Highway 61 (Hugo) Visioning Study

FINAL REPORT

Washington County

Table of Contents

Introduction 3
Public Involvement 6
Existing Conditions 9
Traffic Analysis 13
Key Transportation Issues 18
Corridor Vision and Study Outcomes 20
Next Steps and Implementation Strategies 27

Figures and Tables

Figure 1. Study Location Map
Figure 2. Online Comment Map
Figure 3. Average Daily 2019 Volumes by Month on Highway 61 at Frenchman Road
Figure 4. Crash History
Figure 5. Traffic Projections
Figure 6. Recommended Roadway Type Based on Proposed 2035 and 2045 Daily Volumes
Figure 7. Highway 61 Access Blueprint
Figure 8. Typical Section for the South Segment (120th Street N to 140th Street N)
Figure 9. Typical Section for the Downtown Segment (140th Street N to 152nd Street N)
Figure 10. Typical Section for the North Segment (152nd Street N to 180th Street N)
Table 1. Summary of Funding Opportunities

Appendices

Appendix A – Public Involvement Summary
Appendix B – Existing Conditions Memorandum
Appendix C – Existing and Future Traffic Conditions Memorandum
Appendix D – Issues Identification Memorandum
Appendix E – Corridor Layout

Introduction

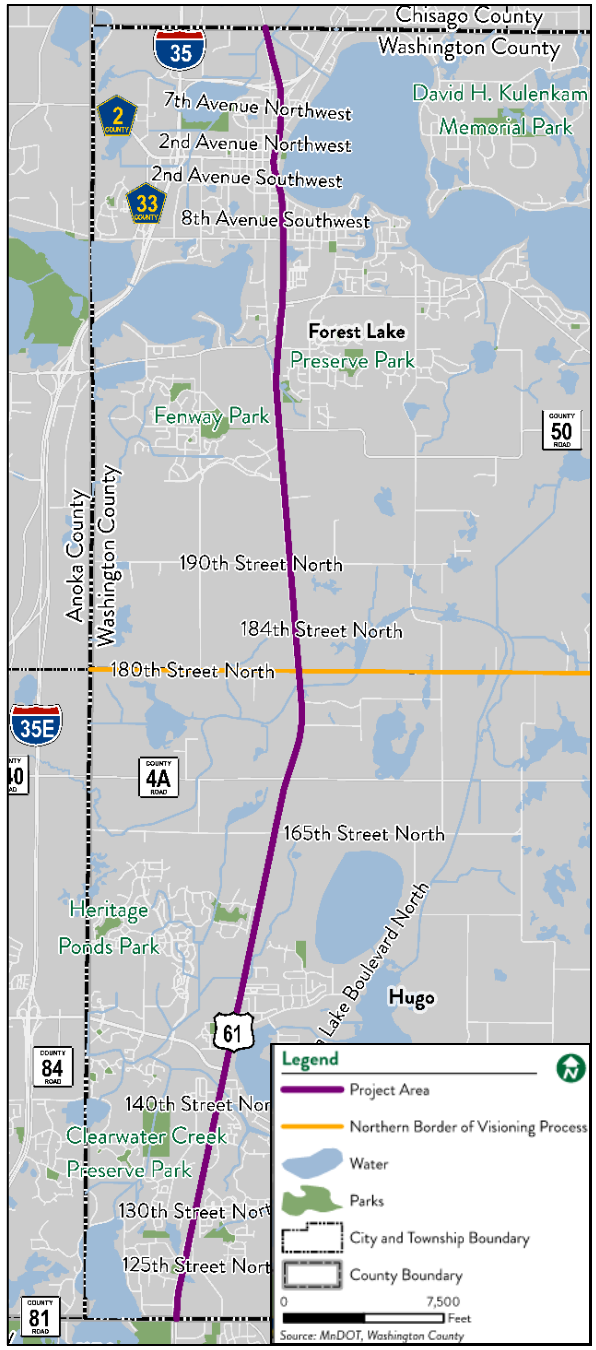
Study Overview

Highway 61 was initially developed in tandem with the Hugo town center due to its proximity to the railroad, functioning as a major artery for both people and goods. Today, Highway 61 serves as the main north-south thoroughfare in the City of Hugo and has multiple commercial and industrial land uses along the corridor.

The Highway 61 Visioning Study outlines a long-term vision for the future of the Highway 61 corridor that prioritizes safety, explores multimodal improvements, considers local and regional travel, and supports local economic development efforts. With support from the City of Hugo and the Minnesota Department of Transportation (MnDOT), Washington County led the Highway 61 Visioning Study to update the long-term vision and layout for Highway 61 through Hugo, from 120th St N to 180th Street N.

The former Burlington Northern Railroad Company line that parallels Highway 61 north of 140th St N/CSAH 8 is owned by the Washington County Regional Rail Authority (WCRRA) and is a unique element of this visioning study. The linear property currently includes the Hardwood Creek Regional Trail and was purchased to support the Rush Line Transit Vision connecting downtown St. Paul to Hinkley, MN.

Figure 1. Study Location Map



The need for this study arose from continued community growth, ongoing development discussion, the evolution of transit considerations in the Twin Cities as a whole and within Hugo, and a desire to better understand right-of-way needs for all modes of travel. The purpose of this study report is to summarize the process and key outcomes of the Highway 61 Visioning Study. Study outcomes highlight corridor improvement parameters that can be incrementally implemented to realize the overall vision over time. Additionally, study outcomes will inform discussions around the future jurisdictional transfer of Highway 61 from the State to Washington County. This study began in January 2023, with the final layout completed in May 2024. The final open house took place in August 2024, and the study was completed shortly thereafter.

Study Partners

Visioning Study partners included Washington County, the City of Hugo, and MnDOT. Representatives from all three agencies as well as the study consultant, Bolton & Menk, participated in the Project Management Team (PMT). The PMT served as the guiding committee for the Visioning Study and met 12 times from January 2023 through May 2024. The PMT has contributed to the outcome of the study by drafting and approving all study goals, interpreting the results of public engagement, reviewing all draft materials, and concurring on the study recommendations.

Study Goals

Goals for this study process were developed and reviewed as part of the project development process between Washington County and the City of Hugo. The study goals support agency priorities in revisiting the corridor vision and include defining a corridor vision that:

- Supports economic growth, community investment, and long-term transportation goals while increasing safety for all users.
- Evaluates access and intersection locations onto Highway 61 and recommends future improvements at key locations.
- Determines right-of-way needs based on the needs of each travel mode (e.g., cars, trucks, transit, pedestrians, bicyclists).
- Identifies pedestrian and bicycle safety and connectivity improvements throughout the corridor.
- Is supported by a financial plan and timeline for the Highway 61 jurisdictional transfer through Hugo and Forest Lake.

These study goals guided the visioning process and were at the forefront of discussions and decision-making processes.

Study Process

The study process was broken into the following three phases. Specific public involvement activities aligned with each phase as listed and are described in greater detail in the Public Involvement Section of this report.

Phase 1: Explore (January 2023-May 2023)

Phase 1 focused on data collection including technical review (e.g. inventory, crash analysis, traffic data, environmental review, etc.) and gathering qualitative information (e.g. user experience, public comment, etc.) to identify corridor issues and opportunities. Additionally, a review of existing plans and future local development was conducted to better understand potential future contextual conditions.

Public involvement activities in this phase included:

- Hugo City Council Meeting, March 2023
- Public Open House #1 at Hugo City Hall, April 2023 (online engagement ran concurrently)
- Hugo Area Business Association, May 2023
- Individual Property Owner Meetings

Phase 2: Evaluate (June 2023-December 2023)

In the "Evaluate" phase, potential corridor improvements were explored to address the issues identified in the first phase of the study. As the study progressed, it became apparent in this phase that a better understanding of allowable uses of the regional rail property was of paramount importance to identify a corridor vision that both supported a realistic, future transit vision for the region and responded to local needs and priorities. For this reason, a large portion of this phase focused on engaging with stakeholders associated with Regional Rail to come to a consensus on the appropriate approach to planning for the future of this property.

Public involvement activities in this phase included:

- Good Neighbor Days Pop-Up Event, June 2023
- Metropolitan Council Transit Planning Staff, August 2023
- Hugo Planning Commissioner and Economic Development Authority, August 2023
- Washington County Board/Regional Rail Authority, October 2023
- Forest Lake City Council, November 2023
- Rush Line Task Force, December 2023

Phase 3: Define (January 2024-August 2024)

Lastly, in the define phase of the study, a preferred corridor vision was developed and reviewed in detail by the Project Management Team agencies and presented to the public for feedback. This phase also outlined actions that can be taken now in support of the future vision for the corridor.

Public involvement activities in this phase included:

- Hugo City Council, July 2024
- Public Open House #2 at Hugo City Hall, August 2024
- Individual Property Owner Meetings

Public Involvement

As part of the visioning study, robust public engagement was performed with residents, local policymakers, and area stakeholders. Project team members hosted two open houses to discuss the Highway 61 corridor as well as a pop-up at Hugo Good Neighbor Days. The public was able to give feedback and ideas online through the project website and interactive comment map. Additionally, the project team met with the Hugo Area Business Association, the Hugo Economic Development Authority, local business owners, and agency-level stakeholders. Summaries from public engagement activities are listed below. The full public involvement summary is included in **Appendix A – Public Involvement Summary**.

Hugo Open House, April 2023

Hugo City Council Meeting (March 20, 2023) and Public Open House #1 (April 5, 2023)

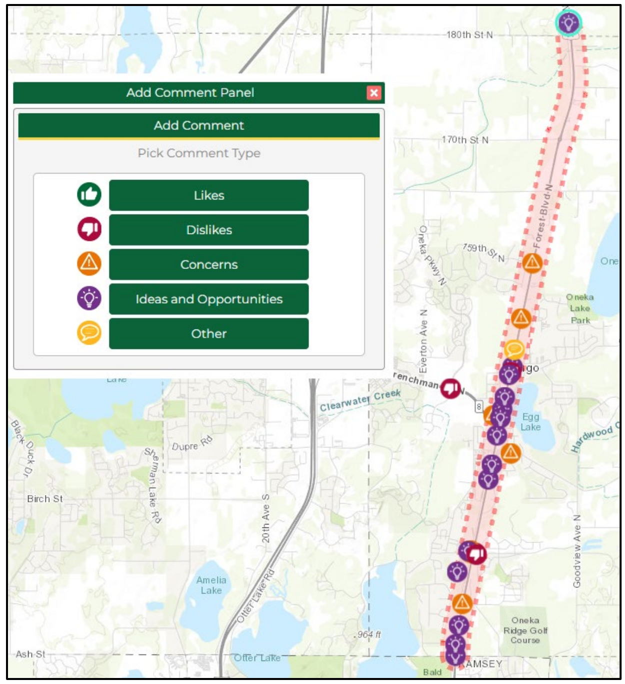
Project partners presented an overview of the study and solicited initial feedback from the Hugo City Council as a kick-off to phase 1 engagement on March 20, 2023. Staff answered questions and noted feedback from council members. The public open house was promoted at this meeting.

