

Highway 23 New London Safety & Access Assessment

MINNESOTA DEPARTMENT OF TRANSPORTATION



Prepared by



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Executive Summary

The Minnesota Department of Transportation (MnDOT), Kandiyohi County and City of New London conducted the Highway 23 New London Safety & Access Assessment to develop a common vision and guidance for managing the corridor now and into the future. Goals, objectives, and evaluation measures were developed by the assessment team to address the issues and concerns of the roadway by stakeholders and the public. The safety assessment included a comprehensive public engagement process, including receiving input through in-person meetings and online opportunities.

Overview of Assessment

MnDOT and its partners, the City of New London, Kandiyohi County, and New London Township, initiated a safety and access assessment along Highway (Hwy) 23 in New London. The assessment initially included evaluating three intersections along Hwy 23: County Road (CR) 40, Hwy 9, and 153rd Avenue NE. Based on feedback and input gathered through the stakeholder and public engagement process, North Shore Dr. was added as an intersection that was evaluated as part of the assessment. See illustration of assessment limits on the following page.

Importance of Highway 23

Hwy 23 is a regional highway that connects Interstate 90 (I-90) in the southern portion of the state to Interstate 94 (I-94) near St. Cloud. From I-94, access is provided to the Twin Cities to the southeast and to Fargo to the northwest. The City of New London would like to plan for future development adjacent to Hwy 23 as it is an area attractive to the City and developers. With the outcome of the assessment, the partners wanted to ensure future development does not compromise the transportation resources or safety.

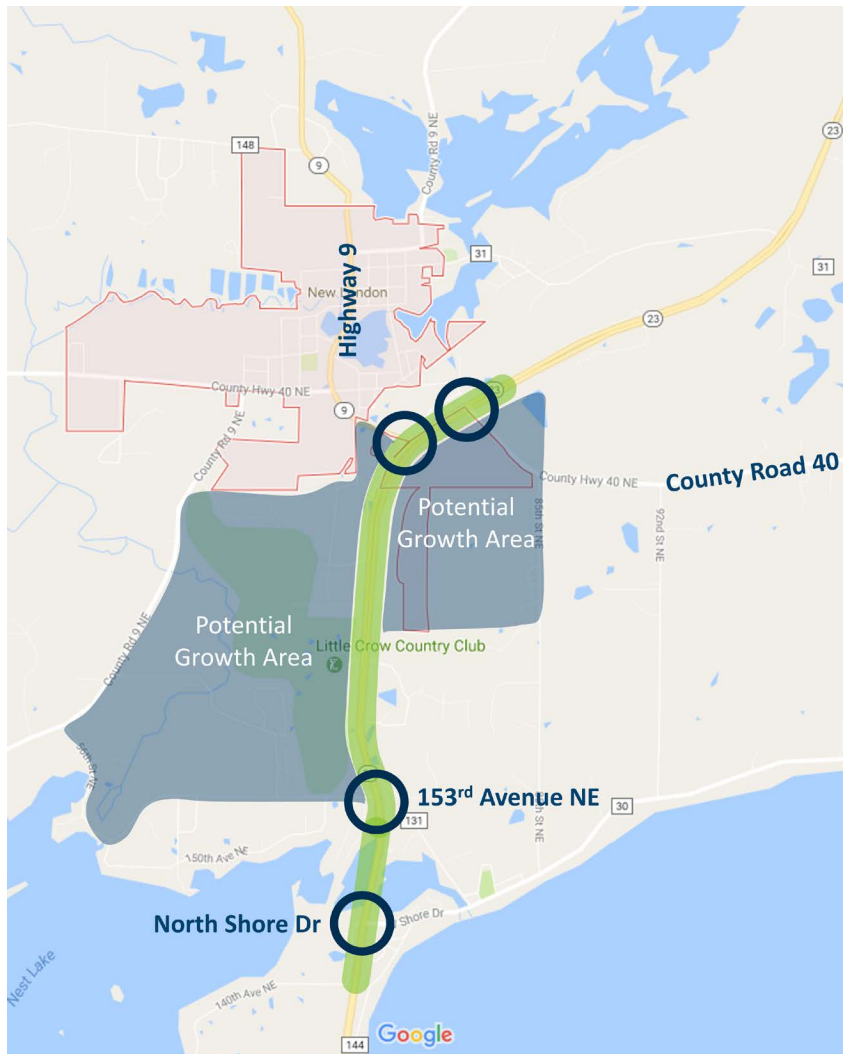
Purpose of Assessment

The purpose of the assessment was to evaluate existing conditions and develop near- and long-term strategies to reduce serious and fatal crashes while managing the corridor in the future, including future development, mobility, accessibility, and overall roadway safety. The assessment also examined if the number and severity of crashes along Hwy 23 were abnormal and determined the primary factors for the crashes. The safety improvement alternatives developed were part of the common vision established through consensus among the assessment partners, residents, business owners, regional roadway users, and elected officials.

Purpose of Assessment:

- Identify opportunities to reduce serious and fatal crashes along Hwy 23 in New London.
- Facilitate discussion between local partners, stakeholders, and the public to seek input on concerns and priorities.
- Develop recommendations and establish priorities for improving safety that balance future development, mobility, and accessibility, in both the near- and long-term.





This report outlines the overall process of the assessment, engagement strategies used to authentically and conveniently engage stakeholders and the broader New London community, the analysis showing why improvements are necessary along this corridor, and the final recommendations for safety improvements to be undertaken as funding becomes available. With the assessment complete, the assessment partners can begin pursuing funding opportunities to address the recommended safety improvements along the Hwy 23 corridor in New London.

Assessment Process

Separated into three distinct phases, the overall assessment process is illustrated and described below.

Phase 1 included verifying the purpose and need for conducting the assessment and identification of issues and priorities. This included collecting traffic counts and observing the speeds at which drivers currently drive. This phase also included analyzing the area’s crash history and the land use and development plan. An important outcome of this first phase was to understand how Hwy 23 functions today, and understand anticipated future changes that may impact the corridor, including future development.

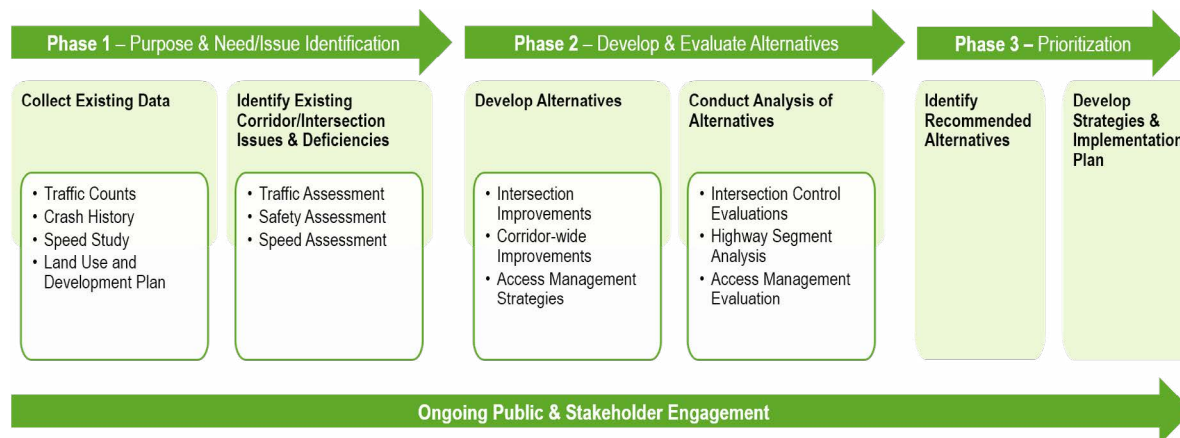
Phase 2 included identifying several potential alternatives at each of the four intersections and evaluating if each strategy effectively addressed current issues and concerns. Alternatives developed were a result of both public comments received and the engineering analyses completed. Further analysis was completed to determine the potential effectiveness of the alternatives.

