

PROPOSAL

Prepared for:

Mankato/North Mankato Area
Planning Organization (MAPO)

Prepared by:



ALLIANT

March 20, 2020



INTERSECTION CONTROL EVALUATION (ICE)

Lor Ray Drive and James Drive,
North Mankato, MN



March 20, 2020

Charles Androsky
Transportation Planner
Mankato/North Mankato Area Planning Organization
✉ candrosky@mankatomn.gov

ALLIANT

733 Marquette Ave Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
www.alliant-inc.com

Re: MAPO ICE Study Proposal

Dear Mr. Androsky and Members of the Selection Committee:

The stop-controlled intersection of Lor Ray Drive and James Drive in North Mankato experiences high traffic volumes and peak hour congestion, with volumes forecast to grow more than 30% by 2045. In combination with overall mobility and growth challenges in the region, these factors suggest the need for the Intersection Control Evaluation (ICE) identified in the Mankato/North Mankato Area Planning Organization (MAPO) 2020 Unified Planning Work Program (UPWP). The purpose of the ICE is to develop potential solutions that will address traffic, safety and multimodal needs while being consistent with the context of this location.

As a leading traffic and transportation engineering firm in Minnesota with experience conducting ICE studies around the state, Alliant Engineering, Inc. is excited to share with you our specific approach to addressing the needs at this location. Simply put, we believe our combination of skills and experience will deliver a better experience and better outcomes. Highlights of our unique strengths and value include:

- **Experienced Project Manager:** Project manager Scott Poska, PE, PTOE, is a key member of Alliant’s traffic engineering staff. Scott knows MAPO and area stakeholders and how to deliver a streamlined cost-effective study that meets your needs. While with a previous firm, Scott managed both the 2016 and 2017 ICE studies for MAPO.
- **ICE Study Depth:** Our team has successfully completed not just one or two but dozens of intersection control evaluations that have similar project goals, challenges and potential solution types. We bring best practices and efficiency to address the needs at this intersection.
- **Integrated Approach:** The Lor Ray/James Drive intersection does not exist in a vacuum and neither does our approach. While addressing operations and safety needs, we’ll also incorporate land use and multimodal needs along with stakeholder input to develop an effective, context sensitive solution.

Our team would love to work with staff from MAPO and stakeholders from the Policy Board, Technical Advisory Committee, and the City of North Mankato to conduct this study. Please contact Scott Poska at 612.767.9369 or sposka@alliant-inc.com for questions about our proposal. Thank you for your consideration.

Sincerely,
Alliant Engineering, Inc.

Scott Poska, PE, PTOE // Project Manager

Michael R. Anderson, PE, PTOE // Principal




CONTACT INFORMATION

Scott Poska will serve as the Alliant Project Manager and will be the first point of contact responsible for project administration, coordination, and project delivery.

Scott Poska, PE, PTOE

 612.767.9369

 612.758.3099

 sposka@alliant-inc.com

Alliant Engineering, Inc.

733 Marquette Avenue, Suite 700

Minneapolis, MN 55402

PROPOSAL OUTLINE

The proposal is organized as requested in the RFP:

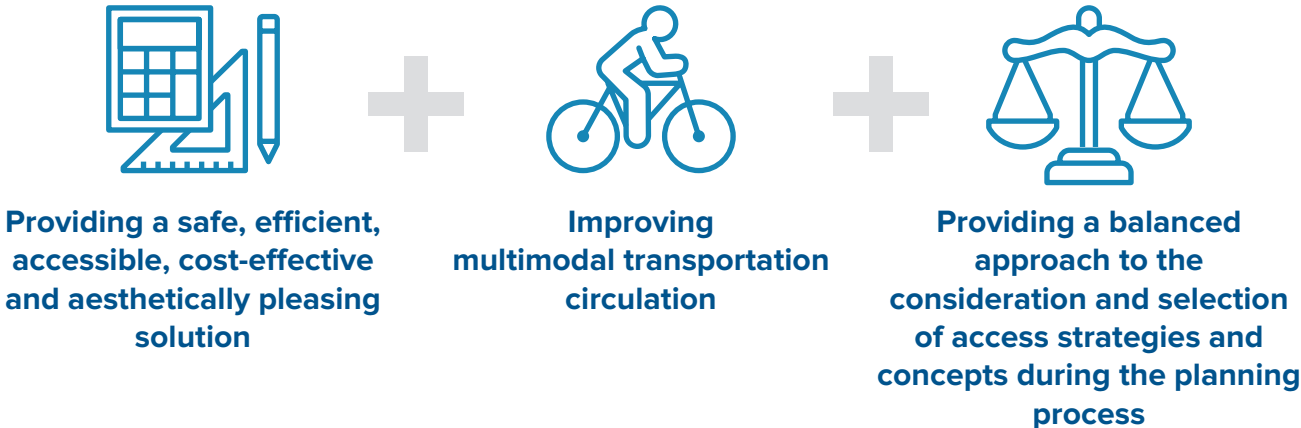
- Project Understanding
- Project Approach
- Background and Experience
- Key Personnel
- Work Plan, Deliverables and Schedule
- Project Budget
- References
- Completed Forms
- Appendix
 - Project Sheets
 - Detailed Résumés
 - Completed Forms



PROJECT UNDERSTANDING

The Mankato/North Mankato Area Planning Organization (MAPO) is seeking professional services to conduct an intersection control evaluation (ICE) study at the intersection of Lor Ray Drive and James Drive in North Mankato, MN.

The purpose of the project is to identify the appropriate traffic control device along with the optimal intersection geometrics. Selection of the recommended alternative will be based on an objective evaluation of traffic operations, safety, cost, right-of-way impacts, multi-modal circulation, local acceptance and other objectives to be determined by the project team. Our scope of services is tailored to meet MAPO’s key objectives to facilitate and implement the community transportation goals, and to improve the transportation facility by:



The ICE will be prepared cooperatively by and between the Consultant, the public and MAPO staff. It will be consistent with MnDOT ICE procedures, including MnDOT ICE Guidelines for Implementation, MnDOT ICE Technical Memorandum No. 07-02-T-01, and the MnDOT ICE Manual. The process needed to complete the ICE includes two phases – Phase 1 scoping and Phase 2 detail alternative analysis. The scoping phase (Phase 1) will include the evaluation of the existing conditions, documentation of issues and deficiencies, and an evaluation of various potential traffic control devices (e.g., all-way stop, traffic signal, roundabout, etc.). The recommended alternatives from the scoping phase will be advanced to the detailed alternatives analysis phase (Phase 2) where conceptual layouts will be developed to estimate construction costs and right-of-way needs, as well as additional traffic operations/safety analysis to complete a decision analysis matrix. The decision analysis matrix will ultimately support the project recommendations that will be documented in the ICE report.



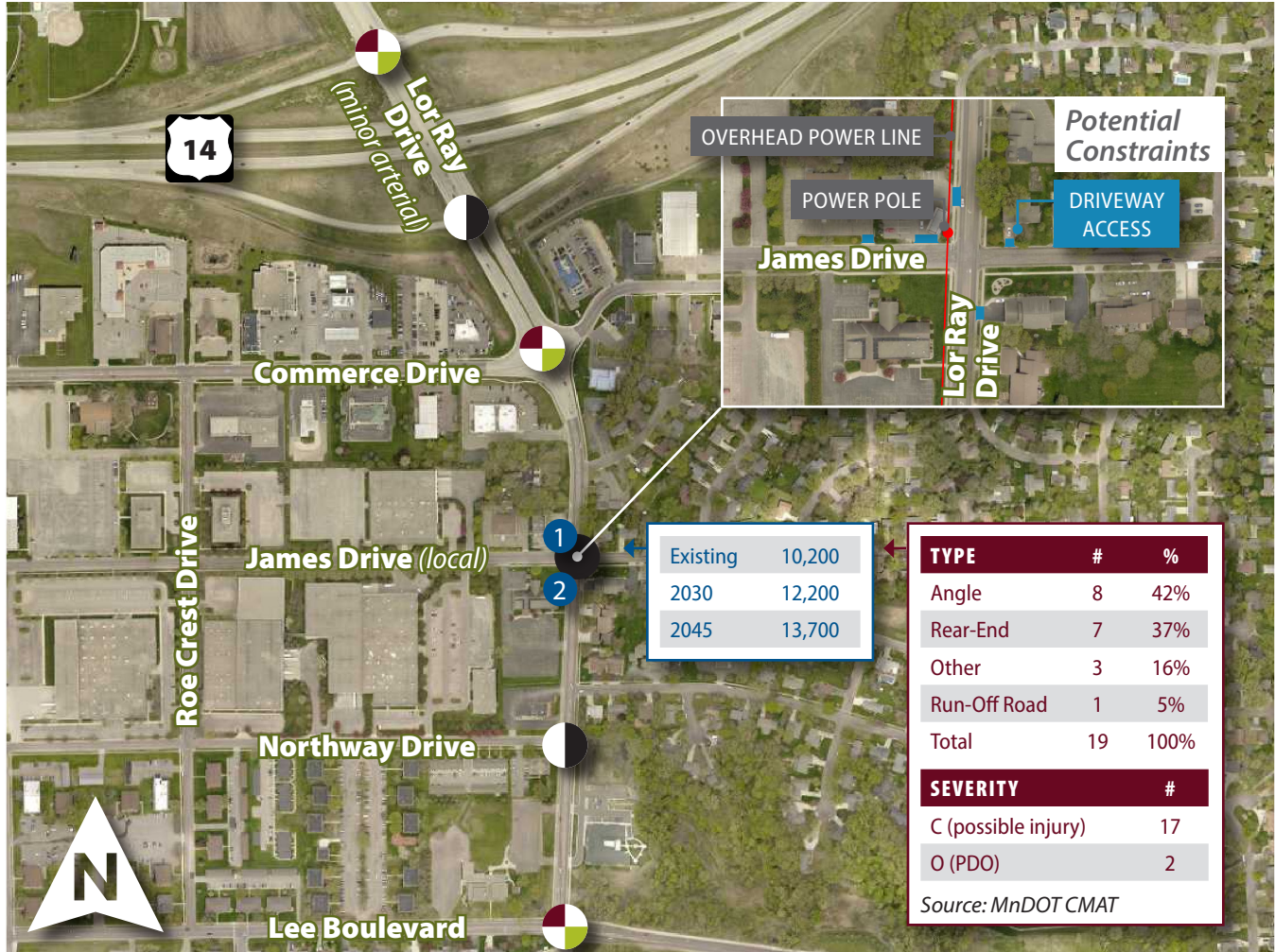
The Lor Ray Drive/James Drive intersection is currently all-way stop controlled and experiences high volumes of traffic generated by industrial, commercial, and residential land uses, particularly during peak periods. The purpose of the ICE study is to examine a range of alternatives through review of existing traffic operations and safety. The ICE will develop recommendations for potential future intersection improvements.

Figure 1, and the following, illustrate important study area characteristics and considerations:

- **Compatibility with the MAPO 2045 Long Range Transportation Plan.** Lor Ray Drive currently has a three-lane undivided cross-section, and James Drive has a two-lane undivided cross-section. Per the 2045 LRTP, no change in the roadway cross-sections is anticipated. The existing and forecast ADT are well within the acceptable capacity range of a three-lane roadway. Any potential intersection alternative must consider compatibility with the existing roadway cross-sections.
- **Traffic Control Selection.** An objective analysis of the key decision factors, including traffic operations, safety, transportation system considerations, bicycle and pedestrians, local acceptance, and right-of-way will need to be made to clearly communicate the pros and cons of each intersection alternative.
- **Mobility and Safety Considerations** will be paramount in the ICE process.
 - Lor Ray Drive serves as a minor arterial roadway providing north/south connectivity throughout much of North Mankato.
 - Traffic operations are of concern, particularly during morning and afternoon peak periods.
 - While the existing intersection generally exhibits crashes of only low severity, any future intersection improvements must not introduce new crash issues.
- **Multimodal Considerations.** Evaluation of sidewalks, bicycle connections and crossing treatments will be an important consideration in the analysis of potential future intersection alternatives.