There was a total of 110 attendees who signed in at the first Study Open House event at Hugo City Hall on April 5, 2023. Project representatives were present to answer questions and collect feedback on issues, opportunities, and considerations in the study area as noted by attendees. Attendees were given the opportunity to submit feedback via comment cards and with notes on display boards or an area map. Key feedback from community members included safety concerns from high speeds along Highway 61 as well as the desire for better bicycle and pedestrian infrastructure along the corridor, especially with high-visibility crosswalks. Attendees expressed concerns about safety and difficulty turning left onto or off the highway. The open house was promoted on social media and the project website. A digital message board was set up along Highway 61 (near Hugo City Hall) prior to the meeting with details of the meeting time and location. In addition, 245 mailers were sent to residents who live near the Highway 61 study corridor encouraging them to attend the meeting and/or submit feedback through the website.

Online Survey and Interactive Comment Map

Concurrent with the in-person open house, an online survey and comment map (see ***Figure 2***) were published in April 2023 and were available as a means for the public to contribute feedback. The survey closed on April 19, 2023, and received 109 responses. The comment map received 25 location-specific responses; of these responses, three areas were marked as “dislikes”, five areas were marked as “concerns”, sixteen areas were marked as “ideas and opportunities” locations, and one area was marked as “other”. Multiple people suggested implementing roundabouts as a way to improve safety,

Figure 2. Online Comment Map



especially for bicyclists and pedestrians. Participants also expressed safety concerns related to gaps in the pedestrian and bicycle network and difficulty in crossing Highway 61. The online survey and comment map were promoted on social media, at the open house meeting, and on the project website. These tools are found to be effective ways to engage with people who are not able to attend in-person events or prefer to provide feedback virtually.

Hugo Area Business Association (May 9, 2023)

Project staff were invited to attend the April meeting of the Hugo Area Business Association to provide an overview of the study and solicit feedback from area businesses on how the Highway 61 Corridor currently supports or creates challenges for their business as well as potential future opportunities. Feedback included similar themes from the Open House including traffic speeds, the ability to cross Highway 61 as a pedestrian or on bike, and discussion around the appropriate use of roundabouts. Additionally, corridor lighting was mentioned several times and the CSAH 8/Frenchman Road corridor was referenced as a precedent with decorative lighting.

Hugo Good Neighbor Days Pop-Up (June 9, 2023)

Good Neighbor Days is an annual festival that started in 1978 and routinely draws over 10,000 visitors to the City of Hugo. The project team staffed a booth at this event to promote the study and ask residents about corridor issues and opportunities. Additionally, information specific to corridor aesthetics was shared to gain a better understanding of the desired feel of the Highway corridor. Participants used dots to identify elements they felt were in line with their future vision of the corridor and left written comments providing additional feedback. Participants expressed a desire for better trail infrastructure, trail connections, and pedestrian crossings. Also, participants expressed concerns about safety due to high speeds and areas of congestion. Feedback from this event mirrored feedback received during the April 5th Open House.

Hugo Planning Commission and Economic Development Authority (August 24, 2023)

A joint work session with the Hugo Planning Commission and Economic Development Authority was scheduled in order to promote the study and gather feedback specifically related to desired corridor aesthetics and the “feel” of Highway 61. Specific discussion prompts included:

- What is the role of Highway 61 in the downtown area – is 61 the Main Street of downtown or a road that gets people to downtown?
- What about north and south of downtown?
- From imagery examples, which elements support/do not support the desired corridor vision?

Feedback themes from this group included a desire for zero-setback development transforming the Highway corridor to an integral part of the City's downtown, a desire to create a destination downtown, a desire to see the City's Downtown Plan realized and excitement about continued commercial growth (along Highway 61 and elsewhere), references to CSAH 8/Frenchman Road and the Downtown White Bear Lake area when discussing aesthetics, supporting bike/pedestrian infrastructure and protecting/intensifying the use of the Regional Trail corridor, recognizing a balance between keeping traffic moving outside of the downtown area and providing visibility and access in the downtown area, and support for a four-lane vision to reinforce long-term growth and economic development opportunities.

Regional Rail Authority Property-Specific Engagement

As part of the Highway 61 Visioning Study, several coordination meetings were held with Metropolitan Council staff, the cities of Hugo and Forest Lake, the Washington County Board/Regional Rail Authority, and the Rush Line Task Force to revisit long-term transit planning for the Rush Line/Purple Line corridor north of White Bear Lake. Specifically, discussions focused on the future use and allocation of space of the Regional Rail Property and parallel highway right-of-way.

Right-of-way dedication needs within the City of Hugo – primarily in the downtown segment – were a primary driver in these conversations. With the current corridor layout as developed in 2008, the City is requiring significant right-of-way dedication with development proposals. It was of particular concern to the City that the width of the eventual highway and transit corridors as two parallel transportation corridors was not in support of their downtown development plans and may be wider than necessary to support highway and future transit needs.

The conclusion of this coordination was an openness to treat the parallel tracts of land as a "unified transportation corridor", allocating appropriate space for the regional trail and transit service in support of future transit opportunities and highway needs. This "unified transportation corridor" will be further supported if the highway right-of-way is transferred from the State to Washington County so that both tracts of land fall under the same jurisdiction. The Highway 61 Corridor Vision and updated layout, and the outcomes from this study as outlined later in this report, support this conclusion.

Hugo City Council (July 15, 2024) and Public Open House #2 (August 15, 2024)

Public involvement during the third phase of the study included a presentation to the Hugo City Council to preview study outcomes and a public open house to present study outcomes and next steps to the community. Generally, feedback was supportive of reduced right-of-way dedication needs, and intersection and multimodal improvements, with discussion around specific traffic controls. It was emphasized at the public open house that currently no construction projects are planned and this study provides a high-level plan to support land use and transportation decision-making moving forward; specific locations and solutions will be reviewed in greater detail as projects are identified and funded.

Existing Conditions

The Existing Conditions Memorandum documented existing conditions, reviewed previous studies and planning efforts, and identified and confirmed issues along Highway 61 within the study area. This information served as a starting point in understanding corridor issues and potential opportunities. The full Existing Condition Report is included in **Appendix B**.

Previous Studies and Planning Efforts

The Existing Conditions Memorandum includes a review of the body of previous studies and planning efforts that shaped the Highway 61 corridor and surrounding land use through Hugo and Forest Lake. Key takeaways from each document, relevant to the study area, are listed by plan title. The findings of these plans and studies were considered when developing recommendations and an implementation plan for the Highway 61 Visioning Study. Four previous planning efforts to note include:

- **1996 Change of Jurisdiction…Memorandum of Understanding (MOU)** – This MOU between the State and Washington County identifies a list of state roadways within Washington County that are candidates for jurisdictional transfer to the County based on comprehensive planning at that time. Highway 61 is included on this list of potential transfers.
- **2007 City of Hugo Downtown Plan and Design Guidelines** – This plan, as developed by the City of Hugo, outlines and illustrates the vision for downtown Hugo including existing neighborhoods, potential development areas, and desired aesthetics.
- **2008 Corridor Access Management Plan MOU with Layout** – This MOU and associated layout signed by the State, County, and City, was developed to better support development requests within the City of Hugo. The MOU and layout guide future access locations and work toward a four-lane expansion for the corridor (including right-of-way dedication needs). The Regional Rail Property in this layout is dedicated to transit use, specifically rail transit.
- **2017 Rush Line Corridor Locally Preferred Alternative (LPA) Report** – This most recent transit study for the Rush Line Corridor identified a connector bus from White Bear Lake through Hugo and north to Forest Lake.

Demographics and Trends

Between 2010 and 2020, the three census tracts (702.04, 702.07, and 702.08) surrounding Highway 61 through the City of Hugo experienced a 24 percent increase in population from 12,129 residents in 2010 to 15,008 in 2020. This increase is nearly three times the increase in population Washington County experienced during the same time frame (8.8 percent). The population increase along the Highway 61 corridor accounted for approximately 14 percent of the total population increase in all of Washington County. This boom in population is expected to continue, and by 2040, the Metropolitan Council forecasts a 53 percent increase in housing stock will be needed to keep up with the rapidly growing population in Hugo. Job growth is expected to increase with the population of Hugo. Employment growth may still put a strain on commuter routes, such as Highway 61, if local agencies do not work to increase roadway efficiency and multimodal transportation options.

Land Use and Major Traffic Generators

The Highway 61 Corridor is the site of a variety of land uses ranging from residential, industrial, agricultural, and commercial uses. Future uses directly along the corridor include a continuation of industrial, growth of residential use, and the development of mixed-use areas in downtown Hugo. The Highway 61 corridor must accommodate these different land uses along with the many different types of roadway users. Major traffic generators along Highway 61 can be separated into four categories: residential, commercial, industrial, and institutional. For more information about the breakdown of uses along the corridor, see **Appendix B – Existing Conditions Memorandum*.***

Several different bicycle and pedestrian generators are located near the study corridor and regularly draw nearby walkers and bicyclists. The Hardwood Creek Regional Trail is a major bicycle trip generator that runs parallel to the corridor from 140th Street north through Forest Lake and connects to the Sunrise Prairie Trail in Chisago County. Both the Hardwood Creek and Sunrise Prairie Regional Trails are part of U.S Bicycle Route 41 - the North Star Route - connecting St Paul to Grand Portage State Park on the Canadian Border. Other nearby recreational resources include the Oneka Ridge Golf Course, Oak Shore Park, Beaver Ponds Park, Clearwater Creek Preserve, Lions Volunteer Park, Oneka Lake Park, and Frog Hollow Park. The Hardwood Creek Regional Trail also provides access to Bald Eagle-Otter Lake Regional Park just south of the Hugo border.

Transportation System Characteristics

Roadway

Highway 61 throughout the study area is classified as a Minor Arterial. It connects important locations in Hugo and areas to the north (Forest Lake) and south (White Bear Township/White Bear Lake) and is primarily used for short to medium trips that would otherwise use principal arterials. The study corridor runs parallel to Interstate 35E, a major principal arterial connecting the Minneapolis-St. Paul metropolitan area to Duluth in the north and the Des Moines metropolitan area in the south.

Highway 61 has a daily traffic count that ranges between approximately 10,000 (north of 170th Street) to over 18,000 (between Frenchman Road/CSAH 8 and 140th Street). The typical section (also known as roadway geometry) through the study area is generally a standard two-lane section with left and/or right turn lanes at key intersections. A short three-lane section, with a shared center left turn lane, is present through the downtown area along Highway 61 from CSAH 8/Frenchman Road to 147th Street N/Oneka Lake Boulevard N with a 2025 construction project to extend the three-lane section south to CSAH 8/140th St N.

