the State or the utility company. The memorandum will provide the location and detailed information regarding the potentially impacted utility, the utility owner, and a contact with the utility.
• Prepare Utility Exhibits - Contractor will map surveyed and approximate (distinguishing between the two) utility locations in a Microstation/Civil 3D file. Additional textual information identifying the owner and functional details of the utility will be included in the file using the State's Geopak survey database or at a minimum, using the State's utility symbology as per the State's CADD Standards

6.4 Deliverables

**Contractor will:**
1. Complete up to 240 personnel hours of supplemental survey work.
2. Complete the utility survey separate from the 240 hours of supplemental survey work.
3. Provide a full bridge survey for Bridge 9030 separate from the 240 hours of supplemental survey work.
4. Analyze and map utilities

**State will:**
1. Provide DTM files, tin files, planometrics, alignment, bathymetric and R/W information in Microstation(Minnesota) and Civil 3D (Wisconsin)
2. Provide file directory and datum for survey.

7.0 PROJECT PURPOSE AND NEED (Source Type 1071)

Contractor will develop Purpose and Need Statement based on guidance as outlined in the Highway Project Development Process (HPDP) Handbook and considering work conducted as part of the previous Blatnik Bridge traffic studies, WisDOT studies, and the data and analysis done under this contract. The Purpose and Need will explain why State and WisDOT are undertaking the proposed actions and describe the project objectives.

7.1 Contractor will meet with key stakeholders, including FHWA for both states, to review and approve the Purpose and Need Statement, establish the project limits, identify the key Social, Environmental and Economic (SEE) issues, develop evaluation criteria and determine the appropriate range of alternatives to consider.

7.2 Contractor will conduct up to five Scoping meeting with State and selected Stakeholder representatives to determine the Project Purpose and Need and to define the general Project Limits.
7.3 Deliverables

Contractor will:
1. Provide a draft and final Purpose and Need Statement.
2. Prepare and facilitate up to five Scoping Meetings
3. Work with States to develop evaluation criteria.

State will:
1. Provide project oversight and direction.
2. Review and approve submittals in a timely manner.
3. Attend and participate in Scoping Meetings.
4. Provide feedback, direction and concurrence with finalizing the Project Purpose and Need.

8.0 PRELIMINARY GEOMETRIC LAYOUT (Source Code 1140)

8.1 Prepare Preliminary Geometric Layout
Consistent with the MnDOT HPDP and WisDOT road design standards and Performance Based Design Standards, Contractor will develop and evaluate alternative alignments, profiles, and/or cross sections that demonstrate consideration of strategies to avoid resources, minimize the impacts of R/W acquisition, and provide and understanding of vehicle types, traffic patterns, and movements. Prepare and submit a Preliminary Geometric Layout, profiles, preliminary cross sections, bridge information and wall information for the bridge approach roadways in the project to the State for review. Provide the GEOPAK Drainage data base file used in the hydraulic design and analysis.

Contractor (no more than 2 staff) will coordinate and attend a comments resolution meeting with the State’s Geometric Design Unit in St. Paul for each layout submitted. WisDOT staff will also attend the meetings in St. Paul to resolve all comments at one time.

Contractor will submit the electronic files with the refined alternatives and a draft and final design documenting the alternative development and evaluation process in paper, (*.pdf) and Microstation/Civil 3D formats to State. Contractor will submit the Geometric Layout and profiles for State approval including routing for final review and signature. Submittal will include both hard copy (up to 3 copies) and electronic file. As part of each layout submittal, Contractor must provide QC redlines and a spreadsheet listing each review comment and how it was addressed. All electronic files will be in Microstation power GEO-PAK SS3 or newer in accordance with State CADD standards. Wisconsin electronic files will be in Civil 3D.