FIGURE 1. STUDY MAP



LEGEND

- X,XXX Lor Ray Drive Traffic Volumes (from MAPO LRTP)
- X,XXX Crash History (2010-2019)
- Signalized Intersection
- All-way Stop Intersection
- Thru/Stop Intersection

1 Intersection Constraints/ Considerations

- Close proximity of access - consider access consolidation
- ADA compliant pedestrian ramps/ facilities
- Utility impacts and proximity to overhead transmission lines
- Residential properties on northeast and southeast corners
- Tight right of way - approximately 66'

2 Multimodal Constraints/ Considerations

- Bike route on street along Lor Ray Dr
- 2040 level of service (LOS) on Lor Ray Dr of E (north of James Dr) and D (south of James Dr), worse than existing conditions
- No scheduled bus route at this intersection
- No sidewalk on north side of James Dr (east of Lor Ray Dr)



PROJECT APPROACH

The keys to our approach are outlined in the paragraphs below and the study process we will follow is illustrated in **Figure 2**. A detailed work plan is included later in the proposal.

Project Management and Coordination

Working with the MAPO Project Manager, a Technical Advisory Committee (TAC) will be formed to provide input during the project. Two in-person TAC meetings will be held: the first at project kickoff and the second upon submittal of the draft ICE report. Additional phone/web conferencing and email correspondence will occur as needed throughout the project process. Furthermore, Alliant will attend two additional in-person meetings: a North Mankato City Council meeting and a MAPO Policy Board meeting to present the ICE methodology, findings, and recommendations.

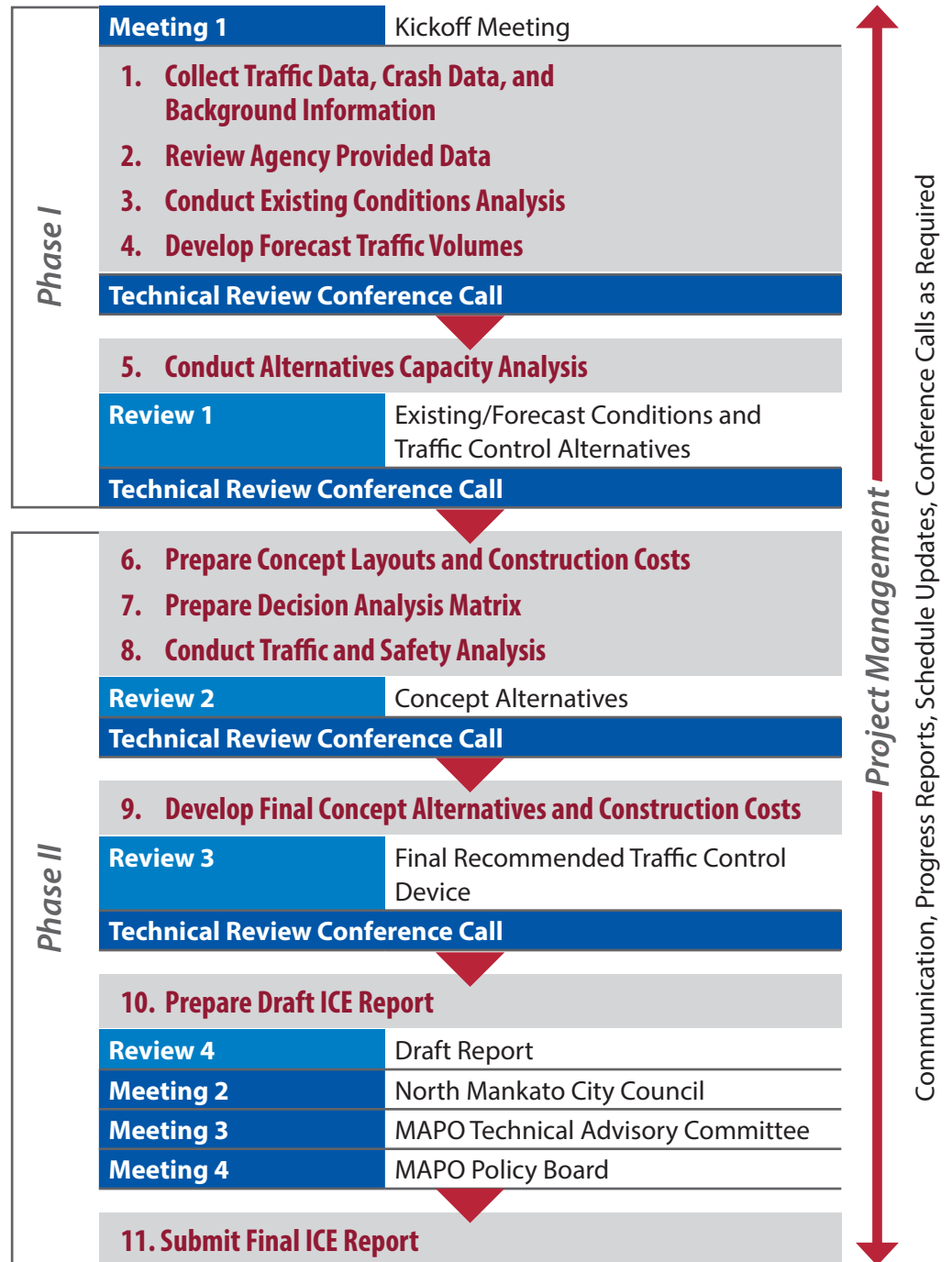
The project kickoff meeting will help to finalize the goals and objectives for the study intersection. Phone/web conferencing and email correspondence will be utilized to review the existing intersection analysis, preliminary operations analysis of potential future intersection alternatives, concept layouts, decision analysis matrix, safety analysis, and final concept alternatives and construction costs. The study process, conclusions and recommendations will be presented at a North Mankato City Council meeting and a MAPO Policy Board meeting at their regularly scheduled dates/times. Alliant's Project Manager will be in close contact with the MAPO Project Manager throughout the project. As noted in our study process outline, we have identified several logical review periods that correspond with our project deliverables. This process ensures all TAC members are engaged in the process and consensus on the study recommendations is built throughout the study. Alliant's Project Manager will be available via phone/email as necessary to address all project issues.

Quality Assurance

As Project Manager, one of Mr. Poska's primary responsibilities will be to ensure that Quality Control procedures are being followed by conducting Quality Assurance audits. The Alliant Quality Control Manual includes specific steps for coordination between disciplines, independent technical reviews, constructability reviews, and procedures for tracking revisions to a deliverable.



FIGURE 2. STUDY PROCESS OUTLINE





Project management starts at day one and continues until the project is successfully completed. Mr. Poska will ensure Alliant's quality control process is followed. In addition, all major deliverables will go through Alliant's quality review process before submittal to MAPO.

Project Management Technique

A successful project requires great project management. Our cohesive team approach and hands-on management style allows us to efficiently complete projects while providing a high level of quality. At the core of our approach is open, honest and timely communication with the MAPO PM and TAC. Communication is the key to project success. Mr. Poska has managed numerous ICE studies, including several for MAPO while at a previous employer, and understands the challenges and project goals. Our project approach and scope of work have been refined over the years to incorporate strategies we have found to be successful (e.g., pencil sketch alternative exhibits). Our team will prepare for, attend and lead all meetings required to successfully deliver the project. We have identified phone/web and in person meetings at project decision points to ensure that project resources are allocated to the proper assumptions, design decisions and intersection alternatives. Key project management strategies include:

- Bi-weekly status check-ins with the MAPO Project Manager to discuss project issues, needs and technical requirements.
- Maintaining a current project schedule and providing regular updates as necessary.
- Appropriately allocating staff resources to the project tasks to control project costs and meet the defined project budget.
- Manage project discussion to control the project scope.
- Provide advanced submittal of agenda and materials to the TAC prior to the meetings so adequate review, discussion and decisions can be made.
- Providing timely submittal of meeting minutes and action items identified at the TAC meetings.

Field Observations and Traffic Data – Phase 1

Our team will conduct a comprehensive field evaluation of the intersection to observe peak hour traffic conditions and document all intersection geometric, access, drainage and other characteristics that will be critical to the study. To support this effort, the following information to be provided by the agencies (if available) would be valuable:

- Aerial imagery and planimetric maps (if available);
- Utility and right-of-way records (if available);
- As-built roadway design plans (if available); and
- Any other forecasting information and studies other than the 2045 LRTP relating to future land use plans or other relevant data.

Information contained in the above documents will be reviewed and included in the ICE study.



Existing Conditions and Forecast Traffic Volumes -Phase 1

Alliant will conduct an existing conditions analysis that includes field observations, traffic operations analysis, and a safety analysis. Intersection traffic volumes will be collected via video camera at the study intersection. Video will be recorded on a typical weekday when all public, private and college schools are in session. A signal warrant analysis will be conducted based on the MnMUTCD and MnDOT ICE procedures. In addition, consideration will be given to input and intersection issues provided by MAPO and the City of North Mankato. The measures of effectiveness (MOE) will include intersection movement delay, level of service and queue length. In consultation with the 2045 LRTP, peak hour forecasts will then be developed for the design year. Hourly approach volume forecasts will also be prepared for the signal warrant analysis.

Traffic forecasts will include any known or planned land developments that may influence the traffic characteristics at the intersection as defined in the 2045 LRTP, or other previous studies completed in the area.

Alternatives Operations Analysis and Pencil Sketches – Phase 1

A traffic operations analysis of future conditions will be conducted, including an analysis of the no-build condition. Alternatives will be analyzed to identify the optimal geometric improvements required for each traffic control option (including all-way stop, traffic signal, roundabout, etc.). For comparison, the MOE tabulation will include intersection movement delay, level of service and queue length. A planning level roundabout capacity evaluation will be completed to assess the need for one lane versus two lanes of approach and circulating lanes prior to detailed analysis. Alliant will utilize Synchro/SimTraffic modeling software for the signalized and stop-controlled intersection analyses. VISSIM modeling software will be utilized to analyze the potential roundabout configuration.

The alternatives operations analysis will screen potential traffic control/lane geometric options. As appropriate, pencil sketch alternatives will be developed for TAC discussion. The pencil sketch alternatives have been found useful to cost-effectively convey multiple potential options prior to moving into detailed conceptual layout development. Upon conclusion of this effort, recommended alternatives will be moved forward to the detailed alternatives analysis phase for conceptual design.



Conceptual Design, Decision Matrix and Selection of Recommended Alternative – Phase 2

Once the primary options are identified for the study intersection, Alliant will develop high-level concepts on aerial for alternative intersection configurations and traffic control designs. Based on the results of the Traffic Control Device Alternatives Analysis, up to two intersection concepts may be developed, which may include roundabouts, turn lane additions, and/or signalization. These alternatives will attempt to achieve the correct balance of improved operations and safety versus right-of-way impacts, local business site access, construction costs, long range transportation planned improvements, and other impacts. Multimodal considerations will be made in the design process to effectively integrate pedestrians and bicycles. A decision matrix will be prepared that evaluates the alternatives versus key objectives such as warrants, operations, safety, impacts to right-of-way, cost, transportation system considerations, local acceptance, political considerations and environmental impacts. Planning level construction costs will be developed.

A final conceptual layout will be prepared for the recommended alternative based on input from the TAC. Right-of-way impacts (if any) will be estimated. The final preferred layout will include site access considerations/circulation recommendations, and pedestrian/bicycle features.

Draft and Final ICE Study Report – Phase 2

A draft and final ICE report will be prepared for the study intersection, documenting the study process, alternatives analysis and recommendations.

List of Deliverables

Project Management

- Monthly progress and status reports
- Maintain up to date project schedule
- Submit timely invoices and progress reports
- Prepare agendas, handouts, minutes and facilitation of project meetings.

Existing and Future No Build Conditions Analysis

- Peak hour turning movements and hourly approach volumes for the existing, construction and future horizon years.

