



BOLTON & MENK, INC.

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August 23, 2016

Mr. Aaron Parrish
City Administrator
1408 Lake St S
Forest Lake, MN 55025

RE: TH 97 and 8th Street/Goodview Avenue Intersection Control Evaluation Study Proposal

Dear Mr. Parrish,

Per the request of the City, we have prepared the following scope of services to study the TH 97 and 8th Street/Goodview Avenue intersection. We propose to study the intersection by process of the formal MnDOT Intersection Control Evaluation (ICE) to develop recommendations guiding future investments in this location to improve safety and operations.

This study will examine the intersection in detail to determine existing issues and deficiencies as well as anticipated issues with no improvements made as traffic changes in the future. Traffic volumes, turning movements, pedestrian connectivity, and crash history will be evaluated to identify the most appropriate intersection configuration and traffic control. The ICE process will culminate with a recommended improvement along with a planning level concept and cost estimate.

SCOPE

Task 1 – Agency/Public/Stakeholder Involvement

Involving the public and key stakeholders will be important to project success and acceptance. Our goal is to involve stakeholders and the public in different manners throughout the process and receive feedback at various stages.

- Project Management Team Meetings – Up to eight meetings will be held with Bolton & Menk, the City, and MnDOT to provide study updates and discuss results. These meetings will occur at most one time per month and will be scheduled on an ongoing basis throughout the project duration.
- Public Information Meeting – One public open house will be held during the project to share updates and project information. The meeting will also be utilized to gather information and opinions of members of the public impacted by the intersection.
- School District Coordination – Up to two coordination meetings with school officials will be held throughout the project to receive input and share information.
- City Council Workshop – Our team will discuss results of the ICE study and recommendations at a City Council Workshop.

Task 2 – Data Collection

- Turning Movements - Intersection turning movement counts will be collected at this location for a 13-hour period (6am-7pm) of a normal working day (Tuesday/Wednesday/Thursday). It is imperative that counts are collected on a day when school is in session and construction detours are not impacting traffic and trip distributions at the study location. These counts will include pedestrians, bicyclists, heavy vehicles, and passenger vehicles.
- Crash History – Our team will gather crash data for the most recent three full years at the study intersection.

Task 3 – Existing Intersection Review

- Traffic Operations – Traffic operations will be reviewed for the AM, PM, and afternoon school release peak periods to understand existing issues. Measures utilized will include but are not limited to delay, queuing, and level of service. Operations will be modeled using Trafficware Synchro/SimTraffic.
- Intersection Safety – Using the crash history obtained, we will identify trends in the data and determine the critical indices for total crashes and severe crashes at the study location. A crash diagram will be prepared to show a graphical illustration of the data.
- Pedestrian Movements – The intersection will be analyzed to determine current pedestrian connectivity, crossing locations, and typical delays.

Task 4 – Analysis of Alternatives

The study will analyze up to five alternatives for the intersection of TH 97 with 8th/Goodview. The six proposed alternatives are as follows:

- “Do-Nothing”
- Two-Way Stop Control
- All-Way Stop Control
- Traffic Signal with Roadway Realignment/Skew Reduction
- Roundabout
- Reduced Conflict Intersection/Partial Access

The analysis will include both a crash analysis to determine impacts of the alternatives as well as an operational analysis to determine impacts to the measures of effectiveness used.

The operational analysis will include looking at the existing year and a 20-year forecast. Projected year volumes will be based on formally accepted forecasted volumes in the City of Forest Lake 2030 Comprehensive Plan, other local planning efforts, and historical growth trends. Highway Capacity Manual methodologies will be utilized to analyze the roundabout alternative. A check using ARCADY roundabout analysis software will be completed if the roundabout is anticipated to approach capacity.

A warrant analysis will also be completed to determine which alternatives are warranted through traffic volumes and other considerations as discussed in the Minnesota Manual on Uniform Traffic Control Devices.

Pedestrian connectivity, delay, and crossing safety will be analyzed along with each intersection alternative. Alternatives for pedestrian crossings include at-grade as part of the intersection treatment or grade-separated either by bridge or underpass. Soil conditions and the location of the water table will be evaluated as well to determine if an underpass is a viable option.

Task 5 – Concept Drawings and Cost Estimates

For each of the alternatives with the exception of “Do-Nothing”, concepts will be drawn on aerial imagery and will consist of only 2-dimensional analysis. The level of detail will be sufficient to determine a planning level cost estimate. The right-of-way needs will be determined based on GIS parcel lines with costs developed using a 2x factor of the estimated market value.

Task 6 – ICE Document

The ICE document will follow the standard outline developed by MnDOT as detailed in Tech Memo No. 07-02-T-01. A draft version will be distributed for project management team review prior to finalizing. Up to three paper copies will be printed and bound.

Task 7 – Municipal/Cooperative Agreement Funding Application

Develop and submit an application for funding through the cooperative agreement program to implement an improvement to the trunk highway system as a local municipality.

Task 8 – Geotechnical Study (By Others)

Determine soil and groundwater information relative to potential pedestrian grade-separation improvements (bridge or underpass) at the study intersection. This includes two borings and two piezometers to indicate soil type information and groundwater elevations as well as a reporting summarizing all analysis completed.

SCHEDULE

We recommend the following schedule for this assessment:

- Task 1: October 2016 – June 2017
- Task 2: October 2016
- Task 3: November 2016
- Task 4: December 2016
- Task 5: January 2017 – February 2017
- Task 6: February 2017 – April 2017
- Task 7: April 2017– June 2017 (Municipal/Cooperative Agreement funding application due)
- Task 8: November 2016 – June 2017 (By Others – monitoring may extend past completion of the study)

The schedule can be adjusted to reflect a later notice to proceed. We anticipate this project requiring a minimum of five to six months for completion, largely depending on the timing of activities within Task 1.

FEES

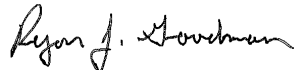
Bolton & Menk will provide the services to complete the tasks outlined above on an estimated hourly basis in accordance with our approved hourly rate schedule for an estimated total fee of \$54,900. Any work required outside of this scope shall be authorized by the City prior to furnishing additional services.

Task	Work Task Description	Task Total
1	Agency/Public/Stakeholder Involvement	\$ 11,500
2	Data Collection	\$ 1,500
3	Existing Intersection Review	\$ 2,000
4	Analysis of Alternatives	\$ 4,500
5	Concept Drawings and Cost Estimates	\$ 7,000
6	ICE Document	\$ 5,000
7	Municipal/Cooperative Agreement Funding Application	\$ 5,500
8	Geotechnical Study (By Others)	\$ 17,900
	Total Estimated Fee	\$ 54,900

We appreciate the opportunity to provide this proposal. Please feel free to contact us with any questions or comments regarding the services proposed herein.

Sincerely,

BOLTON & MENK, INC.



Ryan J. Goodman, P.E.
City Engineer