8.2 Deliverables

Contractor will:
1. Prepare the preliminary geometric layouts.
2. Submit the electronic files for review.
3. Attend meetings with State Geometrics Unit

State will:
1. Provide project oversight and direction.
2. Review and approve submittals in a timely manner.
3. Attend and participate in the meetings
9.0 APPROACH SPAN REHABILITATION STUDY and BRIDGE ALTERNATIVES ANALYSIS (Source Code 1002)

9.1 Blatnik Bridge 9030 Project Background Information

Contractor will review the existing Blatnik Bridge 9030 project background information, including plans from the original construction, plans from the 1993 widening project, subsequent repair projects, and recent bridge inspection reports to gain an in-depth understanding of the condition of the existing bridge. A considerable amount of information has been accumulated and organized for long range planning with completion of the 2017 Blatnik Bridge Management Study (a.k.a. the Blatnik Management Plan). Contractor must familiarize itself with the contents of the Blatnik Management Plan, which includes twelve alternatives associated with bridge replacement. The Blatnik Management Plan identified information gaps that required further investigation and evaluation for determination of remaining service life of the bridge, which was anticipated to be 15 – 40 years, depending on maintenance investments.

States initiated a contract in 2018 to complete in-depth technical analysis for the entire structure to address information gaps identified from the Blatnik Management Plan. The outcome of the technical analysis contract will help guide the States with planning, scoping and development of an interim preservation project to prolong the life of the bridge prior to the replacement/rehabilitation work that is proposed to be developed as part of this contract. The development of the scoping and plans for short term preservation project is ongoing, and will overlap with this contract. Contractor will be expected to familiarize itself with project information that is developed (by others) for the short term preservation project.

Work and contract deliverables from the technical analysis study are nearing substantial completion. Contractor will be expected to review the draft results completed to date, and final results upon completion of this separate contract.

Contractor will review the following information and reports provided by State that are under development from the Technical Analysis Contract:
1. The Phase I Load Rating - Load and Resistance Factor Rating (LRFR) of the truss and approach spans that was completed with HL-93 loading and select Minnesota and Wisconsin permit vehicles
2. The Phase II Load Rating – LRFR Ratings per Manual for Bridge Evaluation including Minnesota Legal (Posting) Loads per State’s LRFD Manual
3. Load Rating Criteria Recommendations Memo
4. Final Bridge Load Rating and Posting Report
5. Cable Loss Memo
6. Wind Analysis Report
7. Phase I Substructure Analysis Report :( includes HL-93 analysis of all pier caps and demand/capacity ratios of 4 representative piers, columns, footings, and piling subject to current LRFD loading and code provisions.
8. Phase II Substructure Evaluation Report: (includes ultimate strength and service load performance ratios of a comprehensive and representative sample of the 51 pier columns, footings, and pile load analysis for LRFD Strength I loading)
9. Select Pier delamination survey results and post-tensioned pier cap grout investigation reports
10. Results from Foundation Exploration (results pending separate Contract)
11. Service Life Analysis Report (when completed)
12. Conceptual Strengthening Report leading to Plans for interim preservation project (Plans to be developed by others in 2020 for 2021 construction).

Upon notice to proceed with this contract, Contractor will initiate and complete a detailed review of the analysis results from the ongoing technical analysis contract to form a comprehensive understanding of the load carrying capacity of the existing truss and approach spans for evaluation of rehabilitation alternatives.

The evaluation of rehabilitation alternatives included in this contract will primarily be based on Contractor’s evaluation of the results from the comprehensive structural evaluation and load rating analysis that is nearing completion for the ongoing separate Blatnik Bridge Technical Analysis study (by others). No separate independent development of structural analysis models for the truss spans are intended to be included in this Contract.

Contractor’s evaluation of approach spans must include a top down analysis approach to address all strengthening needs for assessment of repairs that would be required for various alternatives, including: maintaining legal loads, versus rehabilitation requirements to strengthen the bridge to carry annual permit vehicles, versus rehabilitation requirements to strengthen the bridge to carry HL-93 loading and select Minnesota and Wisconsin Permit Vehicles. The ongoing technical analysis contract will identify members requiring strengthening for each of these scenarios, based on analysis completed by others. Contractor will use results from Technical Analysis contracts, including review of rating reports and detailed review of models and load rating spreadsheets (by others) for this evaluation.