Traffic Control Alternatives Analysis

- Intersection operations analysis MOE
- Pencil sketch intersection alternatives



Concept Layouts and Evaluation

- Up to two high-level conceptual layouts (Microstation CAD files)
- Planning level cost estimate for each alternative.
- Traffic control device decision analysis matrix
- Electronic intersection analysis files (Synchro/SimTraffic and VISSIM)

ICE Reports

- Draft and Final ICE Study Reports – two bound hard copies and one electronic PDF version and one Word document version.

BACKGROUND AND EXPERIENCE

Based in Minneapolis, Minnesota, Alliant offers consulting services for transportation, land development, land surveying and environmental studies. Alliant provides a full range of services in order to serve our client's needs from the planning stage, through design, to completion of construction. Alliant's transportation services include roadway design, traffic engineering, transportation planning, and ITS. Over the last 20+ years, Alliant's Transportation Group has completed corridor studies, intersection studies and worked on many large-scale, complex transportation projects. Through our work we have been dedicated to providing safe and efficient corridor and intersection solutions appropriate for the context of each location.

Alliant offers proven experience in the core disciplines needed for the success of the MAPO ICE Study; including:

- Traffic Forecasting and Operations Analysis
- Intersection Control Evaluation
- Concept Layout Development
- Integration of Pedestrians and Bicycles
- Roadway Safety Analysis
- Signal Warrant Analysis
- Construction Cost Analysis
- Agency and Project Coordination
- Right-of-Way, Utility and Drainage

Table 1 lists similar ICE studies and other relevant projects performed by Alliant. **Table 2** highlights several of these projects, which exemplify our ability to develop the optimal solutions to address a wide range of traffic operations and safety problems. **Additional relevant project examples are provided in the Appendix.**



TABLE 1. RECENT EXPERIENCE MATRIX

Relevant Project	Location/ Client	Stakeholder Engagement	Traffic Safety and Operations Analysis	Signal Warrant Analysis	Traffic Forecasts/Planned Development	Geometric/Access/Traffic Control Alternatives	Cost Estimates/ Comparison Matrix
Glenwood Street Corridor and Safety Study	Duluth, MN/St. Louis County	◆	◆	◆	◆	◆	◆
CSAH 42 and 27 Area Traffic Study	Savage, MN/Scott County	◆	◆	◆	◆	◆	◆
TH 194/Midway Rd Intersection Control Evaluation	Hermantown/MnDOT D1		◆	◆	◆	◆	◆
CR 64 Corridor Study and ICE	Farmington, MN/Dakota County		◆	◆	◆	◆	◆
MN 220 Corridor Study	Grand Forks (GF), East Grand Forks (EGF)/GF EGF MPO	◆	◆	◆	◆	◆	◆
Lexington Avenue Reconstruction	Shoreview, MN/Ramsey County	◆	◆	◆	◆	◆	◆
Rice Street Corridor Study	St. Paul, MN/Ramsey County	◆	◆		◆	◆	
MnDOT District 1 - Districtwide ICE Reports (9 Intersections)	MnDOT D1		◆	◆	◆	◆	◆
MnDOT District 6 - Districtwide ICE Reports (8 Intersections)	MnDOT D6		◆	◆	◆	◆	◆
CSAH 9 ICE Feasibility Study	Lakeville, MN/Dakota County		◆	◆	◆	◆	◆
East Grand Forks Street Network Study	East Grand Forks, MN/GF EGF MPO	◆	◆	◆	◆	◆	◆
Old Shakopee Road / Cedar Avenue	Bloomington, MN/City of Bloomington	◆	◆		◆	◆	◆
Washington Street Corridor Study	Grand Forks MPO	◆	◆	◆	◆	◆	◆
US 2/TH 89 ICE	Bemidji, MN/MnDOT D2	◆	◆	◆	◆	◆	◆
TH 212 at CSAH 1	Glencoe, MN/MnDOT D8	◆	◆		◆	◆	◆
Bygland Road Study	Grand Forks, ND/GF EGF MPO	◆	◆	◆	◆	◆	◆
Bygland Road at Rhinehart Drive ICE Study	East Grand Forks, MN/GF EGF MPO	◆	◆	◆	◆	◆	◆
TH 73 at CSAH 10 ICE Study	Moose Lake, MN/MnDOT D1	◆	◆	◆	◆	◆	◆
TH 71 at Industrial Boulevard ICE Study	Park Rapids, MN/MnDOT D2	◆	◆	◆	◆	◆	◆
Xerxes Avenue/106th Street ICE	Bloomington, MN/City of Bloomington, MN	◆	◆	◆	◆	◆	◆



TABLE 2. PROJECT EXPERIENCE EXAMPLES

TH 194/Midway Rd Intersection Control Evaluation	Glenwood Street Corridor and Safety Study
<p>Alliant worked with the Minnesota Department of Transportation and Saint Louis County to perform an intersection control evaluation of the TH 194/Midway Road (CSAH 13) intersection in Hermantown. A significant crash severity issue had plagued the study intersection for years. MnDOT and St. Louis County desired an improvement that reduced the frequency of severe crashes while maintaining the existing efficient intersection operations. Analysis included estimating current and future intersection operations and crash rates over multiple potential traffic control alternatives and intersection reconfiguration scenarios. The analysis was summarized in a concise alternatives evaluation matrix to aid selection of the preferred alternative by MnDOT and Saint Louis County. A roundabout was ultimately recommended to address safety concerns by minimizing the risk of high-severity right-angle crashes, provide access to nearby private driveways, and maintain efficient operations well into the future. The planned roundabout is currently scheduled for constructed in the year 2022.</p>	<p>Alliant worked in partnership with the City of Duluth and Saint Louis County to complete a corridor safety study for a 1-mile segment of Glenwood Street between Snively Road (CSAH 37) and 43rd Avenue. General concerns were raised by Duluth residents regarding vehicle speeds, lane geometry, signing, and bicyclist/pedestrian safety along Glenwood Street. Additionally, specific concerns were raised regarding safety at the Glenwood Street/South Ridge Road & Skyline Parkway offset-T intersections. Alliant provided seven geometric and two non-geometric improvement alternatives for these offset-T intersections. The study included an ICE report at the western end of the corridor to address operational delay at Snively Road.</p> <p>Alliant facilitated a presentation and Q/A session to update the public on which alternatives were vetted for short- and long-term implementation. Ultimately, the study recommended short-term implementation of back-to-back dedicated left-turn lanes along the mainline between the offset-T intersections. The preferred long-term vision included side-street realignment to form a more traditional 4-leg intersection with possible roundabout control pending a detailed engineering feasibility analysis.</p>
<p>Relevance to Project</p>	<p>Relevance to Project</p>
<ul style="list-style-type: none"> • ICE Study • Traffic Safety & Operations Analysis • Signal Warrant Analysis • Traffic Forecasts/Planned Development • Geometric/Access/Traffic Control Alternatives • Cost Estimates/Comparison Matrix 	<ul style="list-style-type: none"> • ICE Study • Stakeholder Engagement • Traffic Safety & Operations Analysis • Signal Warrant Analysis • Traffic Forecasts/Planned Development • Geometric/Access/Traffic Control Alternatives • Cost Estimates/Comparison Matrix
<p>Reference</p>	<p>Reference</p>
<p>MnDOT D1 Jim Miles james.miles@state.mn.us 218.725.2789</p>	<p>City of Duluth Taryn J. Erickson, PE tjerickson@duluthmn.gov 218.730.5087</p>



TABLE 2. PROJECT EXPERIENCE EXAMPLES (CONTINUED)

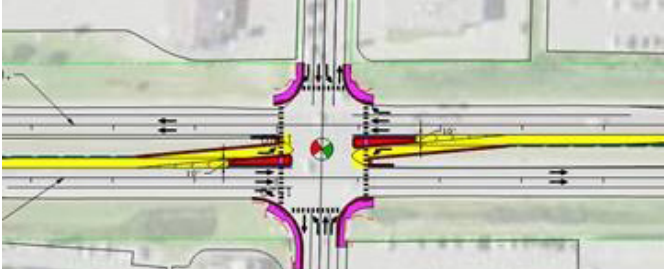



MnDOT District 1 ICE Studies	District 8 ICE Study
	
<p>MnDOT hired Alliant to conduct intersection control evaluation (ICE) studies at seven locations around MnDOT District 1 at locations in Two Harbors, Virginia and several others. Many of the ICE reports and concept layouts were developed in advance of programmed construction projects. At each location, the Alliant team analyzed existing conditions, conducted traffic forecasts, developed and evaluated a range of potential solutions, and worked with stakeholder so arrive at preferred solutions. Each project had a unique context with respect to traffic operations, safety issues, multimodal needs and opportunities, and land use and related constraints and context considerations. Preliminary concepts were developed and evaluated across key objectives, pros/cons, and design considerations. Working with the stakeholders, preferred alternatives were identified. Alliant developed final concept layouts, construction cost estimates, safety and operation benefit, and completed an economic analysis. Draft and final ICE reports for each intersection were developed and approved.</p>	<p>The study intersections of US 212 and CSAH 1 (Glencoe, MN) and US 71 at 37th Avenue (Willmar, MN) have been experiencing a noticeable crash history. Crash rates are in excess of the statewide average and nearly double the statewide severity rate.</p> <p>Alliant prepared an Intersection Control Evaluation (ICE) report for each location that developed and evaluated 8 pencil sketch conceptual alternatives at each location for discussion with the key stakeholders (City, County, State and Township representatives). The improvement alternatives included; conflict warning device, median closure, ¾ access, reduced conflict intersection, offset tee configuration, access management, overpass, and grade separated interchange.</p> <p>Working with the stakeholders, four concepts at each intersection were developed to a 20 percent design level and evaluated. An economic analysis, safety, right of way, traffic operation and engineering analysis was conducted to quantify pros and cons and to ultimately arrive at the recommended reduced conflict intersection (Glencoe) and an offset tee configuration in Willmar. Two separate ICE reports following MnDOT methodology were prepared and approved by all agencies.</p>
<p>Relevance to Project</p>	<p>Relevance to Project</p>
<ul style="list-style-type: none"> • Traffic counts • Forecasting • Safety analysis • Concept development • Draft and Final ICE reports • Stakeholder coordination 	<ul style="list-style-type: none"> • Traffic counts • Forecasting • Safety analysis • Concept development • Draft and Final ICE reports • Stakeholder coordination
<p>Reference</p>	<p>Reference</p>
<p>MnDOT D1 Jim Miles james.miles@state.mn.us 218.725.2789</p>	<p>MnDOT D8 and Central Office Derek Leuer Derek.Leuer@state.mn.us 651.297.1172</p>



TABLE 2. PROJECT EXPERIENCE EXAMPLES (CONTINUED)

TH 71 at Industrial Blvd. ICE	County Road 64 ICE Study
MnDOT District 2	Dakota County
	
<p>MnDOT and the City of Park Rapids are investigating potential traffic operation and safety improvements at the intersection of TH 71 and Industrial Boulevard to be included in a programmed 2018 construction project. This intersection has experienced a high crash rate and has long motorist delays during the peak periods; and frequently receives community request for a traffic signal.</p> <p>Alliant prepared an ICE report that developed and evaluated 8 pencil sketch conceptual alternatives for discussion with key stakeholders (City, County and State) The improvement alternatives included; geometric improvements (turn lanes), two-way stop control, traffic signal system (geometric and signal phasing combinations), roundabout and access management considerations (5 alternatives). Working with the stakeholders, four concepts were developed to a 20% design level and evaluated. An economic analysis, safety, right of way, traffic operation and engineering analysis was conducted to quantify pros and cons. Two alternatives were presented at public information meetings to provide education on the pros and cons of each option obtain feedback. The ICE was prepared following MnDOT methodology and recommends the construction of a single lane roundabout, access consolidations and a three-lane roadway segment.</p>	<p>As part of a programmed reconstruction project to convert CR 64 to three lanes, geometric and traffic control revisions were evaluated at the intersections of CR 64 and Flagstaff Ave., CR 64 and Pilot Knob Rd., and CR 64 and Akin Rd. In addition to employment and population growth within the study area, CR 64 serves three area public schools. The current congestion at the all way stop control and high peak period volumes make each location candidates for review of proper traffic control and capacity. To support Dakota Co. in identifying the appropriate intersection and traffic control improvements, Alliant prepared an ICE Feasibility Study. It addressed the existing geometric, traffic operation and safety characteristics, and developed conceptual alternatives that would accommodate the forecast year 2030 traffic demands at each intersection and be compatible with long range infrastructure plans.</p> <p>We worked closely with the key stakeholders to develop and evaluate geometric and traffic control alternatives (all way stop, traffic signal, roundabout), and to perform an economic analysis, safety, right of way, traffic operation and engineering analysis to quantify pros and cons. The study recommended roundabouts at all three intersections, with expandability options allowing for compatibility with the long term infrastructure plans. Multi-modal improvements including trails and new sidewalks were also identified for improved connection to the area public schools.</p>
Relevance to Project	Relevance to Project
<ul style="list-style-type: none"> • Traffic counts • Forecasting • Safety analysis • Concept development • Draft and Final ICE reports • Stakeholder coordination 	<ul style="list-style-type: none"> • Traffic counts • Forecasting • Safety analysis • Concept development • Draft and Final ICE reports • Stakeholder coordination



KEY PERSONNEL

Our team includes experienced and skilled professionals that have completed many ICE studies for agencies throughout Minnesota.