Phase 3 included identifying the recommended alternatives at each location and priorities for pursuing future funding. Alternatives were recommended based on their potential effectiveness to improve safety. Public input informed corridor priorities and the plan to implement improvements.

Phase 1 public engagement introduced the safety assessment, its purpose and goals, and the timeline to stakeholders and the public. Input collected helped inform the understanding of existing issues, concerns, and priorities along Hwy 23.

Input received during public engagement in Phase 1 influenced alternatives developed for **Phase 2**. These alternatives required education regarding how they would improve the safety of the corridor. In some cases, education was provided to demonstrate how to navigate certain alternatives.

Public engagement from Phase 2 was incorporated into **Phase 3** to influence the preferred recommended safety improvements. Additional education on improvement alternatives was included in Phase 3.



Project Management Team

A Project Management Team (PMT) was established to help guide the assessment. In addition to the consultant team, the PMT comprised of representatives from the following agencies and organizations:

- MnDOT
- City of New London
- Kandiyohi County
- New London Township

The PMT was responsible for overseeing day-to-day progress of the assessment and the tasks associated, including scheduling, coordination, review and development of draft materials and presentations, and the final recommendations. The monthly PMT meetings provided guidance with developing and implementing the various public engagement activities.

Public and Stakeholder Outreach

A range of in-person and online public engagement opportunities were offered throughout the assessment process to solicit input from local and regional users along Hwy 23 corridor in New London. Engagement opportunities were designed to be inclusive, collaborative, and convenient to allow the assessment team to reach as many people as possible. This is important to ensure all perspectives are heard and considered.

Assessment Website

MnDOT hosted and maintained the assessment website. The website contained background information, a corridor map, promotion of upcoming public engagement events, meeting materials, and project management contact information. The website had a total of 1,553 visitors.



Hwy 23 Safety Assessment

New London

[Project Home](#) [Background](#) [Public Meetings](#) [Accessibility](#) [Contacts](#)

Background

The Minnesota Department of Transportation, Kandiyohi County and City of New London are partnering to conduct a safety assessment of Hwy 23. The safety assessment is being lead by SRF Consulting Group. SRF Consulting Group recently completed a safety assessment of [Hwy 23 through Marshall](#).

The Hwy 23 Safety Assessment's mission is to develop a common vision and guidance for managing the Hwy 23 corridor now and into the future. Goals, objectives and evaluation measures are currently being developed by the assessment team. The purpose of the safety assessment is to:

- Evaluate existing conditions at the following intersections:
 - Hwy 23 & County Road 40
 - Hwy 23 & Hwy 9
 - Hwy 23 & 153rd Ave
 - North Shore Drive
- Facilitate discussion between local partners, stakeholders and the public
- Provide list of opportunities and recommendations and establish priorities
- Build consensus for a vision that balances future development, mobility, accessibility and safety for Hwy 23 now and into the future
- Develop a common vision to identify, prioritize and design future safety improvements

The safety assessment will consist of [three phases](#):

1. **Purpose & Need/Issue Identification (current phase: March - May 2017)**
2. Develop & Evaluate Alternatives (June - August 2017)
3. Prioritization (August - November 2017)

Public Engagement will occur during each phase.

Public Open Houses

Two public open houses were held at Peace Lutheran Church in New London throughout the assessment. The purpose was to share information about the assessment face-to-face with community members and ask for their experiences and feedback based on the information presented.

Each open house was set-up as an informal, drop-in style event with boards on display around the perimeter of the gym. Attendees could view any display board depending on their topic of interest.

The second open house included a presentation. All informational materials shared at the open houses were made available on the assessment website. Assessment partners were available to help answer questions, address concerns, and collect input from attendees.



Conducting Proactive and Transparent Outreach:

- Share information broadly.
- Seek input through multiple in-person and online activities
- Solicit input to further understand perceptions, concerns, and opportunities for improvements
- Receive meaningful feedback to help shape the recommended improvements
- Build consensus for a vision for Hwy 23



The first public open house held in May 2017 occurred at the beginning of the assessment. The open house served as an opportunity to introduce the assessment, the team, and explain how the public would play a role in shaping the final recommendations. This was the first time the assessment team met with community members in-person and allowed for two-way dialogue to occur. Verbal and written feedback were documented providing a foundation of information for guiding the assessment moving forward.

The second public open house held in October 2017 was the culmination of data collection, analysis, and public engagement efforts. A formal presentation highlighted the analysis of alternatives and recommendations, and benefits of each, while also noting why additional alternatives were considered but subsequently dismissed. Additional information was provided on potential next steps to fund improvements. Audio from the presentation was recorded and synced with the PowerPoint presentation, along with closed captioning, and posted to the website and promoted on the Facebook page.

Topics from Open House #1:

- Assessment overview
- Purpose and goals
- Schedule and process
- Importance and role of public and stakeholder engagement
- Input on issues and concerns

Topics from Open House #2:

- Safety improvement alternatives
- Recommended improvements
- Education on alternatives
- Project development and delivery process



Local Government Presentations

Elected representatives are important decision-makers in the community, therefore, it was important for the assessment partners to build dialogue and promote transparency early-on with these officials. The team established trust and proactively addressed questions and concerns by presenting to the New London City Council, the Kandiyohi County Board of Commissioners, and the New London Township during their regularly scheduled meetings. Discussion included constraints and opportunities of the corridor, while simultaneously educating officials about the assessment purpose and goals.

Focus Group Meetings

Focus group meetings were held at key points during the assessment with four stakeholder groups. Each meeting consisted of a small group discussing common issues, which was important in building a positive relationship among community members. The purpose of each meeting was to understand their interests and concerns and discuss potential solutions.

Community Presentations:

- New London City Council
- Kandiyohi County Board of Commissioners
- New London Township

Focus Groups:

- Local Merchants
- Freight Businesses
- New London-Spicer Public Schools
- Community Safety (Sheriff/Police, Fire, EMS)

Pop-Up Community Events

One pop-up meeting was held directly along the Hwy 23 corridor in New London after draft recommendations had been developed. Pop-up events are designed to tie into already existing events by engaging stakeholders and the public in spaces where they already are. We wanted to make it convenient for them to provide feedback by going directly to them.

The goal was to discuss the status of the safety assessment and the draft recommendations, and interact with a wide range of attendees. This created an opportunity to have informal conversations with attendees and receive feedback on the draft recommendations before they were finalized.

Glacial Ridge Winery:

A pop-up meeting was held on a Saturday afternoon at the local winery due to its adjacent location to Hwy 23. The goal was to reach a new demographic audience that may otherwise not hear about the assessment or attend in-person public meetings, including both local and regional users. Two boards from the second open house were on display along with a handout detailing the recommendations at each intersection. The assessment team staffing the meeting interacted with attendees and received verbal comments. The pop-up meeting was promoted on the assessment Facebook page.



Communications

Multiple communication channels were used to notify New London residents, community members, and regional users about the assessment's public engagement activities.

Email Announcements:

Email announcements were distributed through MnDOT. Email announcements were sent one to two weeks prior to each open house.

Newsletter Mailings:

Two newsletter mailings were sent out to New London residents to introduce the assessment, provide an update about progress, and highlight upcoming public engagement opportunities. Each newsletter was posted to the project website.

Social Media:

MnDOT established a Facebook page for the assessment. Regular updates were shared, including promotion of upcoming open houses and the pop-up meeting. MnDOT ran Facebook ads in advance of both open houses and for the video presentation from the second open house.

Newsletter Mailings:

Two newsletter mailings were sent out to New London residents to introduce the assessment, provide an update about progress, and highlight upcoming public engagement opportunities. Each newsletter was posted to the project website.

Press Releases:

Press releases were sent to various media outlets and posted on the MnDOT website prior to the two open houses.