Highway 61 is an important transportation corridor for freight vehicles carrying agricultural and industrial products to and from Hugo and neighboring jurisdictions. Highway 61 acts as a major reliever for nearby Interstate 35E and transports between 465 and 530 freight vehicles per day. While much of the land immediately adjacent to the Highway 61 corridor has been zoned and recently developed as residential, important industrial manufacturers like Schwieters Companies, Wilson Tool, Xcel Energy, Northstar Recycling, Kamps Pallets Inc, and the other manufacturing companies in Hugo rely on the roadway to transport goods into and out of the city.

Active Transportation

There are some existing and proposed bicycle and pedestrian facilities throughout the Highway 61 study area. Highway 61 runs alongside the Hardwood Creek Regional Trail – a 9.5-mile, ADA-accessible, multi-use trail located on the former Burlington Northern Railroad grade. This trail travels through Hugo and Forest Lake, with its current southern terminus at 140th Street N. The Hardwood Creek Regional Trail Long-Range Plan shows a planned future connection to the Bruce Vento Regional Trail to the south in White Bear Lake, which, in turn, would provide access to multiple other trails throughout the Twin Cities metropolitan area. Additionally, the Hardwood Creek Regional Trail connects to the Sunrise Prairie Trail in Chisago County in the north and intersects with the Glacial Hills Regional Trail planned east-west alignment. The Hardwood Creek Regional Trail consists of two parallel trails, with one being paved and the other being mown turf. The paved trail is open to biking, hiking, in-line skating, snowshoeing, and cross-country skiing, though it is not maintained in the winter months (no snow or ice removal). The turf trail is used for horseback riding in the summer and snowmobiling (without studs/metal traction devices) in the winter.

Pedestrian amenities like sidewalks are not present throughout most of the study area. There are marked crosswalks at primary intersections along the corridor (County Line Road, 130th Street N, 140th Street N, Frenchman Road, 147th Street N, 170th Street N, Headwaters Parkway, and CSAH 50). There is also a small sidewalk segment along the east side of Highway 61 from Frenchman Road (CSAH 8) to 148th Street N in downtown Hugo. Crossing Highway 61 presents challenges for pedestrians due to high vehicle speeds, especially those with limited mobility since not all intersections have pedestrian ramps.

Transit

The City of Hugo is not a Transit Capital Levy Community and does not currently have any regular-route transit services provided by Metro Transit, the public transportation service of the Metropolitan Council. The City of Hugo is within the Transit Link (Dial-A-Ride) service area, a Metro Transit shared-ride service available in areas where there is no fixed-route service.

Highway 61 through Washington County is part of the identified Rush Line Transit Corridor. The Rush Line Corridor is an 80-mile transit corridor extending from Downtown St. Paul in the south to Hinkley in the north. The Regional Rail Property along the west side of Highway 61 from 140th St in Hugo to the northern county line was purchased by the Washington County Regional Rail Authority in support of this multimodal vision.

The most recent Rush Line Locally Preferred Alternative Report from 2017 identified a Bus Rapid Transit (BRT) route that would connect downtown St. Paul to White Bear Lake via Robert Street, Phalen Boulevard, and Ramsey County Regional Railroad Authority right-of-way (co-located with the Bruce Vento Regional Trail), with a connector bus extending north through Hugo and to Forest Lake via Highway 61. The BRT route between St. Paul and White Bear Lake was identified to move forward through implementation in 2021. After a 2022 resolution from the White Bear Lake City Council opposing BRT in their community, the Purple Line began a Route Modification Study (RMS) to explore alternative routes and endpoints to the line. At the time of this Highway 61 Visioning Study, the Purple Line project team is evaluating whether the BRT line could run along White Bear Avenue rather than the current proposed alignment along the Ramsey County Regional Rail property which includes the Bruce Vento Regional Trail Corridor.

The Metropolitan Council’s current Transportation Policy Plan does not show any planned transit investments for the Highway 61 corridor through Hugo and Forest Lake. Discussions around transit needs and service across Washington County and the Region occurred parallel to this study process as part of the Metropolitan Council's "Network Now" and "Network Next" Plans. Discussions included modifications to existing and planned fixed-line transit routes as well as an exploration of micro- and on-demand transit services.

Environmental Screening

A preliminary environmental screening was completed to document the following:

- ***Topography and Landforms:*** The study area is generally flat with slightly rolling topography. No significant landforms or features are present within the study area.
- ***Surface Water Resources:*** The corridor is located within the Rice Creek Watershed. Surface water resources were identified from the National Wetlands Inventory, which shows several water resources exist adjacent to and near the Highway 61 corridor, including Bald Eagle Lake, Egg Lake, Oneka Lake, Clear Lake, and Forest Lake.
- ***Hazardous Materials and Potentially Contaminated Sites:*** Potentially contaminated site data was reviewed from the MPCA's "What's in My Neighborhood" dataset. There are 76 potentially contaminated sites in the study area.
- ***Sensitive Ecological Resources:*** Native plant communities in the project area were considered using the MnDNR's Native Plant Communities dataset. A small number of remnant sites are located near Highway 61, including areas surrounding Egg Lake and the large wetland complex located west of Highway 61 and south of the North Star Elementary School.
- ***Visual:*** The visual quality of the study area has been experiencing a transition from a more rural/open space context to urbanization. The views from highway users and adjacent properties are typically for developing areas.
- ***Air and Noise Considerations:*** Several residential, commercial, institutional, and recreational uses are located adjacent to the Highway 61 corridor. These land uses commonly involve sensitive receptors to both air and noise quality.

A more comprehensive description of social, economic, and environmental conditions within the Highway 61 study area can be found in **Appendix B – Existing Conditions Memorandum.**

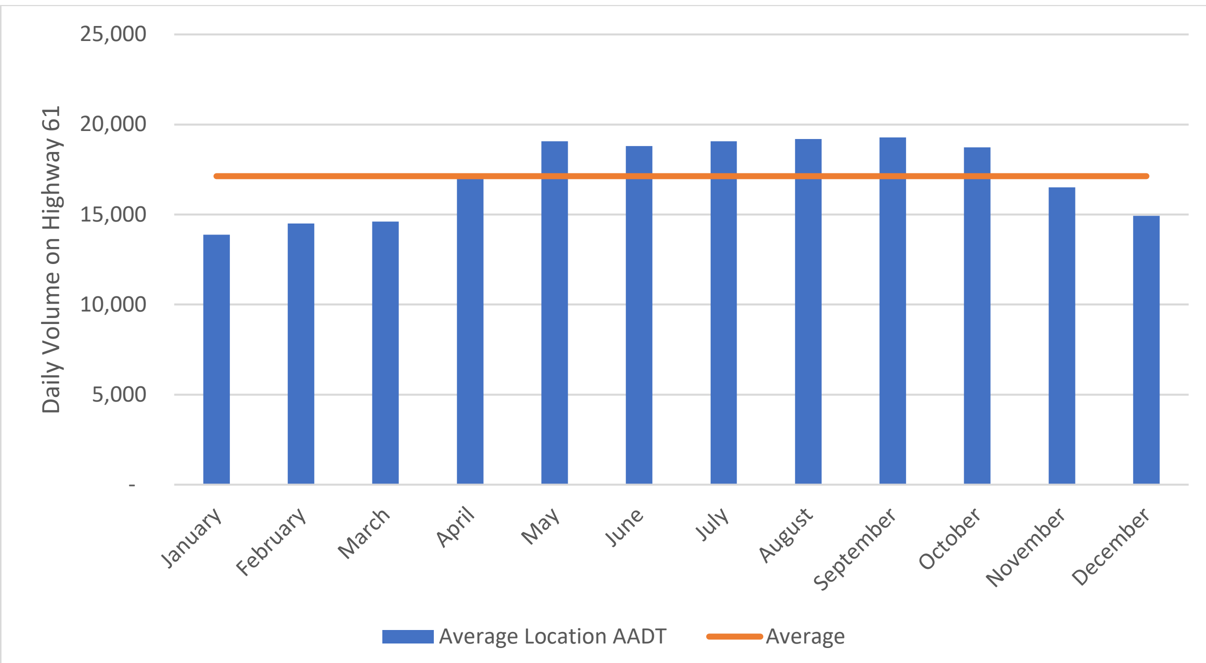
Traffic Analysis

Additional information on traffic conditions can be found in **Appendix C – Existing and Future Traffic Conditions Memorandum.**

Existing Traffic Volumes

Turning movement count data was collected at all project intersections in June 2022 and January 2023. The turning movement count data included vehicular traffic, pedestrians and bicycles using the intersection crosswalks, and in-road bicyclists. The counts from January 2023 were found to be significantly lower than the counts from June 2022. A StreetLight analysis was completed to compare traffic volumes by month, as shown in ***Figure 3.*** For the operational analysis, the January 2023 counts were increased proportionally to match the June 2022 counts so that volumes were consistent along the corridor.

Figure 3. Average Daily 2019 Volumes by Month on Highway 61 at Frenchman Road



Traffic Operations

Level of Service (LOS) analysis was performed on all intersections within the study area. Intersections and each intersection approach were ranked from LOS A through LOS F. During AM and PM peak hours, seven intersections along the study corridor have approaches that function at LOS E levels, and eight intersections have approaches that operate at LOS F levels. All intersections operate overall with LOS C or better during the AM peak hour.

The following intersections have AM peak hour approaches that operate with LOS E:

- 147th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 120th St N at Highway 61 (westbound approach)

The following intersections have AM peak hour approaches that operate with LOS F:

- 152nd St N at Highway 61 (westbound approach)

All intersections operate overall with LOS D or better during the PM peak hour except the signal at Frenchman Rd at Highway 61 which operates with LOS E and the roundabout at 170th St N and Highway 61 which operates with LOS F.

