

EXHIBIT A: SCOPE OF SERVICES

For

**Main Street with 1st Avenue and 7th Avenue Intersections
Traffic Signal Replacement Design**

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Project Overview

This project will include the design of a replacement traffic signal system at the intersections of Main Street & 1st Avenue and Main Street & 7th Avenue, located in downtown Mitchell, South Dakota. Also included in this design project is the replacement of existing sidewalk pedestrian ramps at the two intersections, and installation of intersection street lights. The pedestrian ramps will be designed for replacement to be within ADA compliance.

The Consultant will prepare construction drawings for the installation of a replacement traffic signal system, replacement of the sidewalk ramps, as necessary, at the project intersections. Scope of engineering services provided by the Consultant will include identification of right-of-way (ROW) needs, traffic signal design including preparation of traffic signalization construction documents, ADA / PROWAG sidewalk ramp improvement design including preparation of sidewalk ramp improvement documents, preparation of project special provisions, supplemental unit cost form, and an opinion of probable cost. It is understood that the Consultant will prepare and the project Contractor, in collaboration with the City and equipment vendor, will implement the traffic signal timing/phasing information.

It is understood that the City will bid this traffic signal/sidewalk ramp improvement project as a stand-alone construction contract. The City will prepare the front end contractual documents and will assemble the construction bid package.

Following award of the project to the Contractor, the Consultant will provide construction phase services, include construction administration and construction observation.



1.0 PROJECT MANAGEMENT & MEETINGS

1.1 Project Management & Meetings

The project manager for the Consultant will be responsible for general coordination with the City regarding project activities, meetings, invoicing, and deliverables. This task includes up to two (2) review meetings (project kick-off and one other design coordination) involving two (2) representatives of the Consultant, as well as administration and coordination of the project tasks. It is anticipated that the kick-off meeting will occur in person including an in-field site visit with all meeting attendees. This task includes project team meetings and regular communications, as well as general day-to-day administrative tasks. Project Management includes development and execution of a project work plan, as well as quality control reviews of all deliverables. Monthly progress reports will also be prepared.

2.0 DATA COLLECTION

2.1 Survey

The Consultant will coordinate topographic survey collection for the project design area including the collection of property pins in the area using the City of Mitchell's horizontal and vertical controls. Survey extents shall generally extend to 50 feet beyond end of radius returns at each intersection corner. Survey will include all visible surface features within those extents – curb linework, intakes, sidewalk joint lines, poles & guy wires, trees, visible utility appurtenances, etc. The Consultant will also log a design ticket for utility marking via OneCall for locates with markings/flags that will be picked up as part of the survey fieldwork. Existing right of way lines will be established.

In addition, the Consultant will obtain from the City of Mitchell underground utility data in CAD or ArcGIS format, if available. The survey will be processed by the Consultant with MicroStation CAD files being made available to the design team to begin work.

2.2 Geotechnical Data

The Consultant arrange for a Subconsultant to obtain geotechnical borings and provide bearing capacities at each signal footing location for use in footing designs and as necessary to design pavement sections. Subconsultant will provide recommended pavement sections at each intersection and soil bearing capacities at each signal footing location.

2.3 Site Review

The Consultant will perform a site review to verify existing infrastructure and assure acquired topographic base CAD file information matches existing infrastructure (i.e. curb lines, medians, etc.). This site visit will review actual conditions in the field to improve the accuracy, thoroughness, and constructability of the design and plans. It is anticipated that the site visit will be held after initial progress has been made in the development of the design.

The site review will consist of a visual level review of existing conditions, including items such as existing overhead utility lines, potential power source location, signage, crosswalks, lighting, vegetation, pavement, sidewalks, ramps, and adjacent land uses.

3.0 PRELIMINARY DESIGN

3.1 Preliminary (60%) Traffic Signal Plans

The Consultant will prepare 1"=10' scale / color preliminary traffic signal plans for each of the project intersections. The preliminary plans will include: title sheet, general notes sheet, traffic signal layout sheet, conduit layout sheet, and traffic signal detail sheets. The traffic signal layout will include location of traffic signal poles, controller cabinet, proposed power service, conduit, and handholes. The traffic signal plans will be based on topographic CAD files created during the survey task.