Proposed replacement and/or rehabilitation costs for various Contractor proposed alternatives will be developed by the Contractor, and evaluated in accordance with NEPA requirements.

9.2 Blatnik Management Plan Update (for information only)

The Blatnik Management Plan identified two bridge types that could be considered for bridge replacement with a purposefully constrained alignment alternative that would permit main span replacement with deferral of replacement of the approach spans. This study included several combinations of deferred approach span replacement over a 15 - 40 year period, with identification of a risk profile and life cycle cost studies. A premise of this study was that deferral of replacement of the approach spans was based on maintaining a minimum level of service on the approach spans to carry Permit C trucks (to represent annual permit vehicles) until its deferred replacement. The ongoing technical analysis contract has resulted in findings of several deficiencies within the truss spans and approach spans resulting in the current load posting for legal loads only (currently posted at 40 tons).

The cost of rehabilitation of the trusses and approach spans to restore its previous level of service to carry Permit C trucks is thought to be substantial. The cost to rehabilitate the trusses and approach spans to carry all special single trip permit vehicles would require even more substantial rehabilitation needs and costs.

Contractor will participate in further study of the analysis results for the approach spans from the Technical Analysis study, and develop structural models of the approach spans only for consideration of feasibility of rehabilitation, to further explore various rehabilitation alternatives, identify required repairs, and develop associated costs for approach span rehabilitation alternatives.
Rehabilitation alternatives must include a top down analysis approach, documenting superstructure repair costs, foundation retrofit costs, and future maintenance costs for any scenarios that continue to investigate deferred replacement and/or rehabilitation of the approach spans. The timeframe for deferred alternatives should generally be consistent with the timeframe used in the Bridge Management Plan. Comparative cost studies for each alternative must be evaluated in accordance with NEPA requirements, based on initial development of the Purpose and Need for the NEPA process, with consideration of meeting primary needs, secondary needs, other needs, total project cost, and other requirements concurrent with development of the EA (assumed for this project).

The Blatnik Bridge Management Plan proceeded with purposefully constrained assumptions with regard to a single alignment alternative (build on existing alignment), and without the benefit of fully vetted navigation span requirements (over the main channel and back channel). The bridge roadway cross section used in this study was based on closely matching the existing cross section, and does not provide consideration of multi-modal use.

Bridge Type Alternatives for this Contract should not be constrained to the bridge types shown in the Bridge Management Plan, and must be developed with consideration of required navigations span(s), alternative bridge cross sections, consideration of multi-modal use, and in accordance with Project Specific Design Criteria that must be developed by the Contractor, with input from the State(s) and Project Stakeholders.

9.3 Contractor must develop project specific Bridge Deck Cross Section, Navigation Span Elements and Design Criteria for use in development of Bridge Alternatives Analysis. Development of the project specific Design Criteria will include input from State(s) Bridge Office, State(s) District Operations, State(s) Geometrics Units, FHWA, and existing multi-modal plans. Contractor will participate in development of project specific Design Criteria utilizing a Performance Based Practical Design approach.

Specific tasks include:
- **Develop Bridge Deck Cross Section**
  Development of the bridge width cross section must include input from both State(s) and in accordance with MnDOT Tech Memo 17-12-TS-05. Resolution of the proposed bridge cross section is a primary design element that must be resolved early on, to effectively proceed with development of Bridge Alternatives Analysis.

- **Develop Navigation Span Requirements (over main channel and back channel)**
  Based on input from Technical Advisory Committee, Stakeholder Advisory Committee, and consideration of balancing project needs, develop Navigation Span Envelope(s) for various alignment alternatives for review and feedback from Port of Duluth/Superior Authorities, the US Coast Guard, and other agencies. Resolution of acceptable Navigation Span Requirements is a primary design element that must be resolved early on for consideration of various acceptable alignment and bridge type alternatives.