The following intersections have PM peak hour approaches that operate with LOS E:

- 165th St N at Highway 61 (eastbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 147th St N at Highway 61 (westbound approach)
- 145th St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (southbound approach)
- 141st St N at Highway 61 (westbound and southbound approaches)
- 120th St N at Highway 61 (westbound approach)

The following intersections have PM peak hour approaches that operate with LOS F:

- 170th St N at Highway 61 (northbound approach)
- 165th St N at Highway 61 (westbound approach)
- 152nd St N at Highway 61 (eastbound approach)
- 148th St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (eastbound approach)
- 140th St N at Highway 61 (eastbound approach)
- 125th St N at Highway 61 (westbound approach)

Traffic Safety and Crash History

A ten-year crash analysis (2013-2022) was completed for fatal crashes throughout the project area. Three fatal crashes occurred along Highway 61 within the project limits in the last ten years. Two of the fatal crashes occurred at the intersection of 159th St N at Highway 61 and the other fatal crash occurred along Highway 61 south of 130th St N. *The intersection of 159th St N at Highway 61 was reconstructed into a single-lane roundabout in 2023 during the time of this study.*

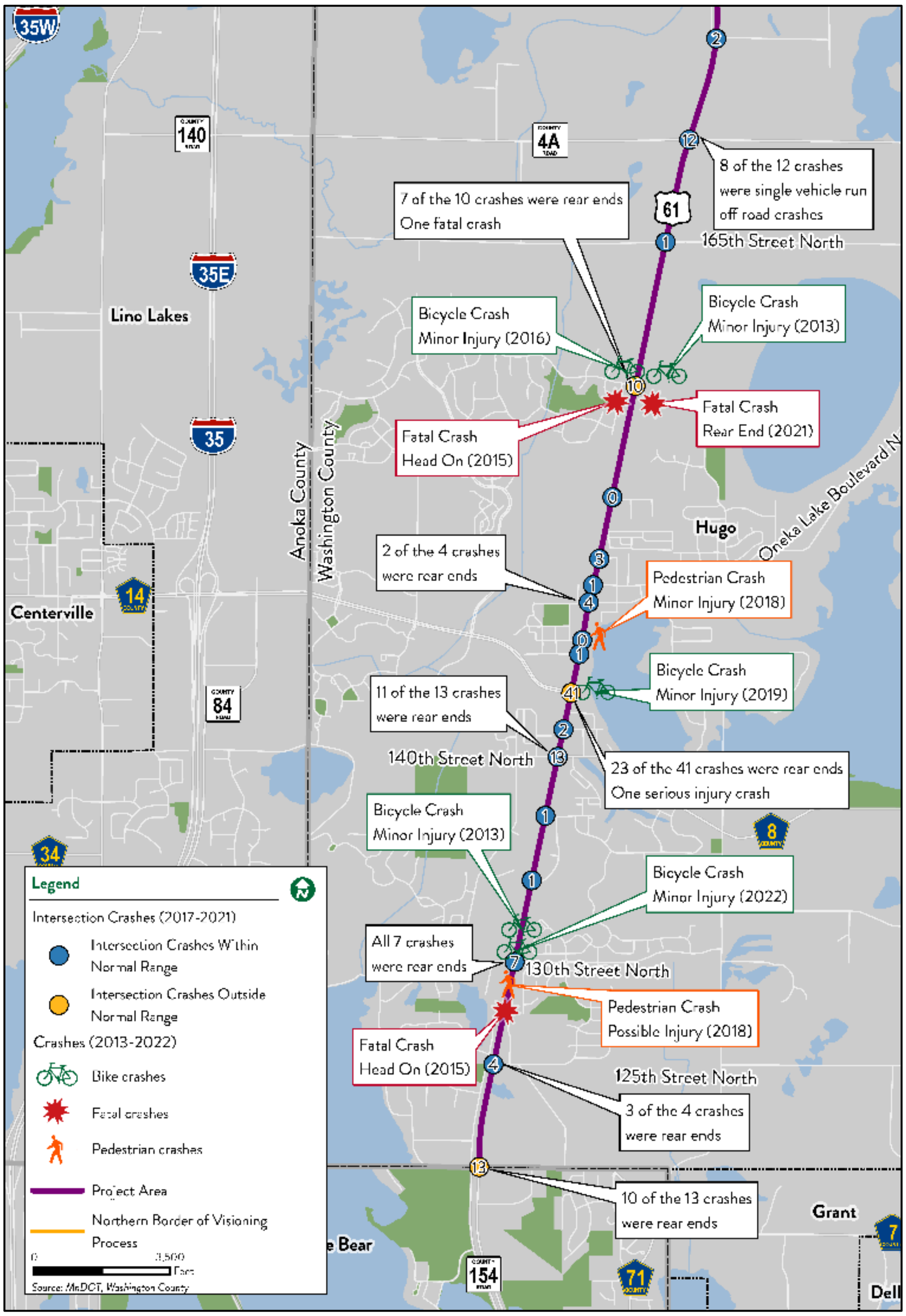
A ten-year crash analysis (2013-2022) was also completed for pedestrian and bicycle crashes throughout the project area. There were two crashes involving a pedestrian and five crashes involving a bicycle in the last ten years, with the most severe crashes resulting in minor injuries.

With intersection crashes included, there were a total of 148 crashes within the project area. One of the crashes resulted in a fatality, one resulted in serious injury, fourteen resulted in minor injury, 35 resulted in possible injury, and 97 resulted in property damage only. The most common crash type was rear-end crashes accounting for 89 of the 148 crashes. The next most common crash types were single-vehicle run-off road crashes and right-angle crashes with 12 crashes each.

A five-year (2017-2021) crash analysis was completed for the intersections throughout the project area. Crash data was pulled from MnCMAT2. The intersections of 159th St N, Frenchman Rd, and 120th St N at Highway 61 have critical indices greater than one indicating that the intersections operate outside the expected, normal range. These three intersections were further analyzed to understand the crash trends. It is noted that the 159th St N intersection was reconstructed as a roundabout during the 2023 construction season. This change in intersection control and design is anticipated to improve safety conditions at this intersection for vehicles and pedestrians/bicyclists.

Without the intersection crashes included, there were a total of 32 crashes within the project area during the five-year analysis. Four of the crashes resulted in minor injury, 11 resulted in possible injury, and 17 resulted in property damage only. Rear-end crashes were also the most common, accounting for 18 of the 32 crashes. ***Figure 4*** summarizes the crash density of the corridor. This indicates the intersection of Frenchman Rd at Highway 61 stands out as a crash hot spot along the corridor.

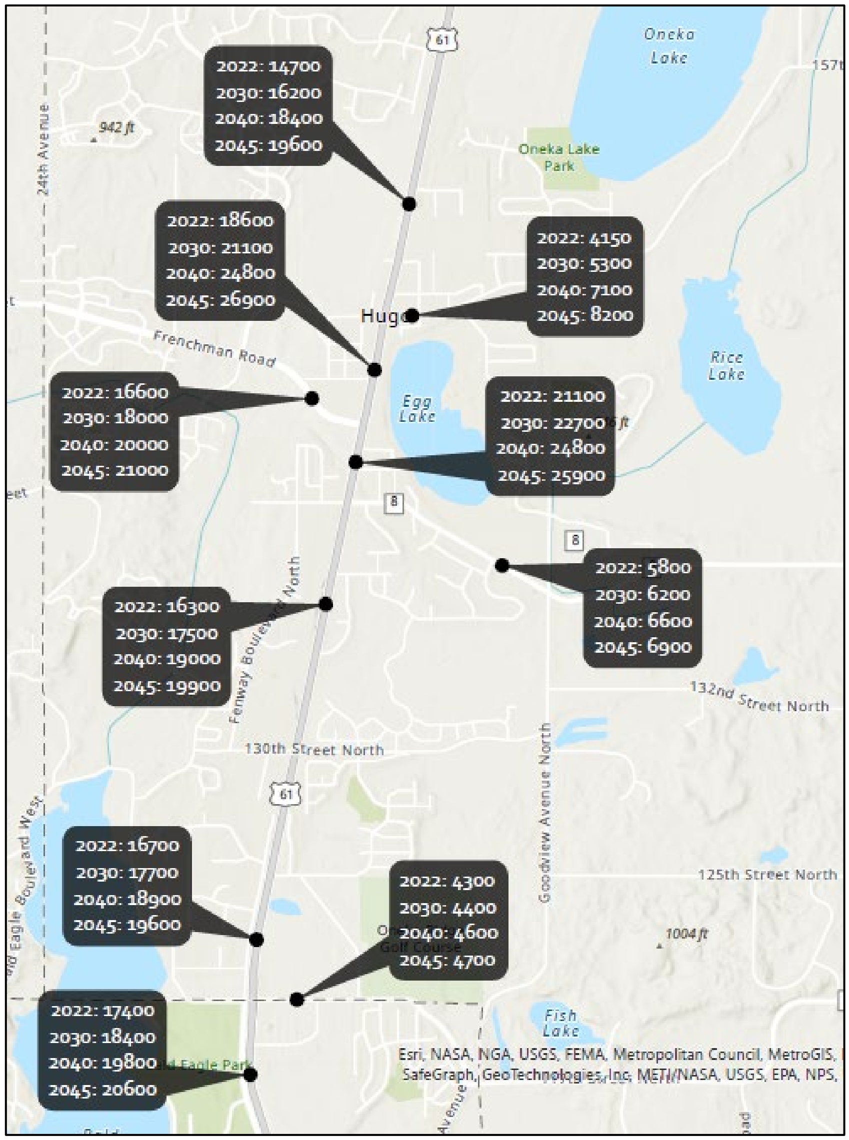
Figure 4. Crash History



Future Traffic Conditions & Sensitivity Analysis

Traffic forecasts were developed based on a review of travel demand model results from both the Washington County model and the Metropolitan Council's regional activity-based model. Differences between future year (2040) and base year (2014/2015) model results were applied to existing (2022 and 2023) traffic count data, taking into consideration that some of that growth has already taken place between 2014/2015 and the time of this study. The average growth rate of all locations in the project area was found to be 1.5% per year. The average growth rate along Highway 61 within the project limits was found to be 1.1% per year. ***Figure 5*** shows the projected growth in average daily vehicle counts from 2022 to 2045.

Figure 5. Traffic Projections



A sensitivity analysis was completed to analyze a modified volume set if improvements were made near the project area that would alter traffic patterns. The two improvements considered include a potential future I-35E interchange north of the existing interchange at Anoka County Highway 14 and the development of the southwest quadrant of the intersection of Frenchman Rd and Highway 61. A total of between ~70-130 vehicles during the 2035 and 2045 peak hours were assumed to reroute with the potential interchange and were removed from Highway 61 for the sensitivity analysis.

No-Build Operations Analysis

2035 and 2045 No Build traffic operations were analyzed in Synchro/SimTraffic Version 11 with the current geometry and optimized signal timing. All signalized and stop-controlled intersections were analyzed in SimTraffic, and the two roundabouts were analyzed in Synchro using the HCM 6th Edition methodology. With the optimized signal timing, the delay is reduced from the existing condition for some movements.