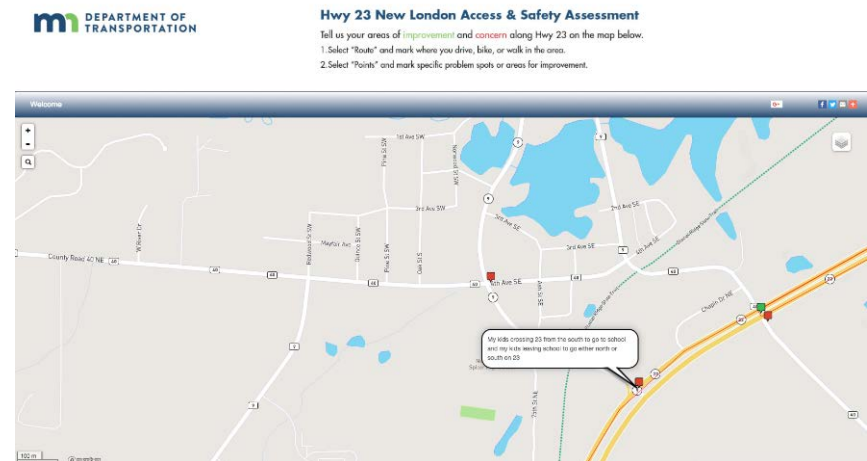
Traditional Media Outreach:

To further disseminate information about the assessment, MnDOT drafted and distributed meeting notices, media advisories/press releases, and additional updates to local media outlets.

Online Comment Mapping

To gather current perceptions and identify the needs, concerns, and areas of opportunity along the Hwy 23 corridor in New London, we conducted one online mapping exercise during the assessment. The exercise was conducted using WikiMapping, an online comment mapping tool (as shown in the graphic below). This tool allowed users to identify problem spots and areas of concern on the interactive map depicting the corridor using Google Maps.

We asked users to place pins at specific locations indicating problem spot areas (red) or areas of opportunity (green). Users could also provide written comments at each location to further explain why they placed that certain pin. The feedback received informed the assessment partners of concerns amongst the users along Hwy 23. This specific opportunity for public engagement was promoted on the assessment website and on the assessment Facebook page.



Map comments:

- Highway 9/Highway 23 - My kids crossing 23 from the south to go to school and my kids leaving school to go either north or south on 23.
- County Road 40/Highway23 - Even if CR 40 gets realigned with State Highway 9, please make sure people and continue to use this access from both directions.

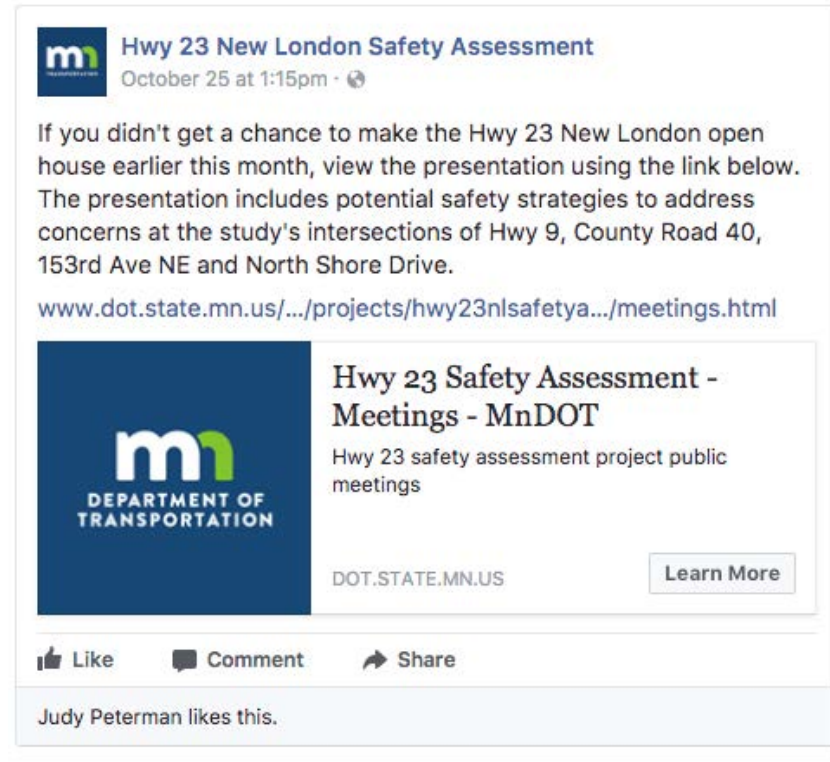
Social Media

Two social media outlets, Facebook and Twitter, were used to broaden the awareness of the assessment and engagement activities. Social media content included directing users to the assessment website for more information and the option to review materials presented at previous meetings. Promoting engagement activities through these popular online outlets provided additional opportunities for stakeholders and the public to stay engaged with the assessment and share their voice.

Targeted Facebook ads were published to promote the two open houses, the video presentation following the second open house, and the online WikiMap. Each Facebook ad targeted users 18-65+ years of age who lived within 20 miles of New London. These demographics were used to ensure we were receiving feedback from a wide range of ages as well as local and regional corridor users.



The image shows a Facebook event page for the 'Hwy 23 Safety Assessment Open House'. At the top is a photograph of a modern, two-story building with a mix of white, grey, and blue siding, and a green lawn in front. Below the photo, the event title 'Hwy 23 Safety Assessment Open House' is displayed in bold, with the date 'OCT 3' to its left. Underneath the title, it says 'Public · Hosted by Hwy 23 New London Safety Assessment'. There are two buttons: 'Interested' with a star icon and 'Going' with a checkmark icon. The event time is listed as 'Tuesday, October 3 at 5 PM - 7 PM' with a clock icon and 'about 1 month ago'. The location is 'Peace Lutheran New London' with the address '100 4th Ave SW, PO Box 286, New London, Minnesota 56273' and a 'Show Map' link.



The image shows a Facebook post from the 'Hwy 23 New London Safety Assessment' page, dated October 25 at 1:15pm. The post text reads: 'If you didn't get a chance to make the Hwy 23 New London open house earlier this month, view the presentation using the link below. The presentation includes potential safety strategies to address concerns at the study's intersections of Hwy 9, County Road 40, 153rd Ave NE and North Shore Drive.' Below the text is a link: 'www.dot.state.mn.us/.../projects/hwy23nlsafetia.../meetings.html'. There is a large blue advertisement for 'Hwy 23 Safety Assessment - Meetings - MnDOT' with the MnDOT logo and a 'Learn More' button. At the bottom of the post are 'Like', 'Comment', and 'Share' buttons, and a notification that 'Judy Peterman likes this.'

WHAT WE HEARD



Travel Speeds

- Travel speeds increase the severity of crashes.
- Drivers are driving too fast, making it difficult to judge traffic.
- With change in speed limit at 153rd Avenue (from 55 mph to 65 mph), it is difficult to judge gaps in traffic from both directions.



Traffic

- Traffic congestion is an issue at Hwy 9, especially before and after school.
- School traffic is unexpected for non-local drivers since the school is not visible from Hwy 23.
- Recreational traffic causes congestion during the summer months.
- Truck traffic at Hwy 9 creates problems since trucks cannot yield in median.
- Cars weave between Hwy 9 and CR 40.



Driver Behavior

- Inexperienced drivers make poor decisions.
- Most crashes involve younger and older drivers.



Future Development

- Future development adjacent to Hwy 23 will create additional traffic and require access.
- CR 40 is a future bike route – need to provide safer crossing.
- Future hotel and conference center at golf course will increase traffic.
- Future development will create distractions for drivers.



Intersection Design

- Roadway curves and grades make visibility of opposing traffic difficult.
- Lack of intersection lighting is a visibility issue at CR 40 and at 153rd Avenue.
- Wide median at Hwy 9 causes confusion for drivers.
- Without the ability to yield in median at 153rd Avenue, wait times to access or cross Hwy 23 are long.
- Median width is inconsistent – Hwy 9 and CR 90 allow for yielding in the median but 153rd Avenue does not.
- Other intersections have similar issues, such as North Shore Drive, 132nd Avenue, and 187th Avenue.