- **Develop Project Specific Design Criteria**
  With input from state(s), establish project specific Design Load Criteria for use in evaluation of various bridge rehabilitation alternatives. Criteria will be considered in various rehabilitation alternatives, including:
  a. Maintaining current load posting for legal loads (for use in no build alternative)
  b. Design Load for Rehabilitation to Permit C Loading (Annual permit vehicles)
  c. No Load Restrictions (Rehabilitation need to accommodate all special permit vehicles including OSOW loads specific to the Port of Duluth/Superior.)

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• Develop and provide bridge depth studies from preliminary geometric span/depth ratio criteria, slenderness criteria, and other bridge type specific design criteria for use in layout of bridge type, size, and location considerations.
• Develop other project specific data, including constructability considerations, foundation conflict considerations and user cost data for use in alternatives analysis evaluation
• Develop bridge specific design criteria for use in preliminary structural analysis for use in Phase II portion of Contract (that will include preliminary structural analysis of short-listed viable alternatives).

9.4 Bridge Alternatives Analysis
Concurrent with EA/EAW development, Contractor will develop six to eight total alternatives, split between rehabilitation and replacement alternatives, in conformance to Project Specific Design Criteria developed by the Contractor for subsequent short-listing of three to five alternatives to be evaluated in accordance with NEPA requirements.

Contractor will document detailed evaluation of any repairs and associated repair costs for the replacement and/or rehabilitation alternatives developed by the Contractor. Information considered in development of cost analysis must include sufficient detail to capture realistic replacement and/or rehabilitation costs and consideration of various foundation alternatives for the main river spans and approach spans. New proposed structure types should include consideration of various span layouts and foundation alternatives, to determine optimum span layout for various alternatives proposed. Viability and means of strengthening existing foundations or utilizing existing piles from existing foundations should include constructability issues and cost impact considerations including projected costs of excavating contaminated materials, and cost associated with dewatering associated water treatment requirements, specific to the project site.

Contractor will provide interim technical report(s) that include assumptions and project specific Design Criteria used for development of the proposed bridge types, span lengths, materials, redundancy, foundation strengthening (if viable), and assessment of profile grade and alignment tie-ins in Minnesota, including any impact on the existing Garfield Interchange, as well as and tie-ins with existing or reconstructed intersections in Superior Wisconsin, for each of the alternatives proposed.

Contractor will develop a range of alternatives in accordance with NEPA requirements for the following alternatives:

1. No build alternative – truss and approach spans remain (restricted to legal loads)
2. Truss and Approach Spans Replaced on New Alignments
3. Replace Truss and Rehab Approach Spans on same Alignment
4. Replace Truss and Defer Approach Span Replacement with recommended repairs

Specific tasks include:
• Develop Bridge Type Studies for various structure types in conformance with project specific design elements and design criteria (to be developed by Contractor)
• Develop Bridge Type Size and Location Drawings for 6 to 8 structure types for the range of alternatives
• Develop Bridge Approach Span rehabilitation alternatives
- Develop approximate quantities of excavated materials for consideration of disposal costs of excavated contaminated materials, including compliance with regulatory requirements for dewatering necessary for establish rehabilitated or new foundation alternatives
- Develop Bridge 9030 Approach Spans Repair or Replacement Recommendations Report – complete additional structural analysis only as necessary to augment results from the Technical Analysis Contract (no separate truss analysis is required)
- Bridge 9030 Approach Spans Repair or Replacement Report
- Bridge Replacement Study - Study Geometric and Project Constraints
- Bridge Replacement Study - Develop List of Feasible Structure Types through Screening
- Bridge Replacement Study Report - Report Writing
- Bridge Replacement Study Report - QA/QC
- Feasibility Study – Complete Cost Estimates for the various alternatives
- Feasibility Study - Additional Screening
- Feasibility Study - Constructability Review
- Feasibility Study - Risk Assessment
- Feasibility Study Report - Report Writing
- Feasibility Study Report - QA/QC

Contractor will develop a methodical, well documented screening process to investigate the alternatives, collaborating with the States to establish a shortlist of probable bridge alternatives. Contractor will conduct more detailed analysis of the shortlisted bridge alternatives (anticipate 3-5 alternatives will be shortlisted).