The biographies below showcase Alliant’s project management structure as well as key supporting team members. The project organizational chart illustrates our team’s composition with **full resumes for all personnel included in the Appendix.**



Scott Poska, PE, PTOE - Project Manager

Scott has over 15 years of experience and has led over 25 intersection control evaluations (ICE). He is an experienced project manager for corridor planning, traffic studies, traffic operation/safety analyses, access management, and preliminary engineering projects. Scott specializes in the planning, design, and operation of traffic signal systems, including traffic modeling and analysis, signal timing and implementation, flashing yellow arrow (FYA) analysis and implementation, ADA compliance, preparation of plans, specifications, and cost estimates for traffic signal systems and signing/pavement marking projects. Prior to joining Alliant, Mr. Poska was responsible for traffic operations at the City of Minneapolis including signal timing of the City’s 810 traffic signals, managing a variety of traffic calming and safety related items, and signing and striping maintenance and operations. Scott will serve as the Project Manager and will lead the traffic operation analysis. He will participate in all project coordination activities and coordinate the day-to-day work with project engineers.

Relevant Projects:

- Six ICE Studies for MAPO (2016-2017)
- CSAH 5 and Trunk Highway 73 Intersection Evaluation and Realignment, St. Louis County
- Manning Avenue ICE Studies, Washington County

Intersection Control Evaluations. As project manager for the completion of over 25 ICE studies throughout Minnesota, Scott has led the stakeholder engagement process, traffic forecasting, traffic operations and safety analysis, and concept layout development. He provided oversight for the development of preliminary cost estimates and right-of-way, conducted economic analyses and prepared the final preliminary layouts, access management, and traffic control recommendations. Examples include six intersection control evaluations for the Mankato Area Planning Organization (MAPO) in 2016-2017, the intersection evaluation and realignment for CSAH 5 and Trunk Highway 73 in St. Louis County, and three intersection control evaluations along Manning Avenue in Washington County.

Corridor Studies. Scott has served in lead roles for dozens corridor studies, corridor safety evaluation and preliminary design for transportation system improvement projects throughout the upper Midwest. These studies include



documentation of existing conditions, land use, access, and project purpose and need. Alternatives analyses are completed to identify and prioritize multimodal improvements that would increase safety and mobility while providing reasonable, safe access to and from local streets and businesses. Studies typically include an implementation plan as well as conceptual and/or preliminary design layouts for study recommendations. Scott led the stakeholder and public engagement processes to listen, inform, and build consensus of improvement alternatives. Examples include the CSAH 42 and CSAH 27 Intersection Area Traffic Study in Savage MN; 1st Street One Way to Two Way Conversion Study in Duluth, MN; and the Ramsey County 4 to 3 Conversion Study.



Jordan Schwarze, PE – Traffic Lead

Jordan has 14 years of professional traffic and transportation experience working in both the public and private sectors. His work currently focuses on traffic operations/safety analyses, intersection control evaluations, corridor studies, concept feasibility studies, and traffic impact studies. Jordan has considerable experience working with public agency clients around Minnesota. Jordan will serve as the traffic operations and safety lead for the study.

Representative Projects:

- MnDOT District 6 ICE Reports, Southeast MN
- TH 194/Midway Road ICE, MnDOT District 1
- Glenwood Street Safety Study, Duluth
- Maryland Avenue 4-to-3 Lane Conversion, St. Paul



Hannah Johnson, EIT – Traffic Analyst

Hannah has more than four years of experience at Alliant. Her work primarily focuses on intersection control evaluations, corridor safety studies, and traffic impact studies. She is proficient with Synchro, SimTraffic, and MnDOT's CMAT system. Hannah has served as a Project Engineer for various Intersection Control Evaluation (ICE) studies for Alliant throughout Minnesota. Her responsibilities have included warrant analyses for traffic signals and roundabouts, alternatives development, traffic forecasting and operations analysis, engineering analysis of pros and cons, and cost/benefit analysis

Representative Projects:

- MN 220 Corridor Study, Grand Forks-East Grand Forks MPO
- Glenwood Street Safety Study, Duluth
- Rice Street Transportation Safety Study, Ramsey County
- MnDOT District 1 ICE Studies, Northeast MN
- Old Shakopee Road/Cedar Avenue ICE, Bloomington, MN



Nick Turner, PE – Design Lead

Nick is a transportation engineer with over nine years of design and construction management experience. His experience ranges from conceptual layouts to final design, from urban core reconstruction to specialty roundabout geometrics, and from leading design to project management. Nick has extensive experience with geometric design and modeling software and production of preliminary and final design deliverables. Nick will lead the development of the geometric alternatives and planning level engineering estimates.

Representative Projects:

- TH 73 and CSAH 10 Roundabout and Highway Improvements, Moose Lake
- MN 220 Corridor Study, Grand Forks-East Grand Forks MPO
- Xerxes Avenue/106th Street ICE, Bloomington, MN
- TH 194/Midway Road ICE, MnDOT District 1



Steve Weser, PE – Design Advisor

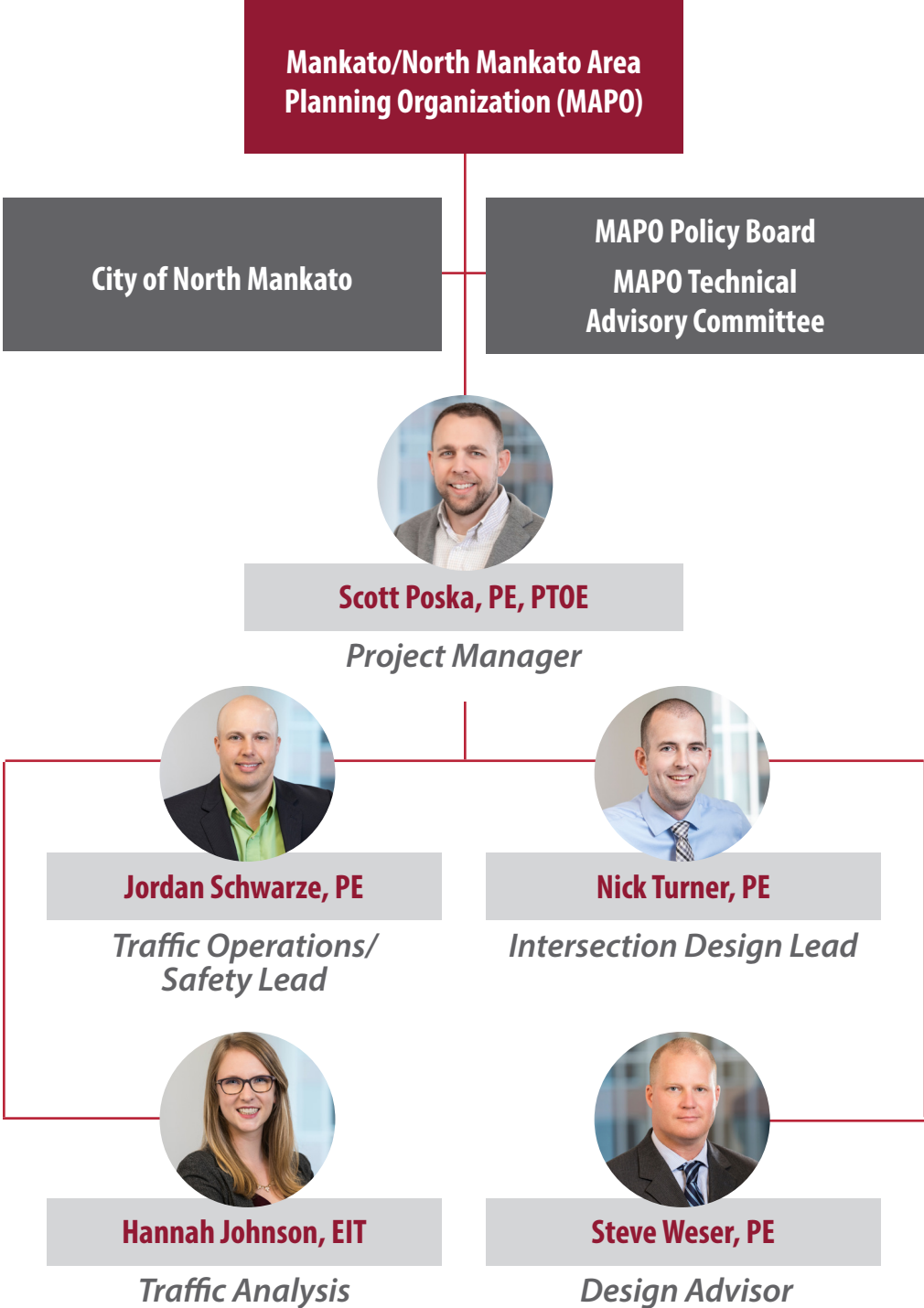
Steve is a Principal at Alliant with 23 years of experience working on a wide variety of projects with an emphasis on State and County Highways and Municipal State Aid streets. He has managed many high-profile projects and is experienced in all phases of projects from conceptual development to construction administration. Steve is well respected across the metro area and beyond for his broad range of technical knowledge, his commitment to maintaining a hands-on role in his projects, and his effective communication with his clients. Steve will be active in brainstorming efforts and advising design staff in developing intersection alternative concepts. Steve will also perform independent technical reviews of the design concepts and planning level cost estimates.

Representative Projects:

- Lexington Avenue Reconstruction, Ramsey County
- Centerville Road (CSAH 59) Improvement Project, Ramsey County
- MN 220 Corridor Study, Grand Forks-East Grand Forks MPO



FIGURE 3. ORGANIZATIONAL CHART





Project Team Availability

Our project manager and all of the key personnel listed above are available to perform the proposed work in the timeframe shown in the project schedule.

Performance Record

Alliant has developed a strong reputation with clients throughout Minnesota because of our innovative and responsive approach, expertise, commitment to provide the highest quality services and our consistent desire to exceed expectations. At Alliant, we deliver projects on time and within budget. We have completed dozens of successful ICE studies similar to this project and have no doubt that our project team and scope of work identified in this proposal will provide MAPO with an exceptional project.

WORK PLAN, DELIVERABLES AND SCHEDULE

Our work plan and schedule of deliverables is structured to exceed the requirements of the RFP, adhere to MnDOT ICE procedures, and is based upon years of experience preparing ICE reports.