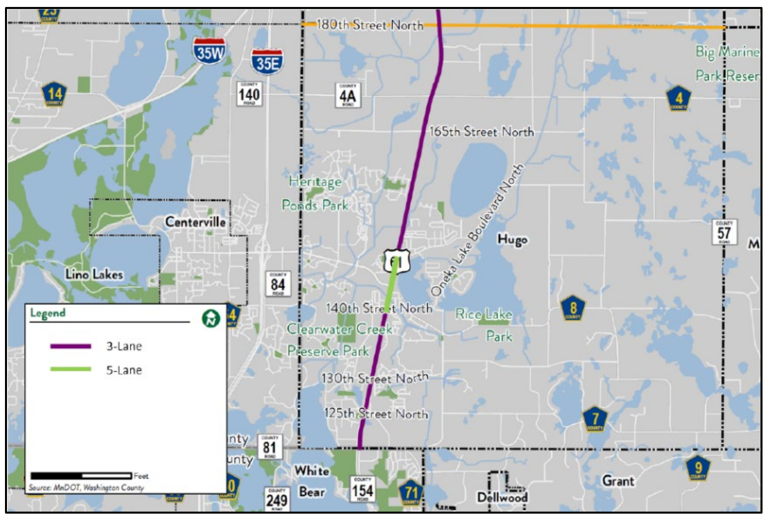
ICE Report/Turn Lane Considerations

Turn lanes along Highway 61 were analyzed to determine where left and right-turn lanes are justified based on the forecasted 2045 traffic counts. The existing AADT along Highway 61 ranges from 11,500 to 21,100 and forecasted 2045 AADT is anticipated to range from 16,400 to 25,900. With higher volumes along Highway 61, the cross streets only need to have volumes greater than 100 to justify turn lanes. All cross streets counted have >100 ADT today except 150th St N east of Highway 61, which only serves 80 vehicles per day according to the existing traffic count. The 2045 forecasted volume is anticipated to be over 100 vehicles per day.

Capacity Analysis

A preliminary check of the existing and forecasted AADTs was compared to planning level roadway capacities using guidance from Chapter 6 of the Washington County 2040 Comprehensive Plan. ***Figure 6*** shows the existing, 2035, and 2045 volumes at Highway 61 south of the intersection at 130th St N. The volumes shown are at the specific location referenced, not averaged over a segment. This analysis shows how the existing volumes are within the capacity of a three-lane section. 2035 volumes are at capacity of a three-lane section during the AM peak hour and below capacity of a three-lane section during the PM peak hour. 2045 volumes are just over the capacity of a three-lane section during the AM peak hour and nearing capacity during the PM peak hour. Overall, the full-day assessment indicates that only one or two hours are expected to operate over the planning level capacity with a three-lane section throughout the entire project corridor.

Figure 6. Recommended Roadway Type Based on Proposed 2035 and 2045 Daily Volumes



Stakeholder engagement demonstrated a desire to plan for a four-lane section throughout the project corridor. Comments showed concerns for side street access with a three-lane section and referenced existing queuing at many corridor intersections. Comments, both from residents and agency stakeholders noted the recent and planned growth of Hugo as a reason to plan for a four-lane section throughout the corridor.

Key Transportation Issues

Issues Identification

To develop and evaluate improvement opportunities and concept alternatives, the PMT first identified issues along the corridor. Issues were identified using study documents, including a review of past land use and transportation planning documents and the Highway 61 Corridor Vision Existing Conditions Report, data collection and data analysis, and public, agency, and stakeholder engagement.

This combined analysis led to the identification of several transportation issues within the corridor vision study limits. These are summarized below and are discussed in more detail in **Appendix D – Issues Identification Memorandum**. Issues were identified as primary and secondary issues. Primary issues are vital to the success of a potential project in making the required improvements needed. Secondary issues are also important but were not considered to set the framework for potential improvements. They may relate to items that can be addressed regardless of the alternative selected from this study.

Primary Transportation Issues

Intersection Safety

Data analysis shows there are statistically significant safety conditions at 159th Street N, CSAH 8/Frenchman Road, and 120th Street N. Public feedback noted safety concerns for turning left onto or off Highway 61, and some comments suggested adding turn lanes on Highway 61 to improve safety. As previously noted, the 159th Street N intersection was reconstructed in 2023 as a roundabout which is anticipated to substantially reduce crash severity and improve pedestrian/bicycle safety at this location.

Traffic Operations/Mobility Issues

Currently, there are no intersections in the AM peak hour operating at unacceptable conditions (LOS E/F). The existing PM peak shows CSAH 8/Frenchman Rd and CSAH 4/170th St at LOS E and F, respectively. By 2045, the “No Build” AM peak shows declining intersection operations (LOS D), and the PM peak indicates significant operational concerns with seven intersections operating at LOS F and a high number of side street approaches operating at LOS E/F.

Lack of Safe/Comfortable Pedestrian Bicycle Crossings

Public engagement and data analysis indicated that there are limited locations to safely and/or comfortably cross Highway 61. A safety analysis identified pedestrian/bicycle crashes near the intersections of 159th Street N, 145th/146th Street N, CSAH 8/Frenchman Rd, and 130th Street. Public comments indicated the desire for additional crossing opportunities in desirable locations. The newly constructed (2023) roundabout at 159th Street N has improved pedestrian/bicycle safety at this intersection.

Pedestrian/Bicycle Connectivity

Input collected during the Phase I and Phase 2 engagement efforts (open house meeting, INPUTiD, etc.) indicated the need for increased pedestrian connectivity and ADA-compliant facilities, especially through the Hugo downtown area (CSAH 8/140th St to 152nd St). Input also indicated the Hardwood Creek Trail corridor is an important asset for the community, but the lack of connecting facilities to the south, east, and west is a deterrent to bicycle use and potentially suppresses increased multimodal use of the corridor.

Development Plans and Land Access

The existing access conditions do not meet the recommended spacing guidelines at several locations. Future access plans must consider recent planning efforts, safety and mobility conditions for all users, and the potential economic conditions of existing and future residential, commercial, and industrial businesses located in the area.

Future Transit Planning

Future transit planning was a unique consideration for this corridor visioning process. As outlined in the Public Involvement and Existing Conditions section of this report, Highway 61 is part of the Rush Line Transit Corridor. The Regional Rail Property along the west side of Highway 61 from 140th St in Hugo to the northern county line was purchased by the Washington County Regional Rail Authority in support of this multimodal vision. Previous guidance preserved nearly the entirety of the regional rail property for transit use, specifically rail transit. As the most recent transit study for the Rush Line Corridor (the 2017 LPA report) identified a connector bus north of White Bear Lake, it was desired to reevaluate transit planning and related spatial needs of all represented travel modes in the corridor as a part of this study.

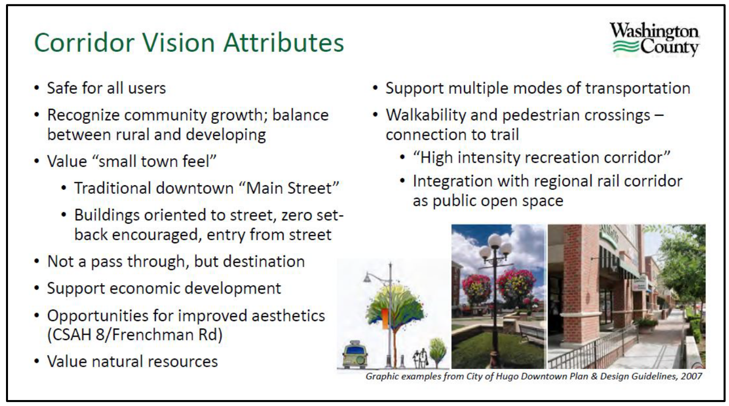
Secondary Transportation Issues

Throughout the Highway 61 Visioning Study, several other issues were raised by stakeholders and the public. Secondary transportation issues are listed below.

- ***Sidewalk Maintenance Issues:*** The age of sidewalk pavement along Highway 61 is contributing to cracking, potholes, and the general compromise of surface smoothness. During study engagement, it was revealed that current pavement conditions and the lack of winter maintenance make it difficult for pedestrians, especially those with mobility disabilities or pushing strollers, to travel.
- ***Snowmobile usage and safety:*** Hardwood Creek Trail operates as a snowmobile trail in the winter. Residents expressed concern about the inconsistency of where crossovers occur along the trail. Snowmobiles tend to cross Highway 61 midblock, as opposed to at intersections, to access destinations (restaurants, convenience stores/gas stations, etc.)
- ***Long signal delays for side streets:*** The long signal delays for many of the side streets along Highway 61 contribute to long traffic queues and poor Level of Service classifications.
- ***Red Light Compliance:*** Motor vehicle drivers are often observed running red lights along the Highway 61 corridor as well as on the side streets adjacent to the corridor. This contributes to deteriorated safety conditions for other motor vehicles and non-motorized users.
- ***Lack of Turn Lanes:*** The current lack of turning lanes along Highway 61 contributes to vehicle queuing and illegal passing of turning vehicles using the highway shoulder.
- ***Corridor/Intersection Lighting:*** The Highway 61 corridor lacks sufficient corridor and intersection lighting. There is no existing lighting along the corridor, as it is limited to intersections. During engagement, businesses along Highway 61 shared concerns about the difficulty of turning into and out of private access points due to the lack of lighting.
- ***Vehicle speeds:*** Observed motor vehicle speeds are often higher than the posted speed limits along Highway 61. This is a safety concern for both motorized and non-motorized users.
- ***Capacity expansion:*** The existing AADT along Highway 61 ranges from 11,500 to 21,100 and forecasted 2045 AADT is anticipated to range from 16,400 to 25,900. As population and employment around the study corridor increase, it will be necessary to prepare for additional traffic volumes with potential capacity expansion along Highway 61.

Corridor Vision and Study Outcomes

The long-term vision for the Highway 61 corridor is a 4-lane, divided highway with frequent pedestrian crossing improvements and high-intensity recreation components. The corridor will support the development of the downtown Hugo area and will maintain the right-of-way for the Hardwood Creek Trail—including the paved trail and horse/snowmobile trail routes. Future transit will be supported by corridor infrastructure and surrounding land use and development decisions. The project team used feedback from public engagement efforts and results from the Existing Conditions, the Existing and Future Traffic Conditions, Issues Identification Memorandums, and Washington County access management guidelines to develop the corridor vision.



Key vision themes from stakeholder engagement.

Concept Development

After careful consideration and in response to stakeholder engagement feedback, the PMT determined to look beyond a typical 20-year planning horizon to consider the full buildout of the highway as a four-lane divided facility. Defining this longer-term vision will support transportation and land use decision-making to incrementally identify and implement corridor improvements to protect public investment and allow for Highway 61 capacity expansion (2-lane to 4-lane) as population and employment around the corridor increase.

As part of this study, a planning level layout was developed to illustrate access planning locations and right-of-way dedication needs based on modal needs and in support of the corridor vision. As individual projects are identified for implementation, specific traffic controls at access locations can be determined and design details can be further refined.

The study area has three unique segments where alternatives were considered.

1) **South Segment: 120th Street N to 140th Street N**, characterized by the remaining active rail line on the west and primarily residential development on the east.
2) **Downtown Segment: 140th Street N to 152nd Street N**, characterized by a somewhat tighter right-of-way, existing and planned commercial development on either side, higher density residential neighborhoods, and the Hardwood Creek Regional Trail corridor along the west side.
3) **North Segment: 152nd Street N to 180th Street N**, characterized by lower density development, the widest right-of-way, and the Hardwood Creek Regional Trail corridor along the west side.