The shortlisted alternatives must support the Project Purpose and Need, considering key project goals and constraints, such as:

- construction schedule and staging
- navigation span requirements
- construction cost
- lifecycle cost
- environmental impacts
- traffic handling
- multi-modal use
- context sensitive design
- river and floodplain impacts
- bridge removal strategies
- permitting issues
- cultural resource issues
- aviation impacts
- roadway geometrics
- tie-ins on Minnesota approach, including impacts on Garfield Interchange
- tie-ins on Wisconsin approach, including development of intersection(s)
- future maintenance and inspection
- foundation considerations
- security and vulnerability
- pedestrian and bicycle accommodations
This alternatives analysis will include bridge and project cost estimates along with an assessment of risks. The level of accuracy of the cost estimates must be appropriate for planning-level analysis and decision making.

An appropriate level of engineering is expected at this phase to establish the geometrics, member sizes and impacts on other project elements.

Contractor will identify all feasible bridge alternatives, and conduct comprehensive evaluations of the three to five most cost-effective alternatives for Bridge No. 9030 to establish a basis for comparison and support for the selection of a preferred alternative.

The key points of consideration include those items listed above along with other project goals and constraints identified during the feasibility study phase. The expected outcome of this task is a Concept Evaluation Report which presents the shortlisted bridge options with associated scoping-level costs including the merits and disadvantages of each option and outlines a process for alternative selection.

Contractor will assess feasibility and generate graphics associated with approach roadway options, including sensitivity testing and additional scenario evaluation.

Specific tasks include:

- Develop Evaluation Criteria
- Concept Analysis - Refined analysis to develop advantages and disadvantages for:
  - Rehabilitation Alternative for Main River Spans and Approach Spans
  - Four Replacement Alternatives for Bridge 9030 – All spans
  - Rehabilitation Alternative for Approach Spans with Four Replacement Alternatives for Main River Spans
- Concept Analysis - Cost Estimates (See Section 4.0)
  - Cost estimates need to account for site; access, geotechnical, weather and hydraulic conditions.
  - Cost estimates involving re-use of portions of the existing bridge needs to account for rehabilitation work including provisions for further deterioration during time between study completion and start of work.
  - Cost estimates must be accurate enough for the states to determine the best alternative to advance.
  - Cost estimates must have an estimated construction duration for each concept.

- Concept Analysis - QA/QC
- Concept Evaluation Report

9.5 Deliverables

**Contractor will:**

1. Conduct a Bridge Feasibility Study.
2. Produce a Bridge Feasibility Study Report.
3. Conduct a detailed evaluation of the most promising and practical bridge alternatives.
5. Provide Bridge 9030 Rehabilitation Study review draft, draft, and final reports.
6. Provide Bridge 9030 Rehabilitation Study meeting agendas and minutes.

**State will:**
1. Provide project oversight and direction where appropriate.
2. Review and approve submittals in a timely manner.
3. Participate actively in project development and attend project meetings.
4. Provide past bridge inspection reports and load ratings for the bridge.
5. Provide results from Blatnik Bridge Technical Contract.
6. Provide Plans for future Blatnik Preservation Project (upon completion by others).

10.0 ALTERNATIVE SELECTION (Source Type 1140)

10.1 Alternative Selection (Rehabilitation or Replacement of Existing Bridge)
Contractor will facilitate all required discussions and workshops to select a preferred alternative for Bridge No. 9030 rehabilitation or replacement and the associated roadway approaches.

Contractor will integrate Concept Evaluation Report of the short-listed alternatives for evaluation in accordance with the NEPA process based on satisfying the Purpose and Need for the project, with consideration of meeting primary needs, secondary needs, other needs, total project cost, and other requirements concurrent with development of the EA (assumed for this project). Contractor will work with the States to coordinate and to lead 2-3 project workshops to formally select a preferred alternative and associated roadway alignment. This selection process must consider the environmental effects of each alternative before the selection is made.