Task 1.0 Project Management

Alliant will work cohesively with MAPO to meet project needs. The project will be managed by Scott Poska, who will be the primary point of contact throughout the duration of the project. As the project manager, Mr. Poska will ensure that all work produced by the project team is of the highest quality and that all deliverables undergo the quality checking process, as is Alliant policy.

1. **Administration** – Submit progress reports, invoices, budget updates, and maintain a project schedule using the Critical Path Method.
2. **Project Coordination** – Facilitate coordination with the City of North Mankato and other key stakeholders through phone/email conversations and maintain project schedule.
3. **Quality Assurance / Quality Control** - Conduct project deliverable reviews to ensure that Alliant's quality control process has been followed.



Agency Involvement

Alliant is committed to working closely with MAPO and the TAC to achieve consensus on the study process and recommendations.

- 1. Bi-weekly conference calls with the MAPO Project Manager to discuss project status and any technical requirements of the study.
- 2. Prepare for and lead four in-person meetings:
 - Meeting #1: TAC Kickoff Meeting
 - Meeting #2: North Mankato City Council Meeting
 - Meeting #3: TAC Draft ICE Study Meeting
 - Meeting #4: MAPO Policy Board Meeting
- 3. Prepare and submit meeting agendas, materials and minutes.

Task 2: Data Collection

A quality ICE study begins with quality data. Alliant will gather relevant intersection data to identify existing characteristics, safety, access and quality of traffic flow.

- 1. Review data provided by MAPO:
 - a. MAPO LRTP
 - b. Adopted community plans and studies
 - c. GIS and CAD data/layers
 - d. StreetLight traffic data
 - e. Other materials as available
- 2. Set video cameras and conduct a 13-hour turning movement count at the study intersection.

Note: Due to traffic disruptions caused by the ongoing COVID-19 pandemic, traffic data is expected to be collected in Fall 2020. At that time, it is anticipated that area schools and colleges will have resumed regular in-person classes.

- 3. Conduct a field assessment of study intersection to review geometry, utilities, operations, access and to identify other factors that may influence the potential design alternatives.
- 4. Review in-place planimetric, right-of-way, and utility information to determine design constraints.
- 5. Document existing pedestrian/bicycle features and facilities in the vicinity of the study intersection.



Task 3: Data Analysis and Study Development

Existing Conditions

Alliant will conduct a comprehensive analysis of the existing conditions for the study intersection to identify existing characteristics, safety, access and quality of traffic flow. The evaluation will also document deficiencies, constraints and opportunities.

1. Conduct peak hour traffic operations analysis of morning and afternoon conditions. Document intersection measures of effectiveness (MOE).
2. Conduct a review of crash data and conduct an intersection safety analysis (crash rate, critical crash rate, severity rate, and prepare a crash diagram).
3. Document existing intersection deficiencies.

Future No Build Conditions

The future conditions analysis will include evaluating any proposed land use changes, known developments, roadway infrastructure changes or other characteristics that may influence traffic forecasts. The future conditions analysis will create a baseline condition and be used to identify future transportation system deficiencies and needs. Future construction and horizon year forecasts consistent with the MAPO LRTP will provide a measure of long term improvement needs and infrastructure compatibility.

1. Review future development plans or land use changes from the City of North Mankato that may influence traffic volumes.
2. Review potential infrastructure improvements as documented in the MAPO LRTP and other sources provided by MAPO.
3. Obtain and review forecast data prepared as part any other previous studies and review the MAPO LRTP traffic forecasts.
4. Review historical intersection and roadway traffic volume trends.
5. Develop peak hour turning movement volumes for AM and PM peak hours for the future construction and horizon years.
6. Develop hourly approach volume forecasts for the signal warrant analysis.
7. Conduct intersection operations analysis for the “no-build” condition.
8. Document existing and future no build conditions deficiencies as applicable. Prepare graphics and tables as necessary.



Traffic Control Device Alternatives Analysis

An operations analysis of intersection traffic control devices (all-way stop, traffic signal, roundabout, etc.) along with combinations of geometrics, and lane use designations will be conducted to determine optimum design solutions. Conduct warrant analysis based on MnMUTCD and MnDOT standards.

1. Conduct signal warrant analysis for existing and future year conditions if necessary.
2. Prepare planning level roundabout capacity curve analysis graphic for one versus two approach and circulatory lanes.
3. Conduct intersection operations analysis for various alternatives consisting of combinations of geometric improvements with alternate traffic control options.
4. Evaluate each alternative with respect to safety, operations, access and mobility. Document intersection MOE.
5. Prepare a traffic control device comparison matrix that summarizes the key benefits, impacts, design considerations and pros and cons.
6. Develop pencil sketch intersection design alternatives for motor vehicle and non-motor vehicle users that correlate with the traffic operations analysis and traffic control devices.

Concept Layouts

Develop up to two high-level alternative concepts over aerial imagery for the study intersection. The concepts will include all modes of transportation and attempt to minimize impacts to right-of-way, cost or other environmental factors.

1. Prepare base map of the intersection using topographic mapping, aerial photography and GIS information (if available).
2. Generate layout concepts consistent with City of North Mankato design standards based on recommendations from alternatives operations analysis.
3. Identify and determine adjacent property site access improvements, consolidation or changes in circulation.
4. Provide key links between alternate modes of transportation, or provide improved bicycling/walking circulation.

Traffic Control Device Decision Matrix and Construction Cost Analysis

Once the conceptual alternatives are complete, Alliant will conduct a planning level construction cost analysis to help assess the cost-effectiveness of each design. In addition, an overall alternative decision comparison matrix will be completed that will provide a comprehensive evaluation based on the key objectives such as safety, operations, cost, right-of-way impacts, and other factors.



1. Document expected traffic operations and safety improvements.
2. Document right-of-way impacts.
3. Prepare planning level construction cost estimates.
4. Review environmental and utility impacts at a high level.
5. Document local acceptance
6. Assess compatibility with other plans, including the MAPO LRTP.
7. Generate an assessment and evaluation matrix that compares each geometric layout concept's operation, environmental impacts, right-of-way impacts, and construction cost.

Recommended Alternatives

Based on input from TAC and following a thorough review of the comparison matrix evaluation, a recommended alternative will be selected for the study intersection. The recommended alternative will be refined to address any comments and to include features identified through study process.

1. Review the layout concepts, decision matrix and recommended alternative with the TAC.
2. Refine the preferred alternative concept based on TAC review.
3. Establish estimated right-of-way impacts expected or anticipated.
4. Finalize traffic operations analysis and summarize MOE results.
5. Finalize planning construction costs and economic analysis.
6. Document study recommendations for TAC discussion.

Agency Participation

Participation of MAPO and other regulatory agencies is critical to the success of the project. In preparation of our proposal we are assuming that the following information and services will be provided as applicable.

1. MAPO LRTP
2. Adopted community plans and studies
3. GIS and CAD data/layers
4. StreetLight traffic data
5. Other materials as available
6. As-built roadway design plans
7. Timely review of all submitted deliverables



Task 4: Environmental Justice and Title VI

The requirements of Environmental Justice (EJ), as outlined by FHWA, are intended to ensure that the process of transportation planning is consistent with the provisions of Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin. These provisions will be incorporated into the Study, and adhered to throughout the project. The Consultant shall coordinate with MAPO’s Title VI/EJ policies and PPP.

Task 5: Project Completion

ICE Reports

Draft and Final ICE report for the study intersection documenting the safety/traffic operations, traffic control alternatives analysis and the recommended alternative will be prepared.

1. Prepare Draft ICE report, submit to the TAC for review and comment.
2. Prepare Final ICE report, circulate for signatures.

Project Schedule

A project schedule has been developed based upon the work plan. The project schedule is provided in **Table 3**. Key milestones are listed below.

Authorization to Proceed:	May 2020
<i>Note: Due to traffic disruptions caused by the ongoing COVID-19 pandemic, it is anticipated that project kickoff will be delayed to allow traffic to normalize.</i>	
Proposed Meeting Dates	
Meeting #1: TAC Kickoff	August 2020
Meeting #2: North Mankato City Council Meeting	January 2021
Meeting #3: TAC Draft ICE Study Meeting	December 2020
Meeting #4: MAPO Policy Board Meeting	January 2021
Task Deliverable Dates	
Existing Conditions Analysis:	September 30, 2020
Forecast Traffic Volumes:	October 9, 2020
Traffic Control Alternatives Analysis:	October 30, 2020
Concept Layouts and Cost Estimates:	November 20, 2020
Recommended Preferred Alternative:	December 11, 2020
Draft ICE Report:	December 31, 2020
Final ICE Report:	February 12, 2021



TABLE 3. PROJECT SCHEDULE

Project Aspect	May	June	July	August	September	October	November	December	January	February
Notice to Proceed	◆									
Meeting 1: TAC Project Kickoff				■						
Data Collection					■					
Existing Conditions Analysis					■	● 9/30/20				
Forecast Traffic Volumes						■	● 10/9/20			
Traffic Control Alternatives Analysis						■	● 10/30/20			
Concept Layouts and Cost Estimates							■	● 11/20/20		
Recommended Preferred Alternative							■	● 12/11/20		
Draft ICE Study Report							■	● 12/31/20		
Meeting 2: North Mankato City Council									■	
Meeting 3: TAC Draft ICE Study								■		
Meeting 4: MAPO Policy Board									■	
Final ICE Study Report										● 2/12/21

◆ Milestones ● Deliverables ■ Meetings

Note: Due to traffic disruptions caused by the ongoing COVID-19 pandemic, it is anticipated that project kickoff will be delayed to allow traffic to normalize.



PROJECT BUDGET

Table 4 provides an estimate of hours by key staff classification, hourly rates (includes direct labor plus overhead and fee) and cost breakdown by task. The project cost is based on the scope of work and provides MAPO with a thorough evaluation and a high-level approach to the development of the concept exhibits. We remain flexible in adjusting our scope of work and cost to ultimately best meet the needs of MAPO.

TABLE 4. PROJECT BUDGET

Work Tasks	Principal	Senior Engineer	Professional Engineer	Graduate Engineer	Data Collector	Task Hour Totals	Cost Per Task
Task 1 - Project Management	0	28	0	0	0	28	\$3,920
Task 2 - Data Collection	0	2	4	4	22	32	\$2,026
Task 3 - Data Analysis and Study Development	2	4	20	40	0	66	\$6,644
Task 4 - Environmental Justice and Title VI	0	1	0	1	0	2	\$225
Task 5 - Project Completion	0	4	0	12	0	16	\$1,580
Total Staff Hours	2	39	24	57	22	144	
Billing Rates	\$192.00	\$140.00	\$115.00	\$85.00	\$43.00		
Total Billing Cost	\$384	\$5,460	\$2,760	\$4,845	\$946		\$14,395
Meeting Materials							\$50
Mileage 800 miles @ \$0.575)							\$460
Expenses Cost							\$510
Total Project Cost							\$14,905



REFERENCES

We encourage you to call our references. As requested by the RFP, contacts are provided below:

Jim Miles

MnDOT D1

Contact: james.miles@state.mn.us | 218.725.2789

Project: TH 194/Midway Rd Intersection Control Evaluation

Earl Haugen

Grand Forks/East Grand Forks MPO

Contact: earl.haugen@theforksmmpo.org | 701.746.2660

Projects: MN 220 Corridor Study, Bygland Road Study

Taryn Erickson

City of Duluth

Contact: tjerickson@duluthmn.gov | 218.730.5087

Projects: Glenwood Street Corridor and Safety Study and 1st St

Kirk Roberts

City of Bloomington

Contact: KRoberts@bloomingtonmn.gov | 952.563.4914

Projects: Old Shakopee Road/Cedar Avenue and Xerxes/106th St

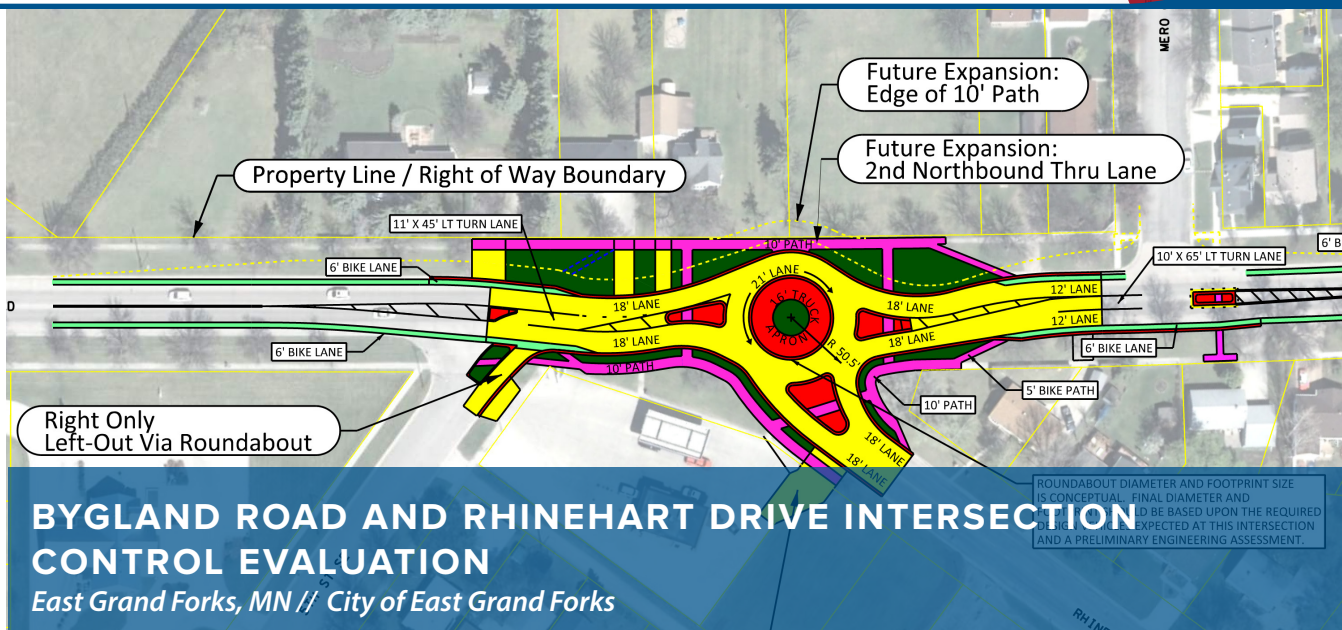
COMPLETED FORMS

The requested signed and **completed forms are provided in the Appendix.**

APPENDIX

The following items included in the Appendix:

- Project Sheets
- Detailed Résumés
- Completed Forms



BYGLAND ROAD AND RHINEHART DRIVE INTERSECTION CONTROL EVALUATION

East Grand Forks, MN // City of East Grand Forks

Client Reference:

Steve Emery
 City of East Grand Forks
 600 DeMers Avenue
 East Grand Forks, MN 56721
 218.773.5626

Alliant Engineering completed a study of the 2.5 mile stretch of Bygland Road from the Red Lake River to the southeastern city limits. Bygland Road is a primary arterial serving the south end of East Grand Forks; however, this corridor also traverses through a residential neighborhood and provides access to the City’s middle school and elementary school, which serve the entire city.

Project Goals:

- Examine options to improve the existing and future motor vehicle mobility, access and safety that address peak hour and off peak hour traffic characteristics.
- Evaluate feasibility and design options to provide a bicycle facility along Bygland Road.
- Identify opportunities to improve pedestrian crossing safety at key locations along the corridor.
- Provide a recommended transportation plan showing future infrastructure improvements, capital improvement programming costs and an Implementation plan.

One of the study recommendations was to complete an Intersection Control Evaluation (ICE) for the Bygland Road and Rhinehart Drive intersection. The purpose of the intersection study was to identify the appropriate intersection design, lane geometrics and intersection traffic control device. As part of the project an intersection operation (using SimTraffic and VISSIM and safety analysis was completed to identify deficiencies and to support the identification of alternatives. Traffic forecasts were prepared to support a forecast year 2018 and 2040 design year horizons. Specific intersection design emphasis was placed on maximizing existing roadway infrastructure, providing pedestrian and bicycle path connections compatible with the City’s long range plan, providing acceptable commercial and residential property site access. A comparison matrix was prepared to help the project team assess the cost-benefit of each alternative. Key factors included construction cost estimates, right of way needs, operational performance, safety characteristics, high level environmental impacts, pedestrian/bicycle accommodations and utility/infrastructure impacts. The final deliverable included signed ICE report detailing the recommended intersection traffic control device, intersection concept plan, and construction cost estimate.



TH 73 AT CSAH 10 INTERSECTION CONTROL EVALUATION

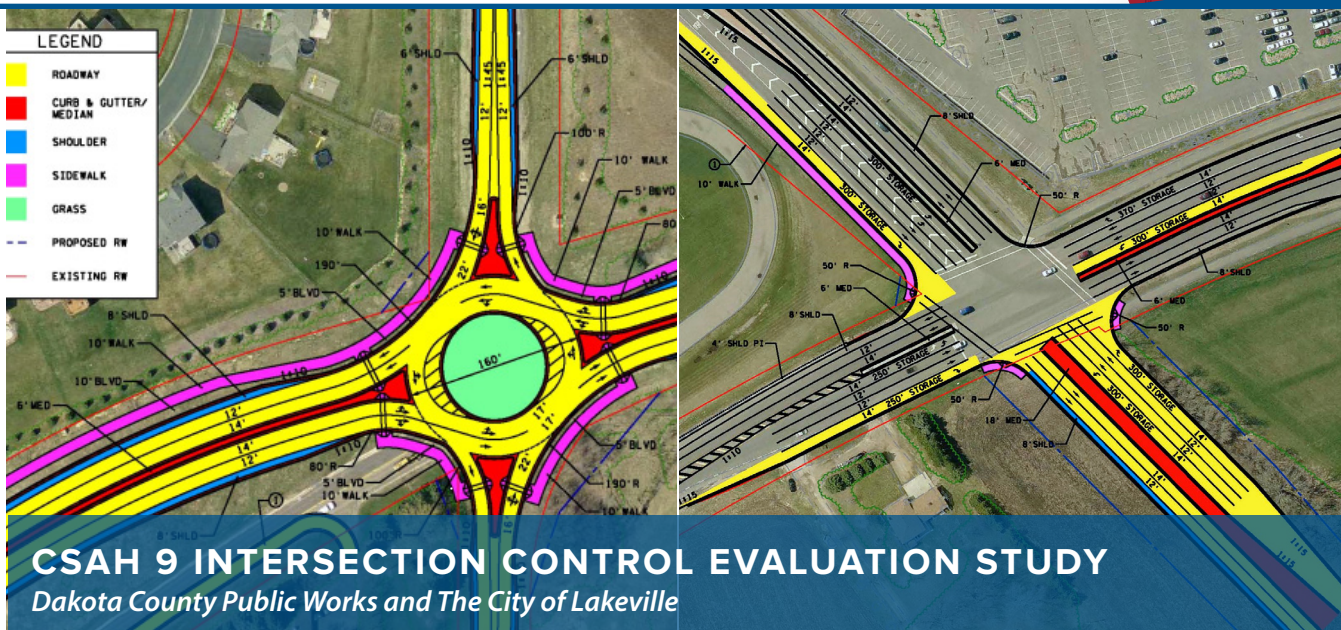
Moose Lake, MN // MnDOT District 1

Client Reference:

Roberta Dwyer
 MnDOT District 1
 218.725.2781
 Roberta.dwyer@state.mn.us

MnDOT and Alliant Engineering evaluated the access management and roadway improvements along TH 73 AND TH 27 through Moose Lake in 2015. Based on that study, an intersection control evaluation was recommended for the TH 73 and CSAH 10 intersection. In addition, the community expressed concerns with traffic and safety at the existing intersection, since there is a planned relocation of a school to its new location off of CSAH 10 in 2017.

Alliant prepared an Intersection Control Evaluation report that developed and evaluated 4 conceptual alternatives for discussion with key stakeholders (City, County and State representatives). The improvement alternatives included; geometric improvements (turn lanes), all-way stop control, traffic signal system (geometric and signal phasing combinations), roundabout. Working with the MnDOT, four concepts were developed to a 20 percent design level and evaluated. An economic analysis, safety, right of way, traffic operation and engineering analysis was conducted to quantify pros and cons. Two alternatives were presented at public information meetings to provide education on the pros and cons of each option obtain feedback. The ICE was prepared following MnDOT methodology and recommended the construction of a single lane roundabout.



CSAH 9 INTERSECTION CONTROL EVALUATION STUDY
 Dakota County Public Works and The City of Lakeville

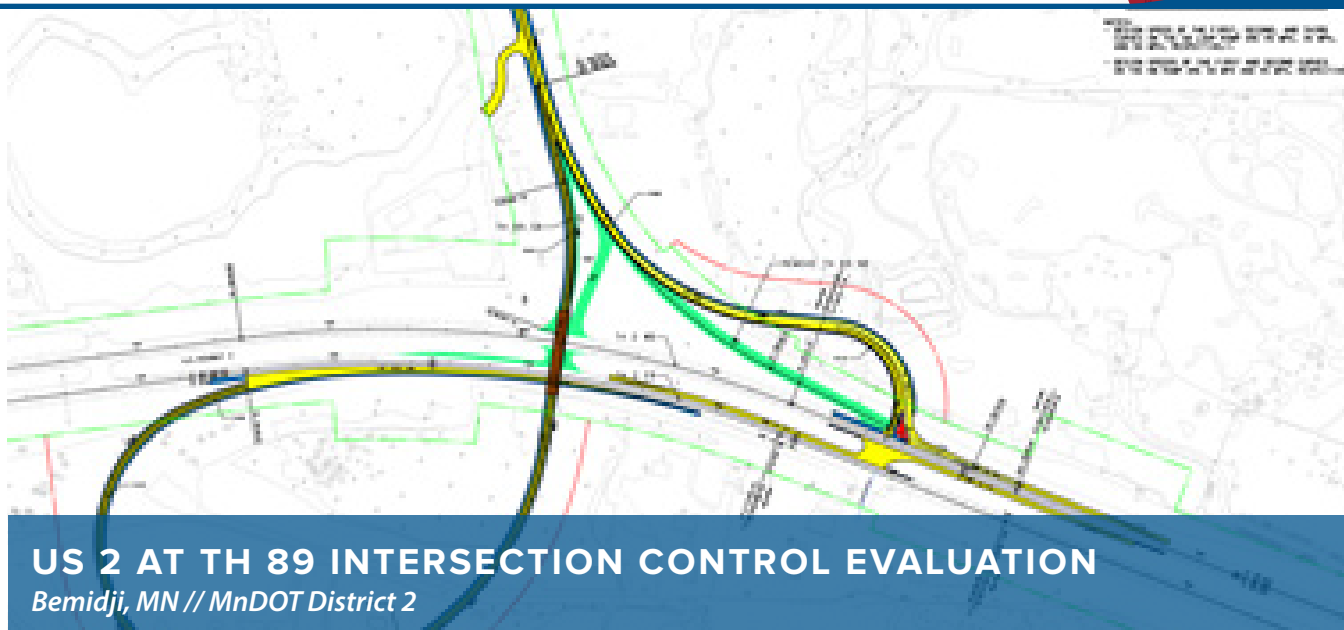
Client Reference:

Kristi Sebastian
 Traffic Engineer
 Dakota County
 952.891.7178

Alliant worked with Dakota County and the City of Lakeville to evaluate two County Roadway intersections. The purpose of the intersection study was to identify the appropriate intersection design, lane geometrics and intersection traffic control device.