Suggested Improvements

- Make all medians wider at intersections.
- Lower posted speed limit.
- Reduce roadway curvature and grade changes at intersections.
- Install J-Turns.
- Install traffic signal or roundabout at Hwy 9.
- Realign CR 40 at Hwy 9 and install traffic signal or roundabout.
- Realign CR 40 at Hwy 9 and build an interchange with roundabouts.
- Install intersection lighting at CR 40 and at 153rd Avenue.
- Install acceleration lanes onto Hwy 23.

The graphic on the left summarizes the input received following the first open house and on the WikiMap. This information was provided to the public at follow-up events.

The second open house served to educate attendees on the recommended solutions and to answer questions as to why other solutions were not recommended. Traffic signal control was the main topic of discussion. The assessment team educated attendees that while traffic signals have benefits, they can also introduce additional safety issues when they are installed in locations where traffic levels do not support their installation, such as our study intersections. Further, additional reconstruction of Hwy 23 would be needed to narrow the median to provide a safer signalized intersection, which is not as cost effective as the recommended solution.

Purpose & Need for Action

Existing corridor and intersection issues and deficiencies were identified through technical work early on to assist the assessment partners in informing the public. This included reviewing, collecting, and evaluating how many vehicles travel the corridor, the history of crashes, and the speeds at which drivers are currently driving. This also included understanding how future land uses and development are expected to change corridor performance.

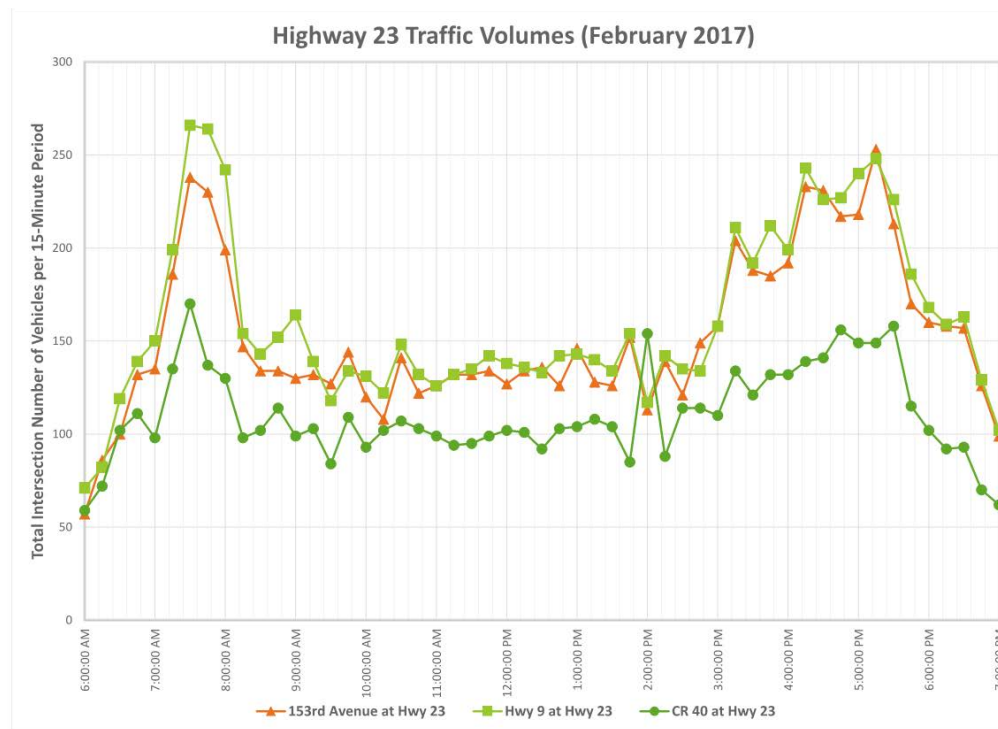
Traffic Assessment

The amount of traffic using Hwy 23 was determined by counting vehicles in February of 2017. These counts were used to establish morning and afternoon peak hour conditions and to estimate the amount of traffic that uses Hwy 23 on an average day. We acknowledge that traffic can vary by time of day, and by season, but February represents a typical day. Analysis was completed to ensure recommendations account for potential variations in traffic levels. Using this information,

an existing traffic assessment was completed for the CR 40, Hwy 9, and 153rd Avenue NE intersections. Since North Shore Dr. was added after the assessment began, traffic data was not collected at this intersection, but based on review of available data online, traffic levels are comparable to those at 153rd Avenue NE.

The traffic assessment determined the amount of delay that drivers experience while driving through or across an intersection. Based on industry standards, the average delay that is experienced during the morning and evening peak periods, which is an average of less than 10 seconds per vehicle at the worst location from a delay perspective, is acceptable. The graphic below illustrates how traffic levels change throughout the day at the CR 40, Hwy 9, and 153rd Avenue NE intersections.

One of the common themes from public outreach was concern with traffic levels during the morning school peak period – this was considered when developing and evaluating alternatives as traffic delays would be higher during these conditions.



In addition to the existing intersection traffic assessment, a future year 2040 traffic assessment was completed. This assessment used volume levels that took future growth and changes in land use into consideration. Even with the anticipated growth and changes in land use, the existing roadway is expected to be able to accommodate traffic in the year 2040.

Safety Assessment

The Minnesota Crash Mapping Analysis Tool (MnCMAT) was used to obtain the crash history for the years 2011 through 2015, which is the most current data available. This data included the type of crash, when and where the crash occurred, the severity of the crash, and contributing factors to the crash. The total number of crashes reported at each assessment intersection is illustrated in the graphic on the right.

CR 40:

- 6 total crashes
- 1 fatal crash
- 80% were right angle crashes

Hwy 9:

- 17 total crashes
- 1 fatal crash
- 55% were right angle crashes

153rd Avenue NE:

- 5 total crashes
- 40% were right angle crashes

North Shore Dr:

- 5 total crashes
- 40% were right angle crashes

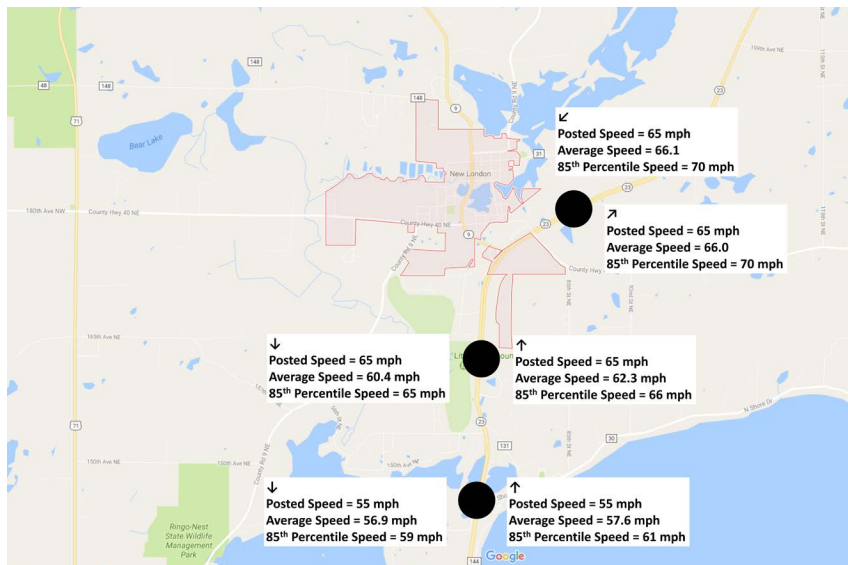
The single most crash type occurring at all locations is right angle crashes. These types of crashes are typically severe along similar types of roadways, which can lead to serious and fatal crashes.

One fatality was reported at CR 40 and one was reported at Hwy 9. As previously noted, the purpose of this assessment is to address serious and fatal crashes. Although not indicated in the results above, we understand there were additional crashes and fatalities that occurred in 2016, and we were mindful of these as we identified recommendations for Hwy 23.



Speed Assessment

The speed at which drivers are currently driving was determined using radar equipment at three locations. The average and 85th percentile speeds were determined (see graphic on the right). The 85th percentile speed is the speed which 85% of drivers are traveling at or below. If the 85th percentile is close to the posted speed limit, it is a good indication that the speed limit is set appropriately. Results of the speed assessment indicate the posted speed limit is appropriate at the locations reviewed.