Preliminary Plans shall be completed to provide the City the detail necessary to evaluate and budget for ultimate project improvement goals, as well as provide an understanding of property impacts. The following specific design items shall be included:

- Identify Right-of-Way needs
- Layout of new traffic signal poles, handholes, cabinet/controller, luminaire arms, and detection zones
- Identify signal head locations
- Preliminary intersection lighting layout
- Signal signage needs
- Pedestrian pushbutton and pedestrian signal head locations
- Identify power service connection location
- Identify any potential utility conflict
- Pavement marking and ground signage plan
- Preliminary Traffic Control needs
- Layout of sidewalk, including ADA compliant sidewalk ramp locations as required by traffic signal system construction
- Storm inlet and storm sewer relocation is not anticipated to be necessary and is not included in this scope of services

The traffic signal design will be based on the following assumptions:

- Existing traffic signal poles in each of the quadrants will be replaced;
- New traffic signal cabinet / controller will be installed (It is anticipated that the cabinet quadrant will be maintained);
- Existing power service connection will be utilized;
- Existing traffic signal related cabling/wiring, conduits, handholes will be removed/abandoned as necessary;
- The Consultant will identify right-of-way (ROW) needs;
- New traffic signal cabinet / controller will be installed;

- Existing overhead power lines/poles will remain as currently constructed; no utility relocation plan production (other than traffic signal power service) is included within this scope of services
- Existing pavement marking and ground mounted signing to remain as currently constructed, other than the following;
 - Pavement markings and signs directly impacted by the traffic signal replacement (i.e. crosswalk and stop bar pavement markings)
- New traffic signal related cabling/wiring, conduits, handholes will be installed as part of this project as necessary;
- Pedestrian push buttons and pedestrian signal heads will be included on the traffic signal poles in each of the quadrants. Use of stand-alone pedestrian push button and/or pedestrian signal poles is anticipated;
- New stock equipment will be used for proposed equipment;
- The City will collect intersection turning movement traffic counts at the project intersections. It is anticipated that the traffic counts will be conducted in Summer 2022. The Consultant will post process the City collected traffic data to determine peak hours, peak hour factors and heavy vehicle percentages, per intersection;
- Traffic signal fiber optic cable interconnection not included in design;
- The form of vehicle detection has not been established, however for the purposes of scoping is assumed to be accommodated via a loop-detection or a video-based detection system;
- The installation of emergency vehicle preemption (EVP) equipment is anticipated as part of this scope of services;
- Combination traffic signal/light poles will be used – including both traffic signal head mast arm and luminaire mast arm – Pole style/finish consistent with proposed aesthetics of corridor (galvanized). Luminaire mast arms to be included where possible with respect to overhead utilities.

The signal design will also include supplemental traffic signs to be installed as part of the traffic signal system. This includes but is not limited to street name signs, turn arrow plaques, and pedestrian signs.

The Consultant will prepare the project special provisions for the proposed traffic signal system. The special provisions will be modified from the City provided standard City special provisions.

The traffic signal wiring diagram, traffic signal quantities, and recommended traffic signal timings will not be completed as part of the 60% submittal.

3.2 Utility Coordination

The Consultant will submit preliminary documents to the City and affected utility companies for review and comment. A list of affected utility companies along with their contact information will be collected by the Consultant, with verification by the City. The Consultant shall coordinate utility relocation for conflicts with the project. This scope assumes 6 hours of Consultant time for utility coordination. Should additional effort become necessary, a supplemental agreement will be required.

3.3 Preliminary (60%) Sidewalk Ramp Improvement Plans

Based on the observations and results from the site visit, the Consultant will prepare a set of preliminary plans for sidewalk improvements. Preliminary plans will be submitted to the City for review.

3.4 Right-of-Way Plans

Consultant will develop right-of-way drawings for temporary easements as well as permanent right-of-way necessary to construct sidewalk/trail ramp improvements and traffic signal infrastructure. Existing right-of-way boundary locations will be based on survey data collected by the Consultant. Preliminary right-of-way drawings will be submitted to the City concurrently with the preliminary plans. Following receipt of City review comments, the Consultant will complete a final set of right-of-way plans to support the City's acquisition of easements and right-of-way.

The City will provide all services related to the acquisition of easements and right-of-way, including preparation of easement and right-of-way descriptions, plats, property owner contacts, etc. Consultant can provide these services, if requested, for an additional fee.