As part of the project an intersection operation (using SimTraffic, VISSIM and RODEL) and safety analysis was completed to identify deficiencies and to support the identification of alternatives. Traffic forecasts were prepared to support a forecast and 2030 design year horizon. During the conceptual design phase, multiple alternatives including two lane roundabouts, traditional signalized intersections and multi-way stop controlled intersections were considered. A comparison matrix was prepared to help the project team assess the cost-benefit of each alternative. Key factors included construction cost estimates, right of way needs, operational performance, safety characteristics, high level environmental impacts, pedestrian/bicycle accommodations and utility/infrastructure impacts.

The final product included a report documenting the preferred preliminary intersection design and a prioritized schedule for a phased implementation. Design files were provided to the County to support preliminary and final engineering.


Client Reference:

Bill Pirkl
 MnDOT District 2
 District Traffic Engineer
 218.755.6574

The US 2/TH 89 intersection, combined with the commercial driveway access just to the east of TH 89 are both at-grade stop controlled intersections that together have the highest crash rate within MnDOT District 2. With two recent fatalities, this intersection has the 3rd highest injury related crash rate in the State. As a high priority for MnDOT, an ICE study was conducted to identify the appropriate solution to address both existing and future safety and traffic operation deficiencies.

Alliant prepared an Intersection Control Evaluation report that developed and evaluated 15 pencil sketch conceptual alternatives. The improvement alternatives include the following general strategies ranging from:

- Conflict warning system
- Traffic signal control.
Multiple sub options are evaluated to explore the best accommodation of local property access and frontage roads.
- Roundabout
- J-turn style intersection design
- Realignment of TH 89 to CR 115
- Partial interchange configurations

A public and property owner involvement process was followed to understand local resident and business owner concerns, to present the range in alternatives and to identify the preferred alternatives for detailed analysis. Three concepts (traffic signal, partial diamond interchange and a partial cloverleaf configuration) were developed to a 30 percent design level and evaluated. An economic analysis, safety, right of way, traffic operation and engineering analysis was conducted to quantify pros and cons and to ultimately arrive at the recommended partial cloverleaf interchange design.



Scott Poska, PE, PTOE
PROJECT MANAGER



Scott has over 15 years of experience and has led over 25 intersection control evaluations.

Background:

Scott has project management experience for all phases of transportation projects, including project development, planning, design and construction. He has served or is currently serving as Alliant’s Project Manager for numerous corridor and traffic operations studies.

Education:

B.S. Civil Engineering,
Iowa State University

**Professional Engineer
Registration/Licensure:**

Minnesota (47068)
Professional Traffic Operations
Engineer (2587)

He is an experienced project manager for corridor planning, traffic studies, traffic operation/safety analyses, access management, and preliminary engineering projects. Scott specializes in traffic engineering operational analyses and intersection control studies and is an expert with a variety of traffic modeling software’s including Synchro, SimTrafic and VISSIM. He has significant experience in signal timing and implementation, FYA analysis, ADA compliance, preparation of plans, specs, and cost estimates for traffic signal systems and signing/pavement marking projects. Prior to joining Alliant, Mr. Poska was a traffic operations engineer for the City of Minneapolis, responsible for signal timing at the City’s 810 traffic signals, managing a variety of traffic calming and safety related items, and signing and striping maintenance and operations throughout the City.

1st Street Two Way Conversion Traffic Study *Duluth, MN* Project Manager. Alliant was retained by the City of Duluth to perform a traffic study along 1st Street. 1st Street runs parallel to Superior Street, a popular but congested two-way facility in the heart of the City. As the City redevelops, more efficient access and circulation is needed around Superior Street. The Duluth-Superior MIC model was used to develop traffic forecasts for a potential two-way facility. Traffic control options were analyzed along the corridor and recommended street configuration options were presented at a public meeting.

CSAH 42 at CSAH 27 Intersection Area Traffic Study *Scott County, MN* Scott served as Deputy Project Manager for this project. Scott County selected Alliant to perform a traffic study of six intersections in the vicinity of the CSAH 42 and CSAH 27 intersection. The CSAH 42 and CSAH 27 intersection is one of the most congested at grade intersections in the County and is forecasted to carry additional traffic in the near future as a result of planned development. Near term improvements were developed and recommended in addition to left turn phasing for FYA by time of day and coordinated signal timing plans.



**Scott Poska, PE,
PTOE**

PAGE 2

EXPERIENCE PRIOR TO ALLIANT

MAPO ICE Studies (2016 and 2017) *Mankato, MN* Project Manager. Scott was the project manager responsible for developing Intersection Control Evaluation (ICE) reports for six intersections in the Mankato/North Mankato area. Both projects included field observation and data collection efforts. 20-year traffic forecasts were developed based on existing traffic patterns, historical growth rates, anticipated development, and projected land uses. Intersection control alternatives developed included all-way stop, traffic signal, and roundabout controls. Traffic capacity analysis was completed for all alternatives in addition to preliminary aerial based layouts and cost estimates. Both projects included engaging key agency stakeholders as part of progress meetings with the Technical Advisory Committee and Policy Board.

CSAH 5 at TH 73 Intersection Control Evaluation *St. Louis County, MN* Project Manager. Scott was the project manager responsible for developing an Intersection Control Evaluation (ICE) report for this complex County highway realignment project. The need for this project was driven by an adjacent mine expansion encroaching onto the last mile of CSAH 5 leading to the TH 73 intersection. Therefore, CSAH 5 needed to be realigned at a new intersection with TH 73. Intersection traffic control alternatives were developed and considerations were made for over-size over-weight (OSOW) vehicles due to the close proximity to adjacent mining operations. Opening day and 20-year traffic forecasts were developed based on existing traffic patterns and historical growth rates. Traffic capacity analysis was completed for all alternatives in addition to preliminary aerial based layouts and cost estimates. The fast-track project was led by St. Louis County and had significant coordination with MnDOT District 1.

Manning Avenue (CSAH 15) ICE Studies *Washington County, MN* Project Manager. Scott was responsible for developing Intersection Control Evaluation (ICE) reports for three intersections along Manning Avenue. The project involved the realignment of Stillwater Boulevard to Manning Avenue at the existing CSAH 14 intersection. 20-year traffic forecasts were developed based on existing traffic patterns, anticipated development, and projected land uses. All-way stop, and traffic signal control were evaluated along with multi-lane roundabouts. Traffic capacity analysis was completed for all alternatives in addition to preliminary aerial based layouts and cost estimates.



Jordan Schwarze, PE

TRAFFIC LEAD



Background:

Jordan has 14 years of professional traffic/transportation experience working in both the public and private sectors. His work currently focuses on traffic operations/safety analyses, multimodal corridor studies, intersection control evaluations, traffic impact studies, and parking studies. Jordan has considerable experience working with public agencies, having successfully completed numerous projects throughout Minnesota.

Education:

B.S. Civil Engineering,
University of Minnesota

Professional Engineer Registration/Licensure:

Minnesota (48187)
Florida (87129)
South Dakota (12821)
Wisconsin (41326-6)

MnDOT District 6 ICE Reports *Southeast MN* Jordan served as Project Manager/Traffic Engineering Lead for the preparation of four ICE reports at intersections throughout District 6 of the Minnesota Department of Transportation. The analysis included evaluating current and forecasted future intersection operations and crash rates over multiple potential traffic control alternatives and intersection reconfiguration scenarios. The goal of each ICE report was to determine the appropriate intersection design, lane geometrics, and traffic control for future forecasted conditions.

Glenwood Street Safety Study *Duluth, MN* Jordan served as Project Manager and Lead Traffic Engineer for the preparation of a safety study on the Glenwood Street Corridor between Snively Road and 43rd Avenue in Duluth. The goal of the safety study was to develop appropriate short- and long-term visions for the Glenwood Street Corridor addressing the needs of motorists, pedestrians, and bicyclists. Recommended improvements included narrowed lane widths, implementation of dedicated left-turn lanes and dynamic speed feedback signing, as well as improved pavement markings. The study also included an ICE report which ultimately recommended conversion of the intersection at the western terminus of the study corridor to a roundabout.

Lexington Avenue from I-694 to CRE *Arden Hills and Shoreview, MN* Lead Traffic Engineer for the reconstruction design of Lexington Avenue. Jordan investigated access management revisions, traffic signal phasing modifications, and turn lane improvements to enhance corridor capacity and safety. The project corridor is lined with big box and other retail, food, and service businesses, as well as industrial properties that generate heavy traffic volumes resulting in delay, queuing, and safety concerns.

County Road C *Saint Anthony and Roseville, MN* Lead Traffic Engineer for the reconstruction design of CR C between New Brighton Boulevard and Long Lake Road. Significant pedestrian/bicyclist improvements are being incorporated along the corridor as well as signal replacements at the Walnut St and Long Lake Rd intersections. Jordan led the traffic and intersection analyses to address capacity and operational issues.



Hannah Johnson

TRAFFIC ANALYST



Background:

Hannah has four years of experience with Alliant. Analytical by nature, Hannah focuses mainly on traffic impact and corridor safety studies. She is well versed in corridor research and thinks critically to provide a variety of recommendations on each project. Hannah's other relevant experience includes data collection, traffic operations/safety analyses, traffic impact studies, parking studies, and bus operation studies.

Education:

Bachelor of Industrial and Systems Engineering,
University of Minnesota

Mn 220 Corridor Study *East Grand Forks, MN* Hannah served as a Project Engineer for the preparation of a corridor study for a 2-mile segment of a major arterial in East Grand Forks. The primary improvement objectives of the study were access management, safety, mobility/capacity, and pedestrian crossings. Hannah's responsibilities included an analysis of safety, existing roadway geometrics, land use, access management, multimodal facilities, trip distribution and assignment, access review, alternatives development, and documentation, including development of public information meeting materials.

Glenwood Street Safety Study *Duluth, MN* Project Engineer for the preparation of a safety study on the Glenwood Street Corridor between Snively Road and 43rd Avenue in Duluth. The goal of the safety study was to develop appropriate short- and long-term visions for the Glenwood Street Corridor addressing the needs of motorists, pedestrians, and bicyclists. Hannah was responsible for the existing conditions analysis and development of preliminary alternatives for the study intersections and corridor.

Rice Street Transportation Safety Study *Ramsey County, MN* Project Engineer for a transportation study for Rice Street between University Avenue and Larpenteur Avenue. This study examined a potential conversion from a four-lane undivided roadway to a three-lane cross-section to improve mobility and pedestrian safety. The transportation study helped the County and City develop a preliminary roadway layout for future phased construction of corridor improvements. In addition, the study evaluated access management, geometric and creative intersection operation strategies to improve the traffic flow of the Como Avenue/Pennsylvania Avenue/Rice Street triangle area. Hannah assisted with the safety and operations analysis.

Intersection Control Evaluations *Various Locations, MN* Hannah has served as a Project Engineer for various Intersection Control Evaluation (ICE) studies for Alliant throughout Minnesota. Her responsibilities have included warrant analyses for traffic signals and roundabouts, alternatives development, traffic forecasting and operations analysis, engineering analysis of pros and cons, and cost/benefit analysis.



Nick Turner, PE

DESIGN LEAD



Background:

Nick is a transportation engineer with over 9 years of design and construction management experience. His experience ranges from conceptual layouts to final design, from urban core reconstruction to specialty roundabout geometrics, and from leading design to project management.

Education:

B.S. Civil Engineering,
University of Iowa

Professional Engineer Registration/Licensure:

Minnesota (54334)
Iowa (P22876)

TH 73 and CSAH 10 Roundabout and Highway

Improvements *Moose Lake, MN* Geometric Design Lead and Roadway Designer for the construction of a roundabout at the intersection of TH 73 and Carlton County CSAH 10 in Moose Lake, MN. The construction of a new school along CSAH 10 south of this intersection required the intersection improvements as well as widening of CSAH 10 for approximately one mile. The intersection improvements were prepared as a standalone set of plans and later tied to a larger TH 73 improvement project. This project had a very aggressive schedule, with 6 weeks from start of the project to plan turn-in.