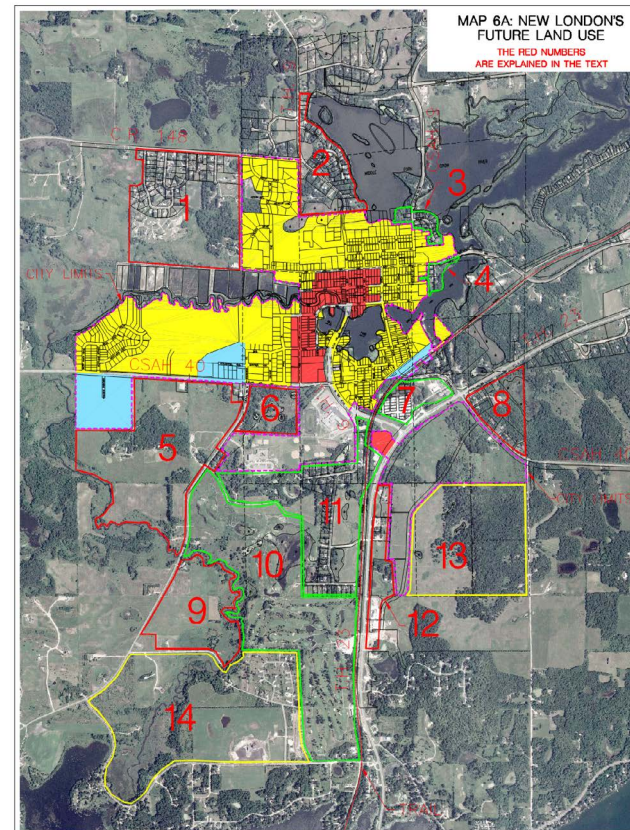
Future Land Uses

The City of New London's Comprehensive Plan indicates the potential for the City to expand, particularly to the south and east of Hwy 23. This development, nearly 300 acres, is expected to comprise of commercial and residential uses.

Peterson Parkway was recently constructed providing access to areas 12 and 13 shown on the map to the right. Owners of recently developed properties along this roadway have expressed concerns with

access and safety to Hwy 23. The concerns will only be exacerbated as future development occurs.

In addition to the City's plans, Kandiyohi County has expressed desires to potentially realign CR 40 from its current intersection with Hwy 23 to the southwest and form a future fourth-leg to the Hwy 9 intersection. The PMT reached consensus that any safety improvement alternatives recommended need to ensure this connection can be made in the future without compromising traffic delays and safety.



Safety Improvement Alternatives & Recommendations

With a solid understanding of the existing corridor, intersection issues and deficiencies, and concerns from the community, alternatives were developed, evaluated, and recommended at each location. Evaluation measures focused on how safety would be addressed, how wait times would be changed, how travel speeds and driver behavior would change, and how future development would be accommodated. These measures were considered relative to cost of the alternatives.

Hwy 9 Intersection

Alternatives were developed and evaluated at the Hwy 9 intersection largely to address the following:

- Existing crash history, which includes serious and fatal right angle crashes.
- Long wait times, particularly in the morning during peak school times.
- Safety concerns with the wide median design, which is confusing for drivers but not wide enough to store long trucks in the median.
- Sight line concerns resulting from the wide median and curves approaching the intersection.
- Concerns with travel speeds along Hwy 23.
- The ability to accommodate additional traffic resulting from future development.

A wide range of strategies were considered, including improvements to the intersection design and consideration of changing how the intersection is controlled. The graphics on the following page illustrate the recommended improvements at Hwy 9 and other alternatives considered but dismissed. Reasons why the alternatives were not recommended are also included in the graphics, and they can be summarized as follows:

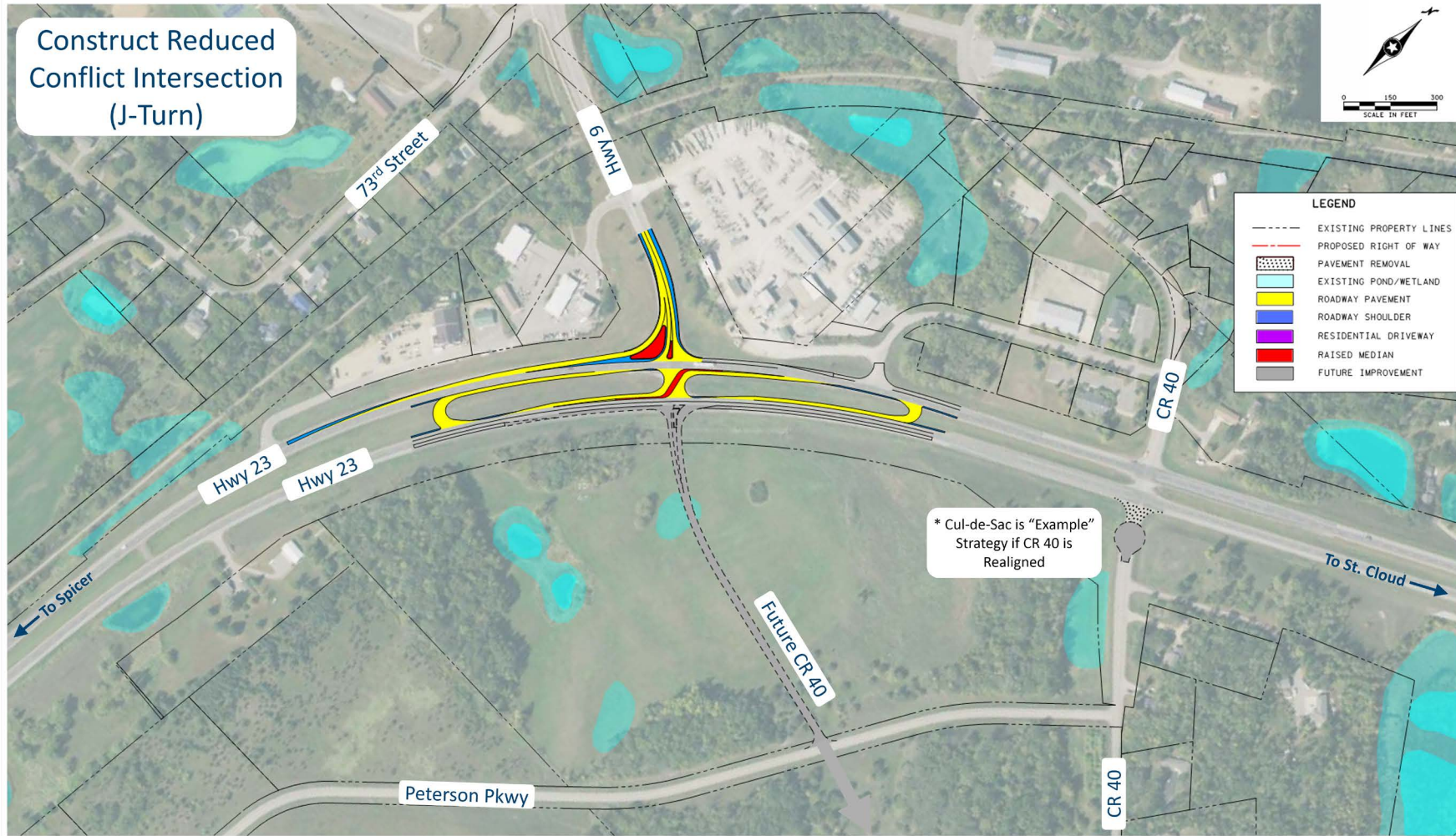
- Alternative does not adequately address safety issues at Hwy 9, or can worsen the safety issues.
- Alternative does not address driver confusion in the median.
- Alternative does not maintain preferred functionality of Hwy 23 as a mobility corridor.
- Alternative is not cost-effective relative to its expected benefits.
- Alternative is expected to have impacts prohibitive to the stakeholders.