4.0 FINAL DESIGN

4.1 Check Plans

The Consultant will prepare Check Plans for submittal to the City. Check Plans will include:

- Title sheet
- Estimated quantities tabulations, estimate reference notes,
- Right-of-way
- Traffic Signal Sheets:
 - Traffic signal general notes sheet,
 - Traffic signal layout sheet,
 - Traffic signal wiring diagram,
 - Traffic signal phasing diagram,
 - Traffic signal detail sheets, and
 - Traffic signal specific quantities sheets.
- Lighting Sheets
 - Lighting general notes
 - Lighting layout sheet (assumed to be located on signal poles)
 - Lighting wiring diagram assumed to be part of Traffic Signal Wiring Diagram
- Sidewalk Sheets:
 - Sidewalk ramp modifications
 - Sidewalk/trail ramp details

The project special provisions as prepared as part of the preliminary design will be revised as necessary. In addition, the Consultant will coordinate with the local utility company on power supply to the proposed traffic signal system. Power service coordination will remain

at a high level with the intent that the project Contractor will be responsible for final coordination power service details.

Conducting turning movement counts at the project intersections is not included in the Scope of Services. The City will provide traffic count information. Opening day signal timings/phasing plans will be provided by the Consultant and will be based on available traffic count information provided by the City.

Clearance interval yellow and red time information will be provided for each of the traffic signal timing plans (AM, PM, and Off-peak) and will be based upon methodology available within Chapter 10 of the ITE Traffic Control Devices Handbook (2nd Edition, 2013). Pedestrian timings will be included within this Scope of Services.

The Consultant will develop an engineer's opinion of probable construction cost for the intersection traffic signal and sidewalk ramp improvements and will prepare the supplemental unit cost form.

4.2 Final Plans

The Consultant will incorporate City review comments into the plans, estimates and special provisions; and provide signed and sealed documents to the City for bidding purposes.

4.3 Front End Documents

The City will prepare the front-end contractual documents and will assemble the construction bid package.

5.0 PERMITTING AND PRE-LETTING

5.1 Permitting

Completion and filing of applicable project permits will be completed by the City. This includes necessary permits to be filed with any and all utility companies. The scope assumes zero (0) Consultant hours for this task.

5.2 Pre-Letting

The Consultant will provide responses to pre-letting questions from the City.

6.0 CONSTRUCTION PHASE SERVICES – CONSTRUCTION ADMINISTRATION

6.1 Construction Administration

After award of the construction contract, the Consultant shall perform the following construction administration services:

1. **Pre-construction Conference** - The Consultant shall conduct a pre-construction conference for the project with the Contractor, City and all interested parties to review the contract requirements, details of construction, utility conflicts and work schedule. The Consultant shall prepare and distribute meeting minutes for the conference.

2. **Shop Drawings** - The Consultant shall review and coordinate approval of Contractor Submitted shop drawings with the City. The Consultant will coordinate transfer/review of shop drawings with the Contractor.
3. **Design Interpretation Questions** - The Consultant shall answer design interpretation questions from City, Contractor and review agencies.
4. **Project Status** - During the Construction Services Phase, the Consultant shall confer with the City to report project status.
5. **Contractor Payment Requests** - The Consultant shall assist the City with the preparation of progress payment applications based upon its review of construction progress by on-site observation, and make a recommendation to the City for payment of the appropriate amount for work completed since the last payment application. Prior to the preparation of a payment application, the Consultant shall review all material testing and certifications on the project and only recommend payment for items that have acceptable material documentation on file.
6. **Change Orders** - The Consultant shall assist the City with the preparation of change orders for approval of the City prior to Contractor's start of work under the change order.
7. **Final Inspection and Punch List; Final Acceptance** – The Consultant shall coordinate and conduct two walk-through inspections with City: first inspection in August 2023 to determine if the work is substantially complete, and a second inspection in September 2023 to determine if the work is finally complete. With input from the City, the Consultant shall prepare a project completion punch-list for the Contractor if needed. On the basis of such inspection, the Consultant shall determine if the project is substantially complete according to the plans and specifications and shall make a recommendation to the City regarding final payment. It is understood that the City will accept the project only after recommendation by the Consultant.

7.0 CONSTRUCTION PHASE SERVICES – CONSTRUCTION OBSERVATION

7.1 Construction Observation

The Consultant shall provide the following Construction Observation services:

1. **Onsite Inspection** - The Consultant shall make periodic visits to the site at intervals appropriate to the stage of construction and not less than two times per week, or as otherwise agreed by the City and Consultant in writing, to provide field observation to ascertain the progress and quality of the work completed and to determine if the work is being performed in accordance with the Contract Documents. However, the Consultant shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work. It is understood by the Consultant that Consultant presence at the site during all times of Construction is not included as part of this scope of services. Construction Observation services do not include responsibility for construction means, controls, techniques, sequences, procedures or safety.

