

**Exhibit A - Scope of Work**  
**West Chicago/44th Street Preliminary Intersection Design**

Based on the City of Rapid City's Request for Proposals, dated January 5, 2001, following is a brief outline of the tasks that comprise our proposed work program.

Task 1 - Site Reconnaissance/Data Collection

The purpose of this task will be to gain sufficient understanding of the project area to allow for the development and evaluation of the full range of intersection improvement alternatives.

We will conduct a site visit and obtain available data from Rapid City, including:

- Base mapping
- Traffic counts
- Existing traffic control
- Existing right-of-way
- Accident histories

Year 2025 daily and peak hour traffic forecasts will be developed using existing traffic information and growth factors included in the Rapid City Long Range Transportation Plan as a basis.

Our site visit will be combined with a coordination meeting with you and other City staff, as appropriate, to discuss project history, City objectives, and initial concepts.

Task 2 - Concept Development and Evaluation

*Initial Screening:* Based on the understanding of the project gained in Task 1, we will develop preliminary concept sketches for the full range of potential alternatives. We will conduct, in coordination with City staff, a preliminary screening of the full range of alternatives for fatal or serious flaws. This screening will result in a "short-list" of the most viable alternative concepts. Without placing a limit on the number of alternatives that may be deemed viable and worthy of further evaluation, it is anticipated that the short-list may include in the range of three to six alternatives.

*Final Evaluation:* We will develop a set of evaluation criteria, in coordination with City staff, and will evaluate alternatives against each criterion. In addition to qualitative evaluations, technical evaluations will include level of service analysis with existing and forecasted traffic volumes, peak hour queuing analysis, and planning-level opinions of probable cost. Based on these evaluations, a preferred alternative (or phased alternatives) will be selected.

*Documentation/Coordination:* Our initial recommendation is that we would prepare a Concept Evaluation Report (5 copies) at this stage in the project, summarizing the first two tasks and the selection of the preferred alternative. We will also prepare an executive summary of the Concept Evaluation Report (15 copies) for use by the City Council members. After initial staff review, we would recommend that the Presentation to Council included in the RFP be conducted to receive Council concurrence on the concept selection. In this scenario, we would receive Council concurrence on the selected concept before completing the Task 3 Preliminary Design.

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Task 3 - Preliminary Design

This task will involve additional design detail, although at a preliminary design level, of the selected concept.

*Base Mapping*

We will use the preferred intersection improvement alternative developed in Tasks 1 and 2 as the basis for developing the preliminary traffic signalization and geometric plans. As noted previously, that work will detail physical intersection improvements such as curb and gutter, sidewalk, curb ramps, median, signing and striping, etc. We will use this information to prepare a base map at a 1"=20' scale.

*Traffic Signalization Design*

We will develop a preliminary traffic signalization plan for the West Chicago/44th Street intersection, including the number and geometry of proposed traffic lanes (lane width, length of turn bays, etc.), pavement markings, and signage. We understand that, depending upon the outcome of the alternative intersection analyses, it may be necessary to also signalize the western portion of West Chicago. The plans will identify all of the anticipated signal hardware locations such as pole, controller cabinet, detectors, conduit, street lights and pull boxes; however, at a preliminary design stage, it is likely not necessary to identify underground utilities, or power source or communication locations. We anticipate that the installation will be the mast arm type; however, we have experience in both mast arm and span wire installations. We will also prepare a preliminary construction traffic control plan for the selected design concept. We will submit preliminary plans to the City for review and will incorporate review comments into the plans.

*Traffic Signal Interconnection*

We understand that it may be necessary to assist the City in developing timed-based coordination signal timing plans to coordinate this intersection and the Sturgis/West Chicago intersection. We can assist the City in that regard if existing signal timing plans and traffic volumes at the Sturgis/West Chicago intersection can be provided.

*Modern Roundabout Design*

If the modern roundabout alternative is selected as the preferred alternative, we will prepare preliminary design plans, including curb and gutter, diverter islands, pedestrian/bicycle crossing locations, signing, and striping. We have recent experience in preparing modern roundabout plans at this level of detail.

*Cost Estimating*

Provide an Opinion of Probable Cost based on current bid prices from the South Dakota Department of Transportation and on recent projects in which you may have been involved. If information is not available from these resources, we will use similar information from the Colorado Department of Transportation and from signalization projects in which we have been involved.