10.2 Deliverables
Contractor will:
1. Facilitate/coordinate 2 - 3 alternative selection workshops.
2. Provide a detailed memo documenting the decision-making process for the preferred alternative selection. This will pertain to all roadway, interchange, drainage, storm sewer, signal, and lighting work. This will also include applicable standards required for the modes of freight transportation by land or water.

11.0 PRELIMINARY HYDRAULIC DESIGN RECOMMENDATIONS (Source Type 1141)

Contractor will provide analysis of the basic surface water management features for the proposed alternative. All drainage and receiving waters (lakes, wetlands, streams, county ditches) identified as a part of the preliminary environmental studies will be identified and considered.

Contractor will identify major water crossings and potential stormwater treatment locations. Contractor will provide mapping of surface water features for the State to review.

Contractor will collect and review all applicable data and permitting requirements relating to water resources. Prepare design criteria including regulatory standards and submit to State for review.

Contractor will perform a field walk to review existing conditions and prepare survey request.

Contractor will prepare existing conditions drainage area map, including available existing storm drain and culvert infrastructure, hydrologic boundaries, and surface flow direction.

Contractor will prepare hydraulic model of existing conditions for the bridge and existing impact roadways to use as a base line for the design of the proposed condition.
Contractor will determine potential stormwater BMP locations and sizes, (including preliminary grading sufficient to establish construction limits and right of way needs) as required to meet local and NPDES permit requirements. Discuss potential BMP locations with State staff.

Contractor will perform preliminary trunk line and culvert sizing sufficient to verify feasibility of BMP locations, drainage patterns, and roadway elevations. Does not include drafting of trunkline or culvert profiles.

Contractor will review soils and geological features and evaluate potential BMP locations for limitations to BMP types (infiltration in particular). Assess likelihood of impacts to groundwater.

11.1 Deliverables

**Contractor will:**

1. Provide an analysis of surface waters.
2. Identify potential stormwater treatment areas.
3. Collect water resources data and prepare design criteria.
4. Perform a field walk.
5. Prepare an existing conditions drainage map
6. Perform preliminary trunk line and structure sizing.
7. Discuss potential BMP’s and locations with State.

**State will:**

1. Provide project oversight and direction where appropriate.
2. Review and approve submittals in a timely manner.
3. Participate in field walk.
4. Meet to discuss BMP’s and locations.

12.0 ENVIRONMENTAL STUDIES (Source Code 1071 unless otherwise noted)

Contractor will follow all the process and subject guidance as outlined in MnDOT’s Highway Project Development Process Handbook (HPDP). An Early Notification Memorandum will be used by Contractor. Contractor will perform the required field studies in both states as noted herein and analysis needed for evaluation of the build/no-build alternatives, environmental documentation, and proposed mitigation. For each of these studies the information must be mapped, impacts assessed, proposed mitigation developed and a draft report prepared.

The information, by subject, will be reviewed by each State at each step in the process for concurrence. The following environmental studies will be conducted and used, along with other pertinent information, in the evaluation and decision making regarding alternatives, impacts and proposed mitigation. This list is only a sample, while a complete list of subjects will need to meet the scope and discoveries of the EA/EAW process.

12.1 Construction Impacts

Contractor, in conjunction with State and the appropriate Regulatory Agencies. No work will be done on this task until authorized by the State’s Project Manager.

12.2 Cost Effectiveness (Source Code 1003)

Contractor will prepare a Benefit/Cost (B/C) analysis of the alternatives identified for study. Contractor in conjunction with the states will develop a reasonable range of alternatives.
12.3 Groundwater and Geology
Contractor will assess project impacts related to geology and potential groundwater impacts.

12.4 Noise Analysis
Contractor will conduct a noise analysis in accordance with the Federal-Aid Highway Program Manual.

12.5 Social and Economic Impacts
Contractor will determine the social and economic impacts resulting from this project.

Contractor will conduct an Environmental Justice analysis which will include identifying, mapping and determining impacts to low income and minority populations in study area.

12.6 Water Resources and Wetlands
Contractor will identify and map water resources including surface water, floodplains, intermittent streams, drainage patterns and flows (watersheds) and wetlands in the project area. State will provide wetlands delineation.