The process for selecting a recommended concept design for each segment began with a traffic analysis of the corridor to identify and evaluate improvement alternatives. Early planning efforts also considered Hugo's Future Land Use Plan and Washington County's access spacing guidelines. The project team identified where access would be needed and incorporated those findings into the recommended concept layout. The layout accounts for the expected growth that will occur with new development along the corridor. It will also be necessary for the local roadway system to build around the Highway 61 corridor to provide necessary parallel routes and key local connections to minimize the need for travelers to use Highway 61 for local trips.

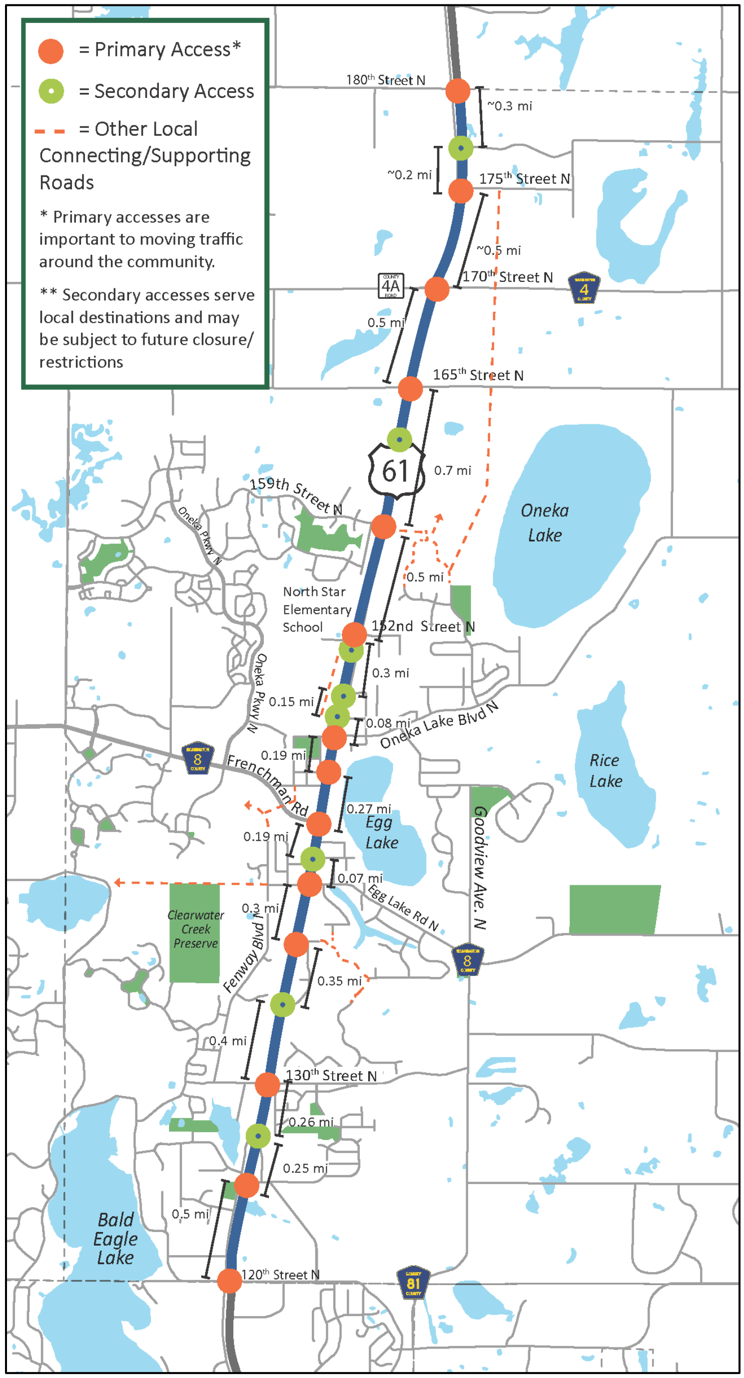
The layout can be found in **Appendix E – Corridor Layout**. The following sections outline the study process and key outcomes as related to the study goals.

Access Management

Study Goal: *Evaluate access and intersection locations onto Highway 61 and recommend future improvements at key locations.*

As part of concept development, the project team established a blueprint for primary and secondary access locations along the corridor. Primary access locations are generally full-movement intersections that may be considered for future signalization (traffic signals) or roundabouts. They are junctions between two major roads and are important to moving traffic around the community and across Highway 61. The spacing of primary intersections is guided by the need to provide uniform spacing for safe and efficient traffic operations, effective signal coordination in urban/urbanizing areas, and adequate spacing for left-turn lanes at unsignalized intersections in both urban and rural areas. Secondary access locations are junctions between a major road and a minor road or a local street. Secondary access intersections serve local destinations and may be subject to future access modifications (closure or movement restrictions).

Figure 7. Highway 61 Access Blueprint



MnDOT and Washington County both have access management guidelines that provide spacing recommendations between primary intersections, as well as recommended spacing between primary and secondary intersections. Proposed primary intersections along Highway 61 are illustrated in (***Figure 7***) and include 120th Street N/N County Line Rd, 125th Street N, 130th Street N, 137th Street N, 140th Street N (CSAH 8), Frenchman Road (CSAH 8), 145th Street N or 146th St N, 147th St N/Oneka Lake Blvd N, 152nd Street N, 159th Street N, 165th St N, 170th St N, 175th St N, and 180th St N.

In addition to primary and secondary intersection locations, private access points play an important part in access management strategies. Where possible, private access points along Highway 61 should be consolidated or relocated to local street access with improvements projects or redevelopment. The corridor layout included in **Appendix E – Corridor Layout** identifies private access points that appear to be “candidates for closure” in these instances.

Right-of-Way Needs

Study Goal: *Determine right-of-way needs based on the needs of each travel mode (e.g., cars, trucks, transit, pedestrians, bicyclists).*

Determining right-of-way (ROW) dedication needs was an important part of this study to support local land use and development decision-making. The Project Management Team reviewed traffic, non-motorized, and transit modal needs to explore what typical cross sections of the corridor may look like and what size footprint is needed for those modes together.

The Rush Line Transit corridor, and parallel property owned by the Washington County Regional Rail Authority, is a unique element to this corridor and warranted special attention. Through the additional stakeholder engagement, as outlined earlier in this report, there was support to move forward with a “unified transportation corridor,” blurring the lines between the highway ROW and Regional Rail property to provide more flexibility in balancing transportation and land use needs.

Segment Cross Sections

Cross-sections were used to explore spatial needs in each corridor segment. The following section outlines the unique characteristics of each segment section. All segments include two vehicle through lanes in each the northbound and southbound direction, median width to accommodate turn lanes at intersections, and the addition of a boulevard and trail extension on the east side of the corridor.

Along the entire corridor, full turn lanes should be constructed with any future intersection improvements including mainline and side street approaches. This is especially important at primary intersection locations to support efficient local and regional circulation. Additionally, for the purposes of this planning study, assumptions were made for traffic controls as shown on the layout. Specifically, the PMT determined to defer to the traffic control requiring the greatest amount of ROW dedication in order to offer the greatest flexibility in future improvements. *Traffic controls at each intersection will be determined at the time of improvement projects.*

The typical cross sections and turn lane and traffic control assumptions were used as the basis in the development of the planning level layout included in **Appendix E – Corridor Layout.**

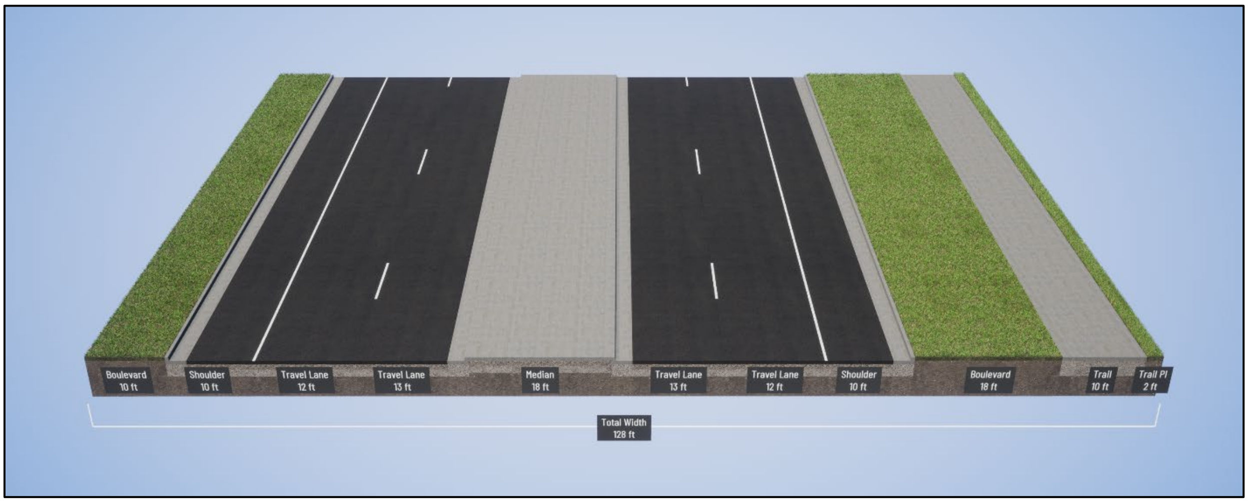
South Segment (120th to 140th)

This segment is characterized by the active rail line on the west side of the highway corridor. The proposed layout in this section was built off of the railway property line along the west side of the corridor. Continued coordination with the rail owner and operator will be necessary for improvement projects in this segment. Additionally, the Hardwood Creek Trail extension from 140^{th} St/CSAH 8 south to the Ramsey County line has been identified to follow parallel local streets on the west side of the highway and rail corridors; sidewalk/trail connections and wayfinding to this should be considered as improvement projects are identified in this segment.

Specific segment details include:

- Primary access intersections at 120th Street N, 125th Street N, 130th Street N, 137th Street N, and 140th Street N.
- Secondary access intersections at Fenway Ave N and 134th Street N.
- A future southbound left turn lane at the intersection with 125th Street N.
- Future eastbound and westbound left turn lanes with signal phasing at 140th Street N.
- Local Street Network Improvements
  - A short extension of 138th Street to connect two residential sites to 138th Court N.
  - A shared drive across six parcels with a single access point between 137th Street and 140th Street.
- Four private access points that are candidates for closure if access can be gained through future development or alignment with a local street.