8th Street Reconstruction *Minneapolis, MN* Final Roadway Design

Lead for the reconstruction of 8th St from Hennepin Ave to Chicago Ave in downtown Minneapolis. The project includes a full reconstruction of the roadway, utility upgrades, ADA improvements, curb extensions, lighting, BRT bus stations, and streetscape elements to enhance the pedestrian realm. Extensive grading design work was required to maximize the pedestrian access route while ensuring drainage needs were met. The final design team prepared construction bid documents which covered all improvements.

Hennepin Avenue Reconstruction *Minneapolis, MN* Preliminary

Design Lead for the reconstruction of Hennepin Ave from Washington Ave to 12th St in the Central Business District of downtown Minneapolis. The project includes a full reconstruction of the roadway, utility upgrades, ADA improvements, curb extensions, lighting, enhanced bus stations, and streetscape elements to enhance the pedestrian realm. The preliminary design team coordinated with various stakeholders to produce a geometric layout which best served all interests. Several geometric options were produced and discussed on a weekly basis.

Xerxes Ave/106th St Concept Layout Development *Bloomington, MN*

– Conceptual Design Lead for the ICE study performed at the Xerxes Avenue and 106th Street intersection in Bloomington MN. The project reviewed several options for this intersection including: varying traffic control options, numerous geometric options, and fluctuating design speeds and how meeting state-aid requirements would change the footprint of different ideas. As conceptual designs advanced through the process 'Engineers Opinion of Probable Cost's were produced to help further the evaluation.



Steve Weser, PE

DESIGN ADVISOR



Background:

Steve works on a wide variety of projects with an emphasis on water resources and design of State and County Highways and Municipal State Aid streets. His specific responsibilities have included planning, preliminary and final design, construction inspection, computer modeling, cost estimating, report writing, and project management responsibilities for project development, design and construction management.

Education:

B.S. Civil Engineering,
University of Minnesota

Professional Engineer Registration/Licensure:

Minnesota (40545)

Lexington Avenue Reconstruction *Ramsey County, MN* Project Manager for the preliminary and final design of Lexington Avenue between I-694 and County Road E in the cities of Arden Hills and Shoreview. The project includes $\frac{3}{4}$ miles of roadway reconstruction, replacement of aged city utilities, railroad crossing, drainage improvements, pedestrian, bicycle, and transit improvements along a busy urban corridor. A comprehensive traffic analysis and extensive coordination with adjacent property/business owners and concurrent private development is required to implement access management improvements.

8th Street Reconstruction *Minneapolis, MN* Project Manager for the reconstruction of 8th Street from Hennepin Avenue to Chicago Avenue in downtown Minneapolis. The project includes a full reconstruction of the roadway along with utility upgrades to improve transit and pedestrian movement along the corridor while maintaining an acceptable level of service for vehicular traffic. The project includes a robust public engagement effort involving many agencies, neighborhood groups, advisory committees, and property owners and managers. The project includes aBRT stations, ADA improvements, curb extensions, lighting, and streetscape elements to enhance the pedestrian realm and transit amenities.

CSAH 59 (Centerville Road) Improvements *Ramsey County, MN* Consultant project manager for the preliminary and final design to widen Centerville Road (CSAH 59) to improve safety along a congested segment of County roadway within the City of White Bear Lake and White Bear Township in conjunction with an adjacent private development project. The project included roadway widening, traffic signal system installation, raised median, turn lanes, access revisions, and drainage improvements.

County Road 65 Reconstruction *Washington County, MN* Consultant Project Manager for the preliminary design for reconstruction of three miles of rural county roadway. Preliminary design consisted of a traffic analysis, environmental screening, public outreach, and 30% level design to determine Right-of-Way and temporary easement limits. Geometric improvements were recommended along County Road 65 and connecting CSAH routes including adding turn lanes, access management, vertical curve corrections and grading improvements to improve safety and drainage. A staff approved layout was developed to obtain municipal consent from West Lakeland Township and Baytown Township. Steve was responsible for leading the preliminary design effort and public involvement efforts.

the insurance required by this Agreement in full force and effect. The Contractor and MAPO shall be named as additional insureds under such policies. The insurer will provide 30 day written notice to MAPO and Contractor, without fail, of any cancellation, non-renewal, or modification of the policy(ies) or coverage evidenced by said certificate(s) for any cause, except for nonpayment of premium. The insurer will provide at least ten (10) days prior written notice to MAPO, without fail, of any cancellation of any of the policy(ies) or coverage evidenced by said certificate(s) for nonpayment of premium. MAPO shall also be provided with appropriate endorsements to its policy(ies) reflecting the status of MAPO as an additional insured and requiring that the foregoing required notice of cancellation, material alteration or non-renewal be provided MAPO by the insurance company providing such insurance policy(ies).

AFFIDAVIT OF NONCOLLUSION

I swear (or affirm) under the penalty of perjury:

1. That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);
2. That the attached proposal submitted in response to the ^{Intersection Control Evaluation (ICE)} Lor Ray Drive and James Drive Request for Proposals has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;
3. That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and
4. That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder's Firm Name: Alliant Engineering, Inc.

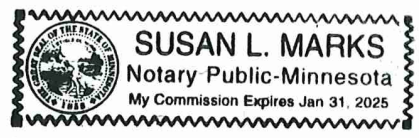
Authorized Signature: 

Date: 3/19/2020

Subscribed and sworn to me this: 19th day of March 2020

Notary Public: 

My commission expires: 1/31/2025



AFFIRMATIVE ACTION CERTIFICATION

If your response to this solicitation is or could be in excess of \$100,000.00, complete the information requested below to determine whether you are subject to the Minnesota Human Rights Act (Minnesota Statutes 363A.36) certification requirement, and to provide documentation of compliance if necessary. It is your sole responsibility to provide this information and—if required—to apply for Human Rights certification prior to the due date and time of the bid or proposal and to obtain Human Rights certification prior to the execution of the contract. The State of Minnesota is under no obligation to delay proceeding with a contract until a company

BOX A – For companies which have employed more than 40 full-time employees within Minnesota on any single working day during the previous 12 months. All other companies proceed to BOX B.

Your response will be rejected unless your business:

- Have a current Certificate of Compliance issued by the Minnesota Department of Human Rights (MDHR), or
- Has submitted an affirmative action plan to MDHR, which the Department received prior to the date and time the responses are due.

Check one of the following statements if you have employed more than 40 full-time employees in Minnesota on any single working day during the previous 12 months:

- We have a current Certificate of Compliance issued by MDHR. Proceed to BOX C. Include a copy of your Certificate with your response.
- We do not have a current Certificate of Compliance. However, we submitted an Affirmative Action Plan to MDHR for approval, which the Department received on _____ (date). If the date is the same as the response due date, indicate the time your plan was received: _____ (time). Proceed to BOX C.
- We do not have a Certificate of Compliance, nor has MDHR received an Affirmative Action Plan from our company. We acknowledge that our response will be rejected. Proceed to BOX C. Contact MDHR for

BOX B – For those companies not described in BOX A.

Check below.

- We have not employed more than 40 full-time employees on any single working day in Minnesota within the previous 12 months. Proceed to BOX C.

BOX C – For all companies

By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of the responder. You also certify that you are in compliance with federal affirmative action requirements that may apply to your company. (These requirements are generally triggered only by participating as a prime or subcontractor on federal projects or contracts. Contractors are alerted to these requirements by the federal government.

Name of Company: Alliant Engineering, Inc, Date: March 19, 2020

Authorized Signature:  Telephone Number: 612.767.9340

Printed Name: Michael R. Anderson Title: Principal

receives Human Rights certification.



WORKFORCE CERTIFICATE OF COMPLIANCE

The Commissioner of the Minnesota Department of Human Rights by the signature below attests that **ALLIANT ENGINEERING INC** is hereby certified as a contractor under the Minnesota Human Rights Act, §363A.

Certificate start date: **4/5/2019**

Certificate expiration date: **4/4/2023**

Minnesota Department of Human Rights

FOR THE DEPARTMENT BY:

A handwritten signature in black ink, appearing to read 'R. Lucero'.

Rebecca Lucero, Commissioner

AN EQUAL OPPORTUNITY EMPLOYER

Freeman Building • 625 Robert Street North • Saint Paul, MN 55155 • Tel 651.539.1100
MN Relay 711 or 1.800.627.3529 • Toll Free 1.800.657.3704 • Fax 651.296.9042 • mn.gov/mdhr

For assistance with this form, contact: Minnesota Department of Human Rights, Compliance Services Section
Mail: 190 East 5th St, Suite 700 St. Paul, MN 55101 TC Metro: (651) 296-5663
Toll free: 800-657-3704
Web: www.humanrights.state.mn.us Fax: (651) 296-9042 TTY: (651) 296-1283
Email: employerinfo@therightsplace.net

IMMIGRATION STATUS CERTIFICATION

By order of the Governor (Governor’s Executive Order 08-01), vendors and subcontractors **MUST** certify compliance with the Immigration Reform and Control Act of 1986 (8 U.S.C. 1101 et seq.) and certify use of the *E-Verify* system established by the Department of Homeland Security.

E-Verify program information can be found at <http://www.dhs.gov/ximgtn/programs>.

If any response to a solicitation is or could be in excess of \$50,000.00, vendors and subcontractors must certify compliance with items 1 and 2 below. In addition, prior to the delivery of the product or initiation of services, vendors **MUST** obtain this certification from all subcontractors who will participate in the performance of the Contract. All subcontractor certifications must be kept on file with the Contract vendor and made available to the state upon request.

1. The company shown below is in compliance with the Immigration Reform and Control Act of 1986 in relation to all employees performing work in the United States and does not knowingly employ persons in violation of the United States immigration laws. The company shown below will obtain this certification from all subcontractors who will participate in the performance of this Contract and maintain subcontractor certifications for inspection by the state if such inspection is requested; and
2. By the date of the delivery of the product and/or performance of services, the company shown below will have implemented or will be in the process of implementing the *E-Verify* program for all newly hired employees in the United States who will perform work on behalf of the State of Minnesota.

I certify that the company shown below is in compliance with items 1 and 2 above and that I am authorized to sign on its behalf.

Name of Company: Alliant Engineering, Inc,

Date: March 19, 2020

Authorized Signature: 

Telephone Number: 612.767.9340

Printed Name: Michael R. Anderson

Title: Principal

If the Contract vendor and/or the subcontractors are not in compliance with the Immigration Reform and Control Act, or knowingly employ persons in violation of the United States immigration laws, or have not begun or implemented the *E-Verify* program for all newly hired employees in support of the Contract, the state reserves the right to determine what action it may take. This action could include, but would not be limited to cancellation of the Contract, and/or suspending or debaring the Contract vendor from state purchasing.

For assistance with the *E-Verify* Program

CERTIFICATION OF RESTRICTION ON LOBBYING

In accordance with Section 1352 of Title 31, United States Code, it is the policy of the bidder/company named below that:

1. No Federal or state appropriated funds have been paid or will be paid by or on behalf of the bidder/company, to any person for influencing or attempting to influence an officer or employee of any Federal or state agency, or a member of Congress or the state legislature in connection with the awarding of any Federal or state contract, the making of any Federal or state grant, the making of any Federal or state loan, extension, continuation, renewal, amendment, or modification of any Federal or state contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The bidder/company shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants and contracts and subcontracts under grants, subgrants, loans, and cooperative agreement), which exceeds \$100,000, and that all such subrecipients shall certify and disclose accordingly.
4. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each failure.

Name of Bidder / Company Name Alliant Engineering, Inc,

Type or print name Michael R. Anderson

Signature of authorized representative  Date 3 / 19 / 20

Principal (Title of authorized official)

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS--
PRIMARY COVERED TRANSACTIONS**

Instructions For Certification

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion- Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS--
PRIMARY COVERED TRANSACTIONS**

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust


statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification;

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Michael R. Anderson, Principal



Signature/Authorized Certifying

Official Typed Name and Title

Alliant Engineering, Inc,

March 19, 2020

Applicant/Organization Date Signed