2. **Records** – Consultant will keep a record or log or diary of Contractors activities throughout construction, including notation on the nature and cost of any extra work or changes ordered during construction. The Consultant shall include in the record or log or diary at a minimum the following records:

- Contractor’s hours on the job site.
- Weather conditions.
- Information and data relative to questions of change orders or change conditions.
- List of job site visitors.
- Daily activities, decisions, and observations.

3. **No Waiver** - If the Contractor requests a waiver of any provisions of the plans and specifications, the Consultant will make a recommendation on the request to the City for its determination. No waiver shall be granted if such waiver would serve to reduce the quality of the final product. The City shall never be deemed to have authorized the Consultant to consent to the use of defective workmanship or materials.

4. **Testing and Monitoring** - The Consultant will arrange for a Subconsultant to perform subgrade and material testing per SDDOT Materials Manual Specifications. The Consultant will coordinate the testing and monitoring with Subconsultant during construction of the project.

5. **Notification of Nonconformance** - On the basis of on-site observations as a design professional, the Consultant shall keep the City informed of the progress and quality of the Work and shall guard the City against defects and deficiencies in the Work. The Consultant shall notify the City of any work which is unsatisfactory, faulty, defective, incomplete or does not conform to the Contract Documents, advise and recommend action required to correct or complete such unsatisfactory, faulty, defective or incomplete work and, at the request of the City, see that these recommendations are implemented by the Contractor.

6. **As-Built (Record) Drawings** – The Consultant will prepare construction record drawings defining the actual location of improvements and fixtures. Prepare record drawings showing those changes made during construction, based on the marked-up drawings and other data furnished by the Contractor and the Consultant construction observer. Provide the City with the following deliverables:

- One (1) reproducible 11x17 paper copy of the record drawings;
- One (1) PDF copy of the Plan Set with redline markups.

8.0 DELIVERABLES, SCHEDULE, CITY RESPONSIBILITIES

8.1 Deliverables

The following items are considered deliverables as part of this contract.

- Preliminary (60%) Plans, color PDF format
- Check Plans, color PDF format
- Final Plans, color PDF format

- Special Provisions
- Opinion of Probable Construction Cost
- Supplemental Unit Cost Form
- Preconstruction meeting notices, agenda, and minutes
- Copies of observation and site visit notes; weekly report of work activities; quantity measurements and tabulations; records or logs or diaries; and construction-related reports (e.g. concrete testing)
- Punch-list at Substantial Completion
- Punch-list at Final Completion
- Engineer's Certificate of Completion
- Record drawings
- Monthly invoices and progress reports

8.2 Schedule

Assuming approval of this agreement on or before March 7, 2022, the following schedule is anticipated:

- Consultant Selection to Council: March 7, 2022
- Preliminary Plan Submittal to City: July 7, 2022
- Final Design Complete: November 1, 2022
- Project Letting: January 2023
- Construction Complete: September 2023

This schedule was prepared to include reasonable allowances for review and approval times required by the City and other public authorities having jurisdiction over the project. This schedule shall be equitably adjusted as the project progresses, allowing for changes in the scope of the project requested by the City or for delays or other causes beyond the control of Consultant.

8.3 City Responsibilities

It is understood the City will complete the following tasks or have the following responsibilities:

- Prepare and obtain construction easements and right-of-way plats for acquisitions, if required
- To review and provide input on the Consultant's design plans in a timely manner
- Provide general specifications and "front end documents" for the contract documents
- Make payments for engineering services within 30 days of receiving an acceptable invoice
- Advertise and solicit bids
- Provide traffic counts
- Provide available utility information in GIS format

8.4 Items Not Included in this Scope of Services

- Traffic counts
- Travel Demand Modeling



- Traffic Signal Warrant Evaluation
- Intersection Sight Distance Review/Documentation
- 3D visualization/exhibits
- City council meeting attendance/preparation
- Public information meetings/engagement
- Lighting Photometric Analysis (lighting will be located appropriately on traffic signal poles)
- Public Interest Finding (PIF) memorandum coordination/preparation
- Storm sewer or inlet relocation design
- Storm drainage calculations

SUMMARY OF COSTS					
Net Labor		\$ 91,332.00			
Total Labor Hours	556.00				
Total ODC Including Markup		\$ 2,128.00			
Total OCC Including Markup		24,300.00			
Subtotal		\$ 117,760.00			
Management Reserve	5%	5,888.00	Design	Bidding	Construction Services
Total Project Cost		\$ 123,648.00	\$ 66,509.60	\$ 2,360.00	\$ 54,778.40