Based on the evaluation of alternatives, a Reduced Conflict Intersection, commonly referred to as a “J-Turn”, is recommended at Hwy 9. Justification for this recommendation is provided on page 18. Details of the J-Turn will be refined through the layout development process, including as to maintaining or removing the existing right-turn acceleration lane heading towards Spicer.

CR 40 Intersection

Early in the assessment it was determined that Kandiyohi County would like to realign CR 40 from its current alignment intersecting at Hwy 23 to Hwy 9 forming the east leg of the Hwy 9 intersection. Based on this, the PMT agreed to leave CR 40 in its current form and further evaluation will be completed when more information becomes available regarding the potential realignment. Future public and stakeholder outreach will be included when determining the most appropriate alignment of CR 40.

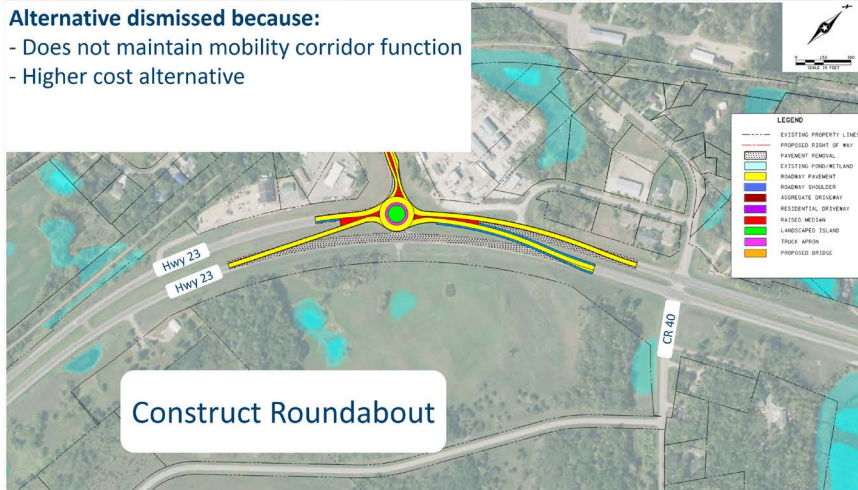
Recommended Improvements at Hwy 9



Other Alternatives Considered at Hwy 9

Alternative dismissed because:

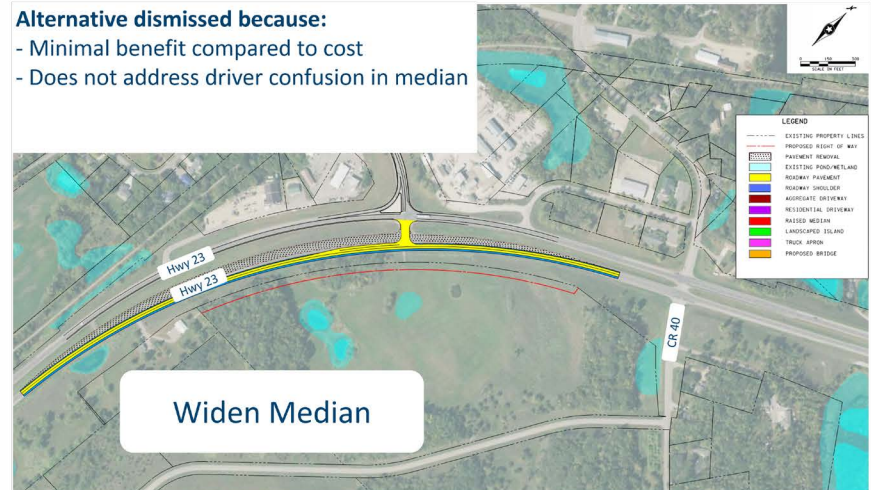
- Does not maintain mobility corridor function
- Higher cost alternative



Construct Roundabout

Alternative dismissed because:

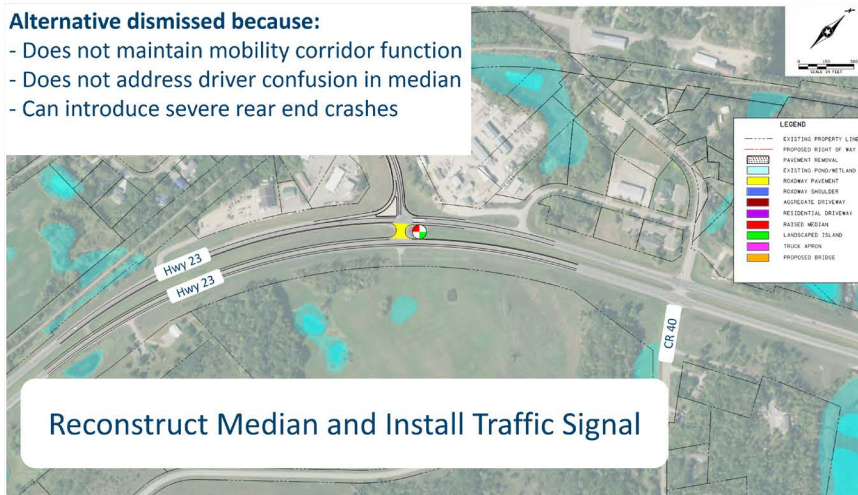
- Minimal benefit compared to cost
- Does not address driver confusion in median



Widen Median

Alternative dismissed because:

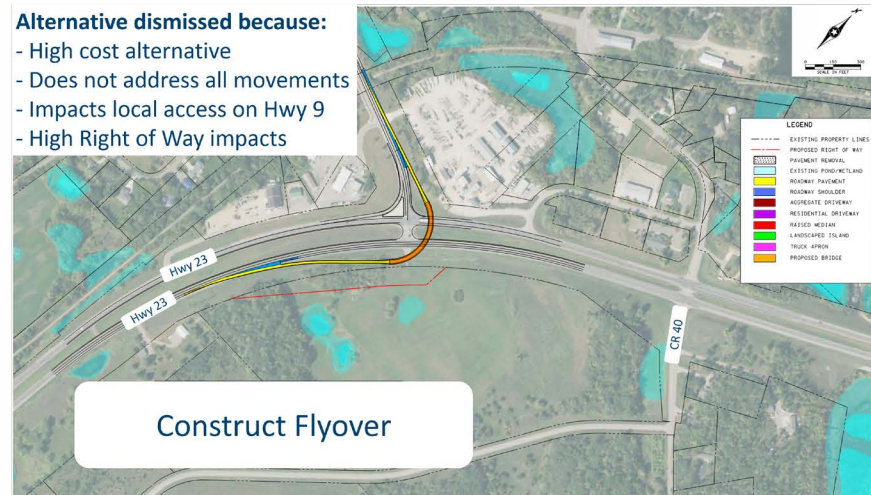
- Does not maintain mobility corridor function
- Does not address driver confusion in median
- Can introduce severe rear end crashes



Reconstruct Median and Install Traffic Signal

Alternative dismissed because:

- High cost alternative
- Does not address all movements
- Impacts local access on Hwy 9
- High Right of Way impacts



