



June 29, 2017

Mr. Bruce Loney, PE
Public Works Director/City Engineer
City of Shakopee
129 Holmes Street South
Shakopee, MN 55379-1376

Re: Extension Agreement for Professional Services
Estimate of Cost to Provide Engineering Services
Vierling Drive Connection from Taylor Street to County Road 69

Dear Mr. Loney:

Introduction:

According to our Agreement for Professional Services within the City of Shakopee and Section I-C-2 (Major Projects), this extension agreement is written to provide you with an estimate of cost for engineering services for the above-referenced project. We are proposing to complete the work as detailed in the attached Scope of Design Services, Exhibit A and Scope of Construction Administration/Survey Services, Exhibit B. WSB & Associates, Inc. (WSB) is very familiar with the project with our work on the MnDOT Municipal Agreement Application we prepared for this roadway segment back in 2012.

Background:

One of the important factors for the construction of this final segment of Vierling Drive to the west is this Vierling Drive connection will provide a local reliever and parallel route to TH 169 from CR 69 to Eagle Creek Boulevard. Currently, if an accident were to occur on TH 169, which causes lane restriction or roadway closure, there isn't a reasonable nearby alternative to TH 169 through the City of Shakopee. Completing the Vierling Drive connection also provides a route for area residents to utilize local streets providing greater accessibility to their homes. Long term, the connection will provide for additional collector route access to the Shakopee Town Square shopping center.

The Vierling Drive connection is from Taylor Street West to County Road 69. The approximate 1,000 foot connection will provide a local roadway paralleling TH 169 from County Road 69 to Eagle Creek Boulevard. The Vierling Drive connection is understood to be four lanes to match the current roadway section. Turn lanes will also be provided at CR 69 and at the access into the Shakopee Town Square shopping center. Pedestrian / bicycle facilities will also be provided to match the existing roadway section with sidewalk on the north side of the roadway and trail on the south side of the roadway.

Scope of Services:

The attached scope of design services describes the approach and tasks proposed to be completed by WSB for street and utility design for this project. The work plan includes engineering design services for roadway, storm sewer, sanitary sewer and water main, signing and striping, traffic control, trails, removals, erosion control, street lighting and conduit crossing plans. The work scope also includes project coordination and topographic surveying.

We understand that no feasibility report will be required for this project and no fee estimate was provided for this work in our proposal. We are proposing to complete the final design portion of this work as described in the attached Scope of Design Services, Exhibit A, on a cost-reimbursable basis in accordance with our current fee schedule. It is proposed that all work under the final design portion of the contract would be considered complete after the preconstruction conference. We will review our progress monthly and will not exceed these amounts without your prior approval.

WSB is available to provide construction services if the City desires assistance. These would be part of a separate contract with the City. WSB typically provides construction survey and would be available for inspection as well.

Engineering Design Services Fees:

ITEM	COST
FINAL DESIGN SERVICES	\$128,078
EXPENSES (PERMITS, SURVEY, LATH, ETC.)	\$1,750
TOTAL	\$129,828

Please see the attached Work Plan and Estimate of Cost for a detail breakdown of the estimated hours for this project.

We are available to begin work as soon as authorized by the City, and we anticipate we will complete the project according to the following schedule, assuming that we receive the notice to proceed on July 19, 2017.

We propose to complete the project according to the following tentative schedule:

Council Approves Extension Agreement and Authorizes Design	July 18, 2017
Commence Final Design Work	July 19, 2017
Submit Plans to MnDOT, City and SPUC for review	August 18, 2017
Ready to Approve Plans and Authorize Bids	August 15, 2017
Open Bids	September, 2017
Award Contract	October, 2017
Begin Construction.....	October 9, 2017
Substantially Complete Construction	November, 2017
Final Wearing Course / Complete Construction.....	May, 2018

This letter represents our entire understanding of the project scope. If you are in agreement, please sign on the space provided and return one original signed copy to us for our records. We will start immediately upon receipt of the signed agreement.

If you have any questions concerning the work plan or fee as discussed herein, please feel free to contact me at 763-287-7189. We look forward to working with you and greatly appreciate the opportunity to assist you and your staff in the completion of this project.

Sincerely,

WSB & Associates, Inc.