Figure 8. Typical Section for the South Segment (120th Street N to 140th Street N)



Downtown Hugo (140th to 152nd)

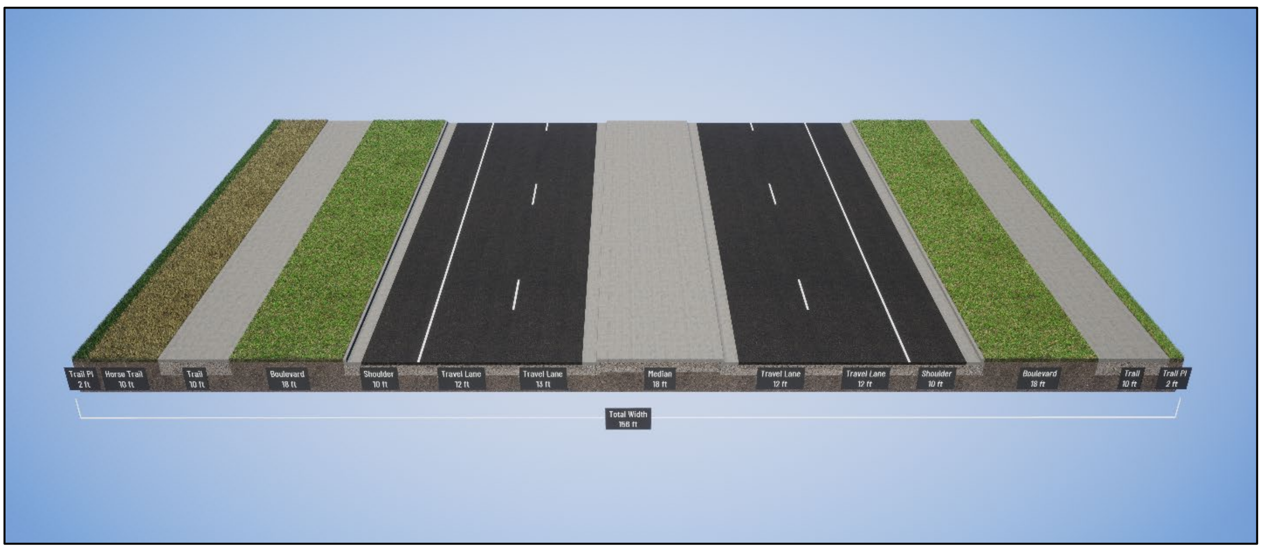
This segment is characterized by existing commercial businesses and planned zero-setback downtown development on either side of the highway corridor. The proposed layout in this section was built off of the eastern property line of existing businesses to reduce impacts to existing businesses and to maximize development opportunities between the highway corridor and Egg Lake. The right-of-way dedication outlined in this segment can be used to inform local planning and development decision-making in support of this goal. As improvement projects are identified, specific transportation infrastructure dimensions, design details, and right-of-way needs can be further refined. The Hardwood Creek Trail (paved and soft surface trails) runs along the west side of the corridor and is planned to remain with any future improvements.

Specific segment details include:

- Primary access intersections at 140th St N/CSAH 8, Frenchman Road/CSAH 8, 145th St N or 146th St N, 147th Street N/Oneka Lake Blvd N, and 152nd Street N.
- Secondary access intersections at 141st Street N, 142nd Street N (or potential closure at this location), 148th Street N, and 150th St N
- A future southbound left turn lane and a northbound right turn lane at 141st Street N.
- An additional northbound left turn lane at Frenchman Road.
- A northbound right turn lane at 148th Street N.
- Local Street Network Improvements:
    - A planned future roadway extension and intersection connecting CSAH 8 (Frenchman Road) to 142nd Street N to the south and 145th Street N to the north, west of Highway 61.
    - A planned roadway extension to connect Flay Avenue N and 150th Street N.
    - A County recommended local connection from 152nd St N to the Hugo Estates Manufactured Home Community

20 private access points that are candidates for closure if access can be gained through future development.

Figure 9. Typical Section for the Downtown Segment (140th Street N to 152nd Street N)



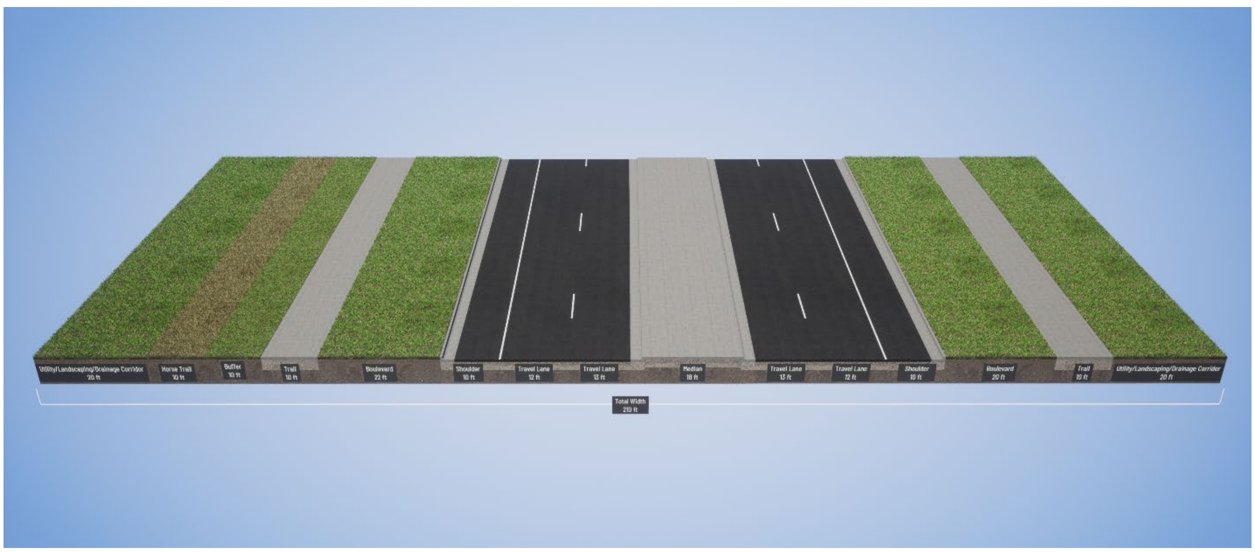
North Segment (152nd to 180th)

This segment is characterized by the widest available right-of-way (accounting for the highway and Regional Rail property), less dense development, and a combination of industrial and residential uses. The Hardwood Creek Trail (paved and soft surface trails) runs along the west side of the corridor and is planned to remain with any future improvements. The wider available ROW provides the opportunity for additional buffers for the trails on either side of the corridor from the highway and adjacent properties.

Specific segment details include:

- Primary access intersections at 159th Street N, 165th Street N, 170th Street N, 175th Street N, and 180th Street N.
- Secondary access intersections at 177th Street N.
- A possible secondary access on the east side of Highway 61 between 159th Street N and 165th Street N based on future development.
- Northbound and southbound left turn lanes at 165th Street N.
- Intersection realignment and northbound and southbound right and left turn lanes at 175th Street N.
- Intersection realignment and reconstruction at 180th Street N.
- Local Street Network Improvements:
    - A future backage road for business access between the end of Goodview Trail N and 159th Street, on the east side of Highway 61.
- Sixteen private access points that are candidates for closure if access can be gained through future development.

Figure 10. Typical Section for the North Segment (152nd Street N to 180th Street N)



Right-of-Way (ROW) Dedication

Through this study process, the project team was able to reduce ROW dedication needs throughout the corridor as compared to the guidance in the *2008 Corridor Access Management Plan MOU with Layout.* The corridor layout as included in **Appendix E**, provides specific ROW dedication needs, but in general dedication needs:

- in the South Segment were reduced by half, from 40-feet to 20-feet.
- in the Downtown Segment were consolidated and reduced
- in the North Segment were reduced to zero.

As specific improvement projects are identified and progress from planning level study to preliminary design, there will be additional opportunities to explore final design dimensions throughout the corridor.

Multimodal Improvements

Study Goal: *Identify pedestrian and bicycle safety and connectivity improvements throughout the corridor.*

Several concerns that were heard through stakeholder engagement were related to trail or sidewalk gaps and the limited ability to cross Highway 61 to access local destinations or the Hardwood Creek Regional Trail. Additionally, there was a desire to “lean into” the existing Regional Trail corridor - to protect that unique community asset and explore opportunities to expand or enhance the recreational experience – creating a “high-intensity recreation corridor” through Hugo. This study, and the layout developed from this study, maintain the regional trail corridor along the west side of the highway north of 140^{th} St N. At the time of this study, separate efforts are ongoing to extend the trail from 140^{th} St N, south to the Ramsey County border via parallel local streets to the west of the active rail line.

Furthermore, a continuous trail with a boulevard on the east side of the highway is included in the proposed vision. Continuous trail connections along both sides of the highway will help facilitate multimodal travel along Highway 61 and will connect pedestrians, rollers, and bikers to controlled crossing locations. The identification of primary intersection locations also provides guidance for additional crossing locations. ADA enhancements and marked crossings are identified at all controlled crossing locations.

Lastly, while not listed within the study goal and as mentioned previously in this report, the Rush Line Transit Corridor from St. Paul to Hinkley runs along Highway 61 through Hugo. The proposed "unified transportation corridor" and vision for Highway 61 supports the latest transit guidance for a connecting bus route within Hugo from the 2017 Locally Preferred Alternative Report.

Corridor Aesthetics

Specific stakeholder engagement questions were included to better understand desired corridor aesthetics for the Highway 61 corridor. The first Open House, Hugo Good Neighbor Days Pop-Up, the EDA/Planning Commission Work Session, and property owner meetings all provided insight into the desired vision for how the corridor should look and feel.

The City’s 2007 Downtown Plan and Design Guidelines and the Frenchman Road/CSAH 8 corridor were frequently referenced as examples of a preferred aesthetic. There was a desire to continue many of the elements included along Frenchman Road/CSAH 8 to build a sense of consistency and branding throughout the City’s commercial areas. Generally, it was accepted that the downtown area may have a higher concentration of aesthetic elements to support placemaking, but there was a desire to continue elements to some degree throughout the entire corridor. Lastly, there were several comments in support of burying the existing power lines that run along the highway corridor (specifically near downtown).

Specific corridor aesthetics will be determined at the time of specific improvement projects in coordination with the city and will be subject to local cost participation. Additionally, highway design speeds and clear zones will dictate the placement of aesthetic elements and will need to be considered as improvement projects are identified.

Next Steps and Implementation Strategies

Jurisdictional Transfer Plan

A Jurisdictional Transfer Plan was developed in coordination with the Highway 61 Corridor Visioning Study. Jurisdictional Transfer is when ownership of a roadway is transferred from one roadway authority to another. The overall objective of Jurisdictional Transfer is to ensure that Minnesota roads are owned and operated at the appropriate jurisdictional level (i.e. by the right agency). Jurisdictional Transfer is important because properly aligned roads more appropriately provide the right level of service, and better meet customer expectations for maintenance, ride quality, and safety. The extents of the Jurisdictional Transfer Plan include the entirety of Highway 61 within the County including segments in Hugo and Forest Lake. It is anticipated that the 12.5 miles of current Trunk Highway will be transferred to the County in segments; these segments must maintain the continuity of the Trunk Highway system. The timing of the transfer of ownership is unknown at this time, however, the findings and outcomes from this study can be used as guidance for corridor decision-making by applicable agencies.