Contractor will document the alternatives development and evaluation process, including wetland avoidance/minimization efforts, and least environmentally damaging practicable alternative (LEDPA) documentation.

Contractor will propose mitigation efforts for water resource and wetland impacts in accordance with state and federal rules and laws.

12.7 Land Use
Contractor will identify land use and zoning classifications along each possible corridor and analyze the potential impacts of each alternative on these use and classifications.

12.8 Section 4(f) and 6(f) Properties
Contractor will identify if there would be park, recreational, open space and Section 6(f) impacts associated with build alternative under consideration.

12.9 Historical, Archeological and Cultural Resources
State will conduct the historical, archaeological and cultural analysis, approve the Area of Potential Effect, and provide Contractor with results of the analysis for incorporation in the environmental document. Contractor will include Determination of Effect letters in the appendix of the document, and will summarize these letters in the text of the document. MnDOT Cultural Resource staff will coordinate with MnSHPO and WisSHPO as appropriate.

12.10 Migratory Bird Study
Perform a study of migratory bird patterns.

12.11 Wildlife, Fish and Vegetation
Contractor will determine the presence of these features or resources relative to the alternatives under consideration. Contractor will use existing data, supplement them with windshield survey (appropriate for the time of year) and map these features. Contractor will identify potential impacts and changes to these resources and features in collaboration with State, Minnesota Department of Natural Resources (DNR) and Wisconsin Department of Natural Resources.
12.12 Endangered and Protected Species
State will provide information suitable for analysis and discussion in the Contractor will complete this analysis in conformance with Highway Project Development Process (HPDP) handbook procedures. This will include obtaining DNR information concerning the likely presence of threatened/endangered species, and will require Contractor to coordinate with MnDOT’s Office of Environmental Stewardship (OES) in order to obtain a determination under Section 7 of the Endangered Species Act. OES will consult with the United States Fish and Wildlife Service as appropriate.

Mussels exist in the Harbor. State will provide a survey of mussels as needed.

12.13 Contaminated Properties and Regulated Waste
State will conduct Phase 1 and Phase 2 environmental investigation and provide reports to the Contractor.

12.14 Floodplains
Contractor will identify and map 100-year floodplains and determine potential impacts associated with each alternative.

12.15 Traffic Studies / Analysis
Contractor will develop all necessary traffic information for the EA/EAW.

12.16 Completed Farmland Conversion Impact Rating Form (AD1006)
Contractor will complete the Farmland Conversion form, if needed.

12.17 Indirect and Cumulative Impacts
Contractor will evaluate the build alternative potential indirect and cumulative impacts in accordance with Federal guidance. This task includes defining the area of secondary impacts and analyzing, past and current projects.

12.18 Other subjects as determined from the Early Notification Memorandum and EA/EAW processes.

12.19 Port of Duluth-Superior Operations and Schedules
Contractor to gather port operations information with enough detail to assist States with presenting alternatives to the United States Coast Guard for determination of the required Navigation Span Envelopes over the main channel, and back channel, including development of substructure locations, protective dolphin locations (if any), structure depth, profile grade and associated effects of any alternatives proposed in the EA/EAW. Profile grades must be developed particular to proposed span lengths and bridge types that are considered for various alternatives to be developed. Contractor will analyze effects and provide avoidance options, minimization techniques or mitigation strategies. State will lead process of obtaining Coast Guard Permit, based on a collaborative approach to determine the required navigation envelope(s), with all visuals and profile grades for various alternatives developed by the Contractor.

12.20 Port and Railroad operations and schedules
Contractor to gather port operations and rail information with enough detail to determine the effects of any alternatives proposed in the EA/EAW. Analyze effects and provide avoidance options, minimization techniques or mitigation strategies.
12.21 Deliverables

**Contractor will:**
1. Conduct the studies as indicated in this section.
2. Determine navigation spans and requirements.
3. With the technical groups, determine a reasonable number of alternatives to carry forward.