Donald W. Sterna, PE
Vice President

Enclosure

City Administrator

Mayor

Date

**Scope of Design Services
Vierling Drive Connection from Taylor Street to County Road 69
City of Shakopee**

WORK PLAN

1. Project Management

This task includes planning and coordination of all work tasks, establishment and monitoring of budgets, meetings and correspondence with the City of Shakopee, MnDOT, Scott County, SPUC and if necessary, the Watershed District on a periodic basis. The project manager will provide technical direction on all aspects of the project review, all work products and prepare monthly progress reports. The project manager will serve a primary role in the many design considerations. Donald Sterna, PE, is proposed to manage the project for WSB & Associates, Inc. (WSB).

2. MnDOT and County Agency Coordination

WSB will prepare and submit the funding application to MnDOT for the Local Road Improvement Program. WSB will also coordinate with Scott County regarding the intersection design at CR 69 including permit coordination with the County. Coordination with both agencies will be required throughout the design process for agency approvals.

3. Geotechnical Evaluation

WSB team proposes to drill 3 soil borings to a depth 5 foot depth below the lowest City utility elevation. The field investigation will include an estimated R-Value that will be used to establish the pavement design. Additional soil boring information required for infiltration testing required for design will be considered additional work which is not included in this proposal. A brief geotechnical report will be prepared summarizing the geotechnical findings.

4. Utility Coordination

WSB will call in a Gopher State One design locate and from that, identify all utilities in the area. We will make contact with those utilities to obtain facility mapping along with establishing our contact to discuss future utility plans. Based on the preliminary layout, utility conflicts will be identified and design measures will be considered to accommodate these conflicts. The cost for these utility conflicts, if any, will be identified and included as part of the overall cost estimate.

5. Preliminary Layout and Cost Estimate

WSB will collect topographic and utility information along the project corridor that will be utilized in the final design. WSB will collect record plans from the City of Shakopee, Scott County, SPUC and private utility companies as necessary, to prepare the construction documents. WSB will prepare the base mapping of the existing conditions that will be used for the design. A preliminary layout of the project and 30% cost estimate will be prepared along with a hydraulic evaluation to determine pond, rate control and infiltration requirements that the project. Also the proposed sanitary sewer and water main systems will be laid out and shown on the 30% layout. WSB will work with the City to finalize the preliminary layout before the final design will begin.

6. Roundabout Justification Report (RJR)

WSB will prepare a Roundabout Justification Report (RJR) for submission to the City and MnDOT State Aid for approval. The following subtasks will be completed in the preparation of the RJR:

6.1 – Data Collection: Available data will be collected from Scott County, the City of Shakopee, MnDOT and other impacted agencies. This data will include but is not limited to:

- Historic traffic and pedestrian data
- As built roadway plans
- Intersection and corridor crash data

This task will include collecting new traffic volume data at the intersection of Vierling Drive and the Shakopee Town Square access with a video camera and counting tubes. 48 hours of data will be collected at the intersection. The information that will be determined from the data will include; AM, PM and midday peak hour traffic volumes, average daily traffic volumes, vehicle classification, pedestrian/bike volumes and speed data. In addition, WSB will review the camera data and note any safety and/or operational issues at the intersection.

6.2 – Roundabout Justification Reports (RJR): WSB will prepare a Roundabout Justification Report (RJR) for a potential new roundabout at Vierling Drive and the Shakopee Town Square access driveway for submission to the County and MnDOT State Aid for approval. This will include:

- Documentation of the existing traffic conditions
- Project future traffic volumes for the adjacent sites
- Documentation of crash data for the intersection
- Conduct operational analyses of existing and projected traffic conditions using the Synchro/SimTraffic and Rodel computer software for the roundabout configuration
- Justification analysis

The RJR analysis together with the data collected in Task 6.1 will be assembled in the RJR format required for submission to MnDOT State Aid.

7. Roundabout Design

WSB will complete the roundabout design based on the results of Task 6, regarding lane configuration and following the design guidelines as indicated in Chapter 12 of the MnDOT Road Design Manual and NCHRP 672. The roundabout will be designed to accommodate the design vehicle and all necessary performance checks, such as fast path and phi angle, will be completed during the preliminary design of the roundabout. It is assumed up to three iterations of the roundabout configuration will be developed. Once a final configuration is agreed upon, WSB will design the vertical component of the roundabout. This includes the profiles leading to the roundabout and the longitudinal slope around the roundabout. The roundabout will be modeled to tie into the existing topography, and construction limits will represent those tie in points.