Priority Projects along Highway 61

Priority projects along Highway 61 are identified and grouped into priority projects and opportunity-driven projects. This phased approach works within other transportation infrastructure programming frameworks like municipal master plans and county-level capital improvement plans. Recommended projects do not have funding programmed but do identify potential funding sources. Project recommendations fit into the following time horizons:

- **Priority Projects** address locations with high fatal and severe crash rates, address emerging operational issues with low- to medium-cost interventions, proactively address known, but less severe, operational and safety issues throughout the corridor, as well as forecasted needs as identified within a typical 20-year planning horizon. The plan recommends that Priority Projects be programmed in the next five to fifteen years (2025 to 2040).
- **Opportunity Driven Projects** mostly reflect the longer-term vision study analysis, including the findings of the traffic forecasts and anticipated congestion analyses, public and partner agency input, and safety needs. As “opportunity-driven” projects, the timing of these may shift to a fiscally constrained timeframe if funding becomes available.

Priority and Opportunity Driven projects should be implemented as funding becomes available, based on need, community input, and development/redevelopment opportunities. Local development planning, decision-making, and implementation will play a large part in identifying timing and feasibility for Opportunity Driven projects.

Priority Projects (Year 2025-2040)

Roadway maintenance, safety, continuity, and spot safety improvement projects to accommodate traffic growth, congestion, and safety needs are considered to be high priority. Many of the identified high-priority projects are designated as such due to multimodal safety concerns. Medium Priority Projects provide recommendations to further study and potentially address known, but less severe, operational and safety issues throughout the corridor. Priority Projects have not gone beyond initial limits identification and will require additional studies for project and concept development, as well as coordination with local stakeholders and partner agencies to ensure that these projects are worth further consideration.

High-priority projects along the Highway 61 corridor include:

- Reconstruction of Highway 61 as a 3-lane section between 140th Street and Frenchman Road (programmed project in 2025)
- Addition of turn lanes, and PROWAG/pedestrian crossing improvements at the intersection of Highway 61 and Frenchman Road
- Improved and expanded sidewalks/trails throughout the Highway 61 study area
- Construction of Hardwood Creek Trail Extension south to the County line
- Construction of 130th St N trail – west of Highway 61
- Remove rail within 140th St N along Highway 61

Medium-priority projects include:

- Pedestrian crossing improvements to meet current accessibility standards at 120th St N, 130th St N, 140th St N, 145th St N (side street legs), and 146th St N (side street legs)
- 125th St N – addition of southbound left turn lane and side street pedestrian crossing improvements to meet current accessibility standards.
- 148th St N – addition of northbound right turn lane
- 150th St N - addition of northbound right and left turn lanes and side street pedestrian crossing improvements to meet current accessibility standards.
- 165th St N - addition of northbound and southbound left turn lanes and side street pedestrian crossing improvements to meet current accessibility standards.
- 175th St N - addition of northbound and southbound right and left turn lanes, side street pedestrian crossing improvements to meet current accessibility standards, and correction of intersection offset with Forest Road North

Project implementation is dependent on the availability of state, local, and federal funding. Proposed project implementation timelines may change based on several factors such as local growth and development, guidance from county and municipal team members, and availability of non-local funds.

Opportunity Driven Projects

The majority of the opportunity-driven projects are recommended because they will address capacity deficiencies or system connectivity issues identified through future traffic and systems analysis and discussion with PMT. None of these projects have gone beyond the analysis conducted in this plan, which has identified a potential need or concern that would justify further analysis. That means that all future project development would require further analysis for right-of-way impacts, potential environmental impacts, and other future projects and conceptual development before they can be programmed. Identified opportunity-driven projects include:

- Expansion of Highway 61 to a four-lane roadway
- Completion of the planned Hardwood Creek Regional Trail Route
- Additional bicycle and pedestrian infrastructure
- PROWAG improvements throughout the corridor
- New intersection at 180th St N

Funding Opportunities

A proactive funding plan that includes a priority list of needs, a strategized approach, and updated planning documentation and data tracking, allows agencies to approach funding opportunities and leverage funding to deliver a vision that exceeds a community's goals. In addition, having projects planned and ready for funding pursuits is highly beneficial in economically challenging times in which unique and often one-time solicitations are made available to stimulate economic recovery when local, county, and state revenues cannot do so on their own.

The following is a summary of state and federal grants for which the Highway 61 Corridor would be eligible, along with a summary table that details program award amounts, application timelines, and funding types ***(Table 1).*** All listed programs can be applied for, and funds can be combined, to deliver priority projects. Understanding what each grant source seeks to fund will help Washington County and the City of Hugo strategize how to use the funds to achieve short-term and long-term goals.

- The **Highway Safety Improvement Program (HSIP)** funding is a federal-aid funding program designed to reduce traffic fatalities and serious injuries on all public roads. The objective of this program is to identify, implement, and evaluate cost-effective construction safety projects. Only projects identified in a County Road Safety Plan or with a benefit-cost ratio above 1.0 are eligible for funding. MPO approval is required for funding. Typically, high-impact, small projects are the most competitive. A 10% local match is required. Solicitation is available every two years and applications are typically due in June and awarded in early fall. http://www.dot.state.mn.us/stateaid/trafficsafety.html
- The **Safe Streets and Roads for All (SS4A)** discretionary program will provide $5-6 billion in grants through 2026. Funding supports local and regional initiatives to prevent roadway deaths and serious injuries. The SS4A program supports the Department's National Roadway Safety Strategy and a goal of zero deaths and serious injuries on our nation's roadways. To be eligible for funding, the applicant must develop a Comprehensive Safety Action Plan and conduct planning, design, and development activities in support of the plan. The SS4A program offers planning grants to help agencies draft Safety Action Plans. The completion of a Safety Action Plan will then make the applicant eligible for implementation funding through the SS4A program. A 20% local match is required, and there are three rolling deadlines in April, May, and June. https://www.transportation.gov/grants/SS4A
- The **Rural Surface Transportation Program** supports projects that improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, generate regional economic growth, and improve quality of life. The solicitation is made available under the Multimodal Project Discretionary Grant Opportunity (MPDG) which will provide $5 billion in grant funding through 2026. Applications for this program are evaluated using several criteria, including safety, a project's ability to restore transportation infrastructure to a state of good repair, economic benefits, environmental sustainability, equity, and innovation. Applications are typically due in the fall. https://www.transportation.gov/grants/rural-surface-transportation-grant-program
- The **Local Road Improvement Program (LRIP)** is a state-funded (MnDOT) program intended to pay for local road construction or reconstruction projects with local, regional, or statewide significance that cannot reasonably be funded through other revenue sources. LRIP funding can also be used to fund streetscape elements and enhanced pedestrian crossings that meet the MnDOT cost participation policy. The LRIP funds must be used outside Trunk Highway right-of-way and do not require a set local match. Program funding is dependent on state bonding bill allocations. In 2023, the program was allocated $103 million for local communities and applications were due in December. https://www.dot.state.mn.us/stateaid/lrip.html

- The **Local Partnership Program (LPP)** funds locally identified improvements to state highways, particularly locations where the local transportation network intersects with the state system. The LPP is a MnDOT-funded project that was created to provide statewide transportation partnership opportunities with local agencies. Within each MnDOT district, cities and counties apply for funding based on specific district standards and application requirements. To be eligible, projects must benefit a trunk highway. Washington County is located in the MnDOT Metro District. By 2030, Metro District is projected to invest $3.6 billion in state highway projects, with the majority of projects addressing pavement conditions, conditions of bridges, safety improvements, and pedestrian/bicycle infrastructure. https://www.dot.state.mn.us/projectselection/districts/metro.html
- **State Bonding Requests** involve a formal application to have a project included in an upcoming state Bonding Bill. These requests are intended to pay for public facility construction or reconstruction projects with local, regional, or statewide significance. Funds can be requested for roadway and/or standalone nonmotorized transportation projects in addition to community development projects. There is a good opportunity for Washington County and other project partners to seek advocates and resources made available through the Legislative-Citizen Council on Minnesota Resources. Applications for this request are typically due in June, and inclusion in the proposed bonding bill is announced between late summer and the following early spring. https://www.lccmr.mn.gov/
- **Congressionally Directed Spending**, known more commonly as federal earmark funding, is a federally funded program intended to pay for different projects as listed at the discretion of elected officials. High-impact projects are prioritized through this program. Funding matching with congressionally directed spending is dependent on the classification and purpose of the project. Applications for this program are typically due in March and grant awards are announced by early spring of the following year. www.appropriations.senate.gov
- **Regional Solicitation** is a federally funded program distributed regionally through the Metropolitan Council. This program exists to distribute funding for roads, bridges, transit, and multimodal improvements to communities in the seven-county Twin Cities metro area. The primary purpose must be transportation. Awards for this program require a 20 percent local match. The Regional Solicitation Evaluation process occurred concurrently with this study. Completion of that evaluation will provide updated program categories, criteria, and application timelines. https://metrocouncil.org/Transportation/Planning-2/Transportation-Funding/Regional-Solicitation.aspx

Table 1. Summary of Funding Opportunities

Funding Program	Maximum Award	Solicitation Timing	Funding Type
Highway Safety Improvement Program	$750,000 per project, $3M per agency	Early Summer	Federal
Safe Streets and Roads for All	Planning: $10M, Implementation: $25M	Mid-Summer	Federal
Rural Surface Transportation Program	No max, average over $25M	Late Fall	Federal
Local Road Improvement Program	$1.5M	Mid-Winter	State
Local Partnership Program	$1M	Spring	State
State Bonding Requests	N/A	Early Summer	State
Regional Solicitation	$4.5 million	Late Winter	Federal
Congressionally Directed Spending	$5 million	Spring	Federal

Final Report Appendix A – Public Involvement Summary

Highway 61 Visioning Study

Open House Summary

ABOUT 110 ATTENDEES

MAJORITY LIVE LESS THAN A QUARTER MILE OF AREA

109 ONLINE SURVEY RESPONSES

INTERACTIVE INPUTiD MAP

OPEN HOUSE OVERVIEW

The April 5 open house did not include a formal presentation. Project representatives were present, along with large displays highlighting traffic patterns, existing conditions and future land use projections. Attendees made notes and comments on the study area map, shared community characteristics, and wrote corridor and roadway improvement ideas on display boards. Comments were also collected on printed comment cards. The open house was promoted via electronic message sign located on the corridor, on Facebook, Nextdoor, Twitter, the project website and 245 mailers were sent via USPS.

ONLINE ENGAGEMENT

Washington County created a project website and an online story map. Both sites shared project goals, existing conditions and promoted public involvement opportunities. Two social media posts promoted the open house and directed users to the project website to review project material. Posts made to Facebook received the most traffic