Construct Flyover

Recommendation for Hwy 9 Intersection

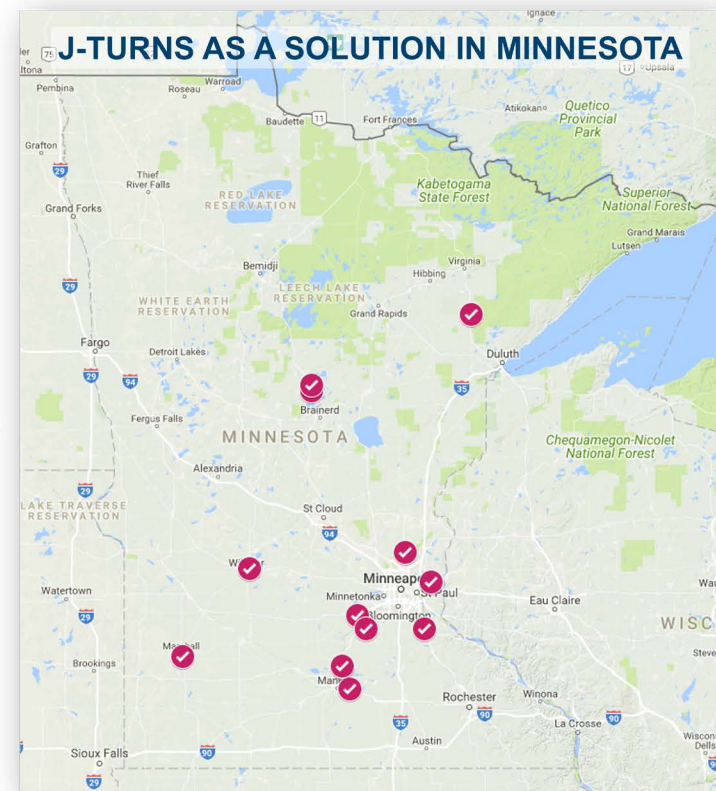
J-Turns have proven to be effective addressing the safety needs identified at the Hwy 9 intersection. Further, this alternative can accommodate the potential realignment, and associated development, of CR 40. Several J-Turns have been installed throughout Minnesota as a cost-effective safety solution. The graphic below summarizes how J-Turns improve safety, as well as other benefits that have been realized.

HOW DO THEY IMPROVE SAFETY?

- ✓ Reduce right-angle crashes by decreasing conflict points
- ✓ Reduce fatalities and injuries caused by right angle crashes on 4-lane divided highways
- ✓ Studies show a 70% reduction in fatalities and a 42% reduction in injury crashes

WHAT OTHER BENEFITS DO THEY OFFER?

- ✓ Can be designed and built in approximately one year
- ✓ Often less expensive than constructing an intersection with a stop light or roundabout at a fraction the cost of an interchange
- ✓ Acquiring additional land is typically not needed



1. US 71 and County Rd 24, Willmar
2. Hwy 212 and Hwy 284, Cologne
3. Hwy 65 and 169th Avenue, Ham Lake
4. Hwy 53 and County Rd 52, Cotton
5. Hwy 36 and Demontreville Trail, Lake Elmo
6. Hwy 169 and Hwy 22, Saint Peter
7. Hwy 169 and St. Julien St, Saint Peter
8. New Hwy 371 and County Rd 168/107, Pequot Lakes
9. Old Hwy 371 and County Rd 112, Pequot Lakes
10. Hwy 23 and Saratoga Street, Marshall
11. US 52 and County Rd 66, Vermillion
12. US 14 and County Rd 17, Eagle Lake
13. US 169 and Minnesota's Largest Candy Store, Jordan

153rd Avenue NE Intersection

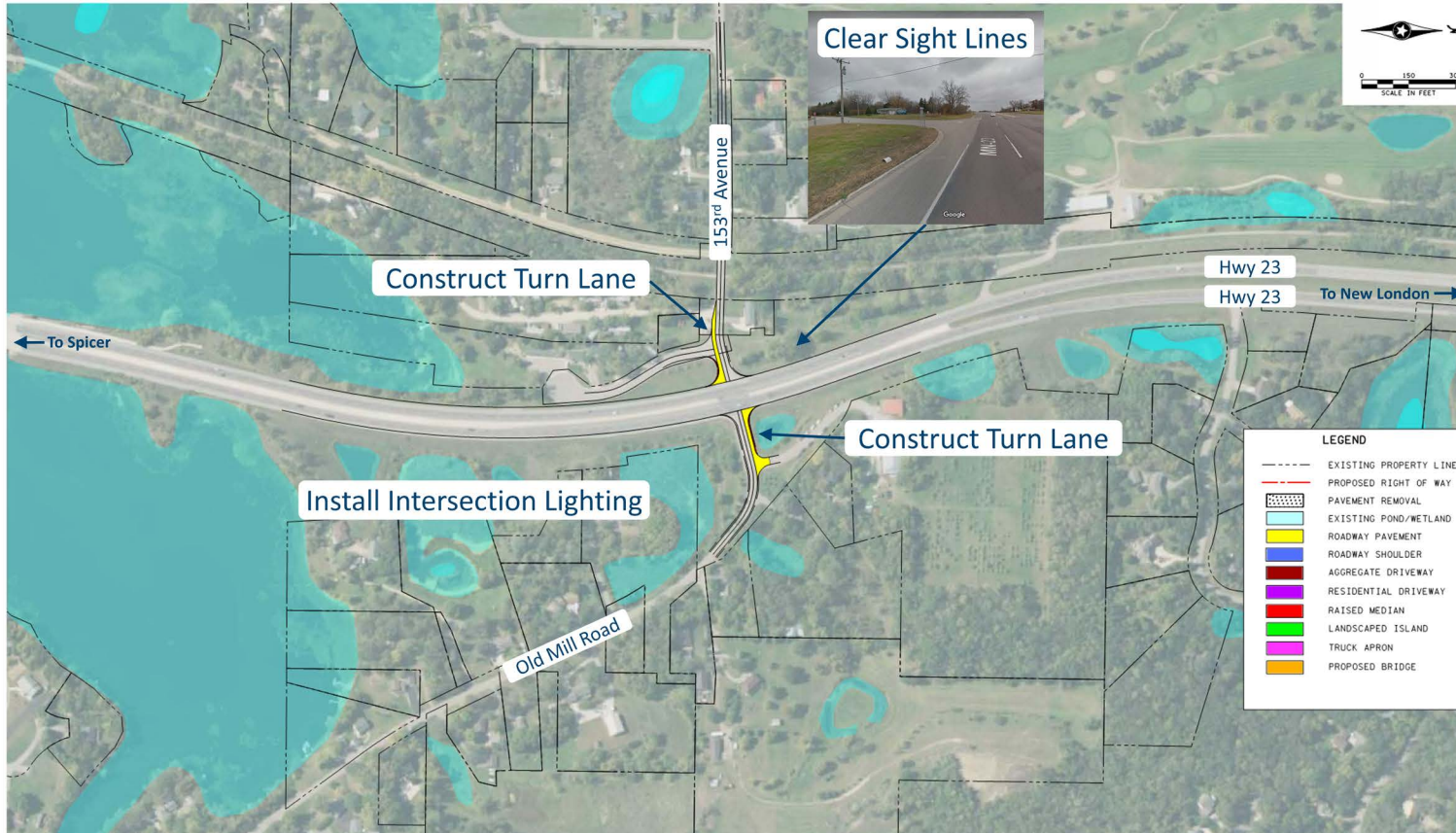
Alternatives were developed and evaluated at the 153rd Avenue NE intersection with a focus on improving sight lines, reducing wait times for traffic entering Hwy 23, and increasing the visibility of the intersection. Alternatives ranged from clearing of shrubs to minor geometric improvements to major geometric improvements with traffic control changes. Preliminary evaluation indicated the cost of such major improvements relative to the benefits deemed these alternatives not feasible and they were removed from further consideration. Graphics illustrating the alternatives are on the following pages. Based on the

evaluation of alternatives, the following measures are recommended at 153rd Avenue NE to improve safety:

- Clear sight lines on the west leg for drivers looking towards New London.
- Install intersection lighting to improve visibility.
- Install right-turn lanes on the minor approaches to reduce delay for drivers.

New London Township is currently designing the turn lanes and these improvements are planned for construction in 2018.

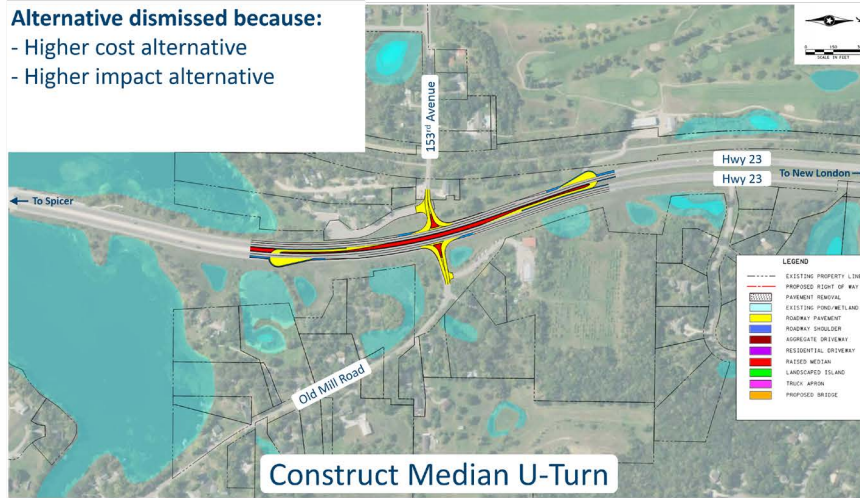
Recommended Improvements at 153rd Avenue NE



Other Alternatives Considered at 153rd Avenue NE

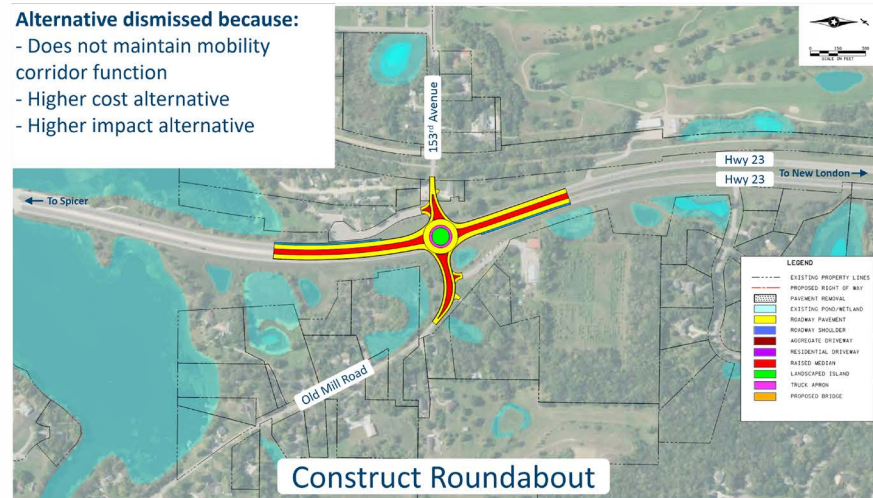
Alternative dismissed because:

- Higher cost alternative
- Higher impact alternative



Alternative dismissed because:

- Does not maintain mobility corridor function
- Higher cost alternative
- Higher impact alternative



North Shore Dr. Intersection

Like 153rd Avenue NE, alternatives were developed and evaluated at the North Shore Dr. intersection with a focus on improving sight lines, reducing wait times for traffic entering Hwy 23, and increasing the visibility of the intersection. Alternatives ranged from clearing sight lines to major geometric improvements with traffic control changes. Preliminary evaluation indicated the cost of such major improvements relative to the benefits deemed these alternatives not feasible and they were removed from further consideration. Graphics illustrating

the alternatives are on the following pages. Based on the evaluation of alternatives, the following measures are recommended at North Shore Dr. to improve safety:

- Clear sight lines on the east leg for drivers looking towards Spicer.
- Install intersection lighting to improve visibility.

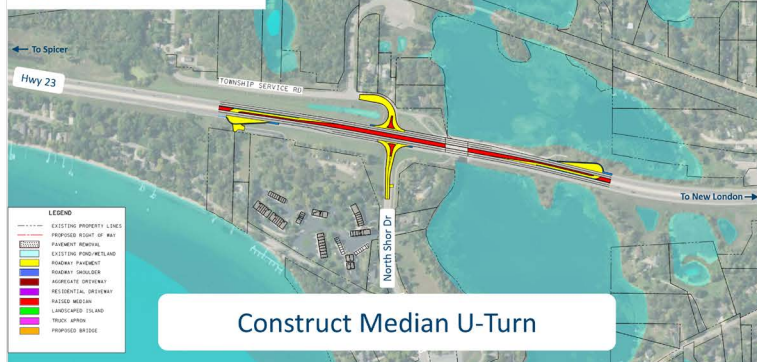
Details on ways to improve the sight lines looking towards Spicer from the east leg will be refined and further vetted as funding becomes available



Recommended Improvements at North Shore Dr.

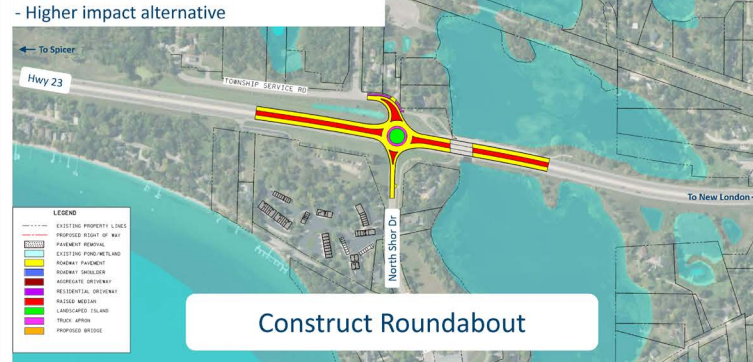
Alternative dismissed because:

- Higher cost alternative
- Higher impact alternative



Alternative dismissed because:

- Does not maintain mobility corridor function
- Higher cost alternative
- Higher impact alternative



Other Alternatives Considered at North Shore Dr.

Setting Speed Limits & Reducing Speeds

Throughout the public and stakeholder engagement process the assessment partners heard concerns regarding travel speeds along Hwy 23. It was often suggested that the posted speed limit should be lowered through the Hwy 9 intersection to make the intersection safer.

Research has shown there is little change in the speed pattern after a change in the posting of a speed limit.

Several speed zoning studies have been conducted throughout Minnesota. These studies indicate that changing the posted speed limit has little or no impact on driver speeds, and drivers select their speed based on the characteristics of the roadway.

Per Designing Roads that Guide Drivers to Choose Safer Speeds (Connecticut Cooperative Highway Research Program, November 2009), “Drivers slow down where the road feels ‘hemmed in’ or there is noticeable street activity...they speed up where the road feels ‘wide open’ or street activity is less noticeable.” Hwy 23 was built with the intention to serve higher travel speeds as regional mobility corridor.

Illustrated below are example roadway conditions with different posted speed limits. The conditions range from a 40-mph roadway with raised median, curb and gutter, sidewalk, trees, and close building set-backs to a 65-mph roadway with a wide grass median and wide paved shoulders without curb and gutter. These differing conditions influence the speed at which drivers will drive.

Minnesota Speed Zoning Studies

Location	Posted Speed Before (mph)	Posted Speed After (mph)	85 th Percentile Speed Before (mph)	85 th Percentile Speed After (mph)	Change in Travel Speed (mph)
1	40	30	34	34	0
2	50	40	44	45	+1
3	45	40	48	50	+2
4	30	45	49	50	+1
5	40	45	45	46	+1
6	50	40	52	51	-1
7	30	35	37	40	+3
8	35	30	37	37	0
9	30	35	39	40	+1



Hwy 23 – Spicer
Posted Speed = 40



Hwy 23 – New Lon
Posted Speed = 55



Hwy 23 – New Lon
Posted Speed = 65

Next Steps

With this assessment complete, the assessment partners can begin pursuing funding opportunities

to begin addressing the priorities for Hwy 23 in New London. This assessment is the initial step of the first phase of the project development and delivery process, as illustrated in the graphic below.

Completing this planning effort allows the assessment partners to develop a detailed project scope and schedule. Design and construction can take place once funding has been identified and secured. Implementing major infrastructure projects takes time – it typically takes approximately 2 to 5 years to complete this process of developing and delivering a project.

MnDOT and its partners, the City of New London, Kandiyohi County, and New London Township, are committed to working together to implement the recommendations identified in this safety assessment. Depending on the project being initiated, the appropriate agency will take the lead on pursuing funding and delivering the project. Public and stakeholder engagement, as well as education on improvements, will continue in the future as improvements are designed and implemented. Further, speeds will continue to be monitored for the potential change in posted speed limit.



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