WSB will develop a lighting configuration near and within the roundabout to State Aid guidelines. A photometrics layout will be generated to ensure proper lighting of the intersection.

8. Final Design and Plan Preparation

The construction plan phase involves the majority of our design effort. The plans will be developed meeting City and State Aid standards. WSB will prepare a set of detailed construction plans for the grading, sanitary sewer, water main, surface drainage, paving, signing/striping and erosion control in accordance with City standards. We will coordinate our work closely with the City of Shakopee, SPUC and Scott County during the design process to ensure that the City's expectations are satisfied. Design meetings will be held, as appropriate, to discuss design elements and comments during the design process. A final set of plans will be submitted to the MnDOT, City, SPUC and Scott County for their review and approval. The final construction plans will include the following:

- Title Sheet and Index Map
- General Layout
- Estimated Quantities
- Typical Sections
- Miscellaneous Details
- Construction Staging/Traffic Control Plan
- Alignment Plans and Tabulation
- Removals
- Construction Plan and Profile
- Roundabout Plans and Details
- Drainage Plan, Details and Quantities
- Water Main/Sanitary Sewer Plans
- Turf Establishment/Erosion Control Plans
- Roundabout Lighting
- Signing and Striping Plans
- Cross-Sections

9. Drainage Analysis

From the previous plans, the roads within the site will be an urban design with storm sewer. With partial installation of the facilities already complete, an analysis of the roadway drainage area will be conducted to determine its existing condition and if additional special stormwater management or ponding needs are required. This analysis would verify the flow rates and determine what water quality and/or rate control will need to be designed for the roadway portions of the project. This analysis would include catch basin spacing, per City requirements, infiltration, pond designs, pipe and sizing of all storm sewers under the roadway.

10. Permits

Permits will be acquired as part of the construction plan preparation. WSB will prepare and apply for the necessary construction permits. The cost of the permits would be paid by the City of Shakopee. The permits we anticipate that will be necessary for this project are:

- MPCA – NPDES Construction Stormwater General Permit
- MPCA – Sanitary Sewer Extension Permit
- MDH – Water Main Extension Permit
- Lower Minnesota Watershed District Permit Coordination

11. Project Bidding

Upon approval of the bidding documents by the City, WSB will sell and distribute the necessary number of plan and specification sets to the contractors for bidding. The City will be responsible for the expenses of the plan and specification printing. The bid tabulation will be done by the City.



Estimate of Cost

VIERLING DRIVE Connection from Taylor Street to CR 69 IMPROVEMENTS
SHAKOPEE , MINNESOTA
SCOTT COUNTY

629/2017

PRELIMINARY, DETAIL DESIGN and R/W	Estimated Hours									Cost
	Project Manager	Senior Project Engineer	Design Engineer / Senior Tech	Engineering Tech	Grad Eng Engineering Tech	Registered Land Surveyor	Survey Crew 2- Person	Clerical	Total Hours	
Task Description										
1 PROJECT MANAGEMENT / MEETINGS										
1.1) Administration	32	6	4					4	46	\$7,118.00
1.2) Quality Assurance/ Quality Control	2	8	12						22	\$3,112.00
2 MnDOT and COUNTY COORDINATION										
2.1) MnDOT Coordination	8	6		4				4	22	\$2,926.00
2.2) Scott County Coordination	4	6						1	11	\$1,628.00
3 GEOTECHNICAL EVALUATION (WSB Engineering)										
3.1) Soil Borings (3 Total at 20 foot depth)					(WSB Engineering)					\$2,250.00
3.2) Laboratory Testing					(WSB Engineering)					\$850.00
3.3) Engineering Analysis and Reports					(WSB Engineering)					\$1,750.00
4 UTILITY COORDINATION										
4.1) Utility Coordination (2 meetings)	1	6						1	8	\$1,118.00
5 PRELIMINARY LAYOUT										
4.1) Prepare MnDOT Preliminary Layout & Drainage Design	2	2	16	20					40	\$4,862.00
4.2) Preliminary Cost Estimate	1	2	12						15	\$2,060.00
4.3) Field Survey	1		6			1	18		26	\$4,211.00
4.4) Base Mapping Preparation			2		6				8	\$836.00
6 Roundabout Justification Rport (RJR)										
6.1) Data Collection	1		4		20				25	\$2,602.00
6.2) Roundabout Analysis and Justification	2		16		40			6	64	\$6,664.00
7 Roundabout Design										
7.1) Roundabout Geometrics and Profile Design	2	48	16	6					72	\$10,154.00
7.2) Roundabout Lighting	1	16	8	6					31	\$4,216.00
8 FINAL DESIGN AND PLAN PREPARATION										
8.1) Final Plans, Specifications, and Estimates										
A. Title Sheet			2	1					3	\$371.00
B. General Layout			3	1					4	\$504.00
C. Statement of Estimated Quantities	2		4	4					10	\$1,292.00
D. Soils and Construction Notes			4	2					6	\$742.00
E. Earthwork Summary and Standard Plates	1		2	4					7	\$856.00
F. Typical Sections	1		6	8					15	\$1,808.00
G. Quantity Tabulations			4	6	4				14	\$1,542.00
H. Utility Tabulations	1		2	4	2				9	\$1,046.00
I. Miscellaneous Details			4	4					8	\$952.00
J. Standard Plan Sheets			2	2					4	\$476.00
K. Traffic Control Plans	1		4	6					11	\$1,332.00
L. Alignment Plans and Tabulations			6	4					10	\$1,218.00
M. In-Place Topography and Utilities		4	6	6					16	\$2,016.00
N. Removal Plans and Tabulations			6	6	4				16	\$1,808.00
O. Construction Plan Sheets	4	2	40	16	6				68	\$8,544.00
P. Roadway Profile Sheets	1	4	18	20	6				49	\$5,822.00
Q. Drainage Plans and Profiles		4	24		6				34	\$4,350.00
R. In-Place Drainage Tabulation			4		4				8	\$912.00
S. Proposed Drainage Tabulation			6		4				10	\$1,178.00
T. Temporary Erosion / Sediment Control Plans			6	4	2				12	\$1,408.00
U. Turf Establishment and Permanent Erosion Plans			6	4	2				12	\$1,408.00
V. Lighting Design			6	4					10	\$1,218.00
W. Signing and Striping Plan			6	4					10	\$1,218.00
X. Detailed Cross-Sections			24						24	\$3,192.00
8.2) Plan Submittals	2		12		6				20	\$2,506.00
8.3) Develop Cost Estimates	1		16						17	\$2,298.00
8.4) Specifications	2	24						4	30	\$4,132.00
9 DRAINAGE DESIGN										
9.1) Catch Basin Spacing	1	4	12					1	18	\$2,420.00
9.2) Storm Sewer Design	1	6	32						39	\$5,308.00
9.3) Water Quality/ Pond Design	1	2	12						15	\$2,060.00
9.4) Hydraulic Report Preparation		2	6						8	\$1,092.00
10 PERMITS										
10.1) Permit Application (NPDES)		4	6						10	\$1,386.00
10.2) Wetland Evaluation			6						6	\$798.00
10.3) MCES Sanitary Sewer Permit		2	2						4	\$560.00
10.4) MPCA and Dept. of Health		2	2						4	\$560.00
11 PROJECT BIDDING	6	8	4					10	28	\$3,388.00
Total Hours	82	168	401	146	112	1	18	31	959	\$128,078
Average Hourly Billing Rates	170.00	147.00	133.00	105.00	95.00	147.00	172.00	66.00		
Detailed Design Labor Costs	\$13,940	\$24,696	\$53,333	\$15,330	\$10,640	\$147	\$3,096	\$2,046		\$128,078
Direct Expenses										
Miscellaneous Expenses includes permit fees.	MPCA Sewer Extension, Department of Health, Scott County and NPDES									\$1,750
Subtotal Expenses										\$1,750
Subtotal Labor and Expenses										\$129,828

Key Personnel by Category:

Project Manager - Don Serna

Project Engineer - Marcus Vanderbrug

Design Engineer/Senior Techs - Ted Witkowski, Chuck Kochmann