**State will:**
1. Provide project oversight and direction.
2. Review and approve submittals in a timely manner.
3. Provide wetland delineations
4. Provide Historical, Archeological and Cultural Resources analysis and agency review.
5. Provide Phase 1 and Phase 2 environmental investigation
6. Determine effects on visual resources by finalizing the visual impact assessment.
7. Provide a mussel survey.
8. Lead process of obtaining Coast Guard Permit with support from Contractor.

13.0 ENVIRONMENTAL ASSESSMENT WORKSHEET (EA/EAW) (Source Code 1071)

Upon completion of the Environmental Studies, States will verify the correct environmental document. It is assumed that this document will be an EA/EAW, but the Contractor must not proceed until verification of the document type is received.

After verification, Contractor will prepare an Environmental Assessment /Environmental Assessment Worksheet (EA/EAW) as outlined in the Highway Project Development Process Handbook (HPDP). This document will record the project decisions and request environmental clearances necessary for construction. This task includes the preparation of the draft EA/EAW review meetings, required revisions, preparation of the final EA/EAW printing and distribution of the approved EA/EAW, and notification in Minnesota Environmental Quality Board (MEQB) Monitor and local newspapers. The EA/EAW will be completed using summarized information from the environmental studies performed for this project.

13.1 Public Hearing

Contractor will plan, arrange meeting space, staff and conduct the Public Hearings as noted in Section 2.7. One public hearing in each state will be conducted. This includes preparation and printing of maps and graphics for display and handouts. The EA/EAW will be available for public viewing for a minimum of 15 days in advance of the public hearing. The Public Hearing will be held during the 30-day public review and comment period on the EA/EAW. Advertising will be coordinated with State. Contractor will arrange and pay for court reporters.

Following the Public Hearings, Contractor will prepare a transcript of the Public Hearing proceedings. A copy of the transcript and written statements received on the project will be made available to the public for inspections and copying after the comment period has expired.

Comments from the public hearings will be jointly considered by the states. Contractor will prepare responses to the public hearing comments.
13.2 Findings of Fact and Conclusions
Following the comment period on the EA/EAW, Contractor will prepare the Findings of Fact and Conclusions in accordance to the MnDOT HPDP Manual. The Findings of Fact will include:

- A summary of the steps taken in reviewing a proposed project in accordance with environmental review procedures.
- A summary of public and agency written comments on the EA and State response.
- A summary of issues raised through public involvement, including public hearings, and State's response.
- Conclusions, based on the findings, as to whether the project has the potential for significant environmental impacts which would require preparation of an Environmental Impact Statement. If the finding is that there is no potential for significant environmental impacts it will be concluded that feasible mitigation will be provided, an Environmental Impact Statement is not necessary and all environmental review requirements have been met.

This task includes the preparation of a draft Finding of Facts and Conclusions, required revisions, preparation of the final Finding of Facts, printing and distribution of the approved EA/EAW, and notification in MEQB Monitor and local newspapers.

13.3 Findings of No Significant Impact
Contractor will assist State staff in the preparation of the Findings of No Significant Impact

13.4 Deliverables

**Contractor will:**
1. Prepare the EA/EAW document.
2. Arrange and conduct the public hearing.
3. Prepare the Findings of Fact document
4. Prepare the Findings of No Significant Impact

**State will:**
1. Provide project oversight and direction.
2. Review and approve submittals in a timely manner.
3. Attend and participate in the Public Hearing
4. Assist with the preparation of the Findings of No Significant Impact

**SCHEDULE**

Kick off meeting ........................................................................................................within 2 weeks of NTP anticipate mid-May 2020
TAC meeting ............................................................................................................. initial meeting within 60 days of contract execution
Purposed and Need ...........................................................................................................December 2020
Draft Preliminary Geometric Layout ........................................................................February 2021
Preliminary Geometric Layout ....................................................................................April 2021
Bridge Feasibility Study ............................................................................................. October 2021
Bridge Alternatives Report ..........................................................................................February 2022
EA/EAW .........................................................................................................................April 2023
Findings of No Significant Impact ................................................................................June 2023
Final Delivery of all Phase 1 project documents ......................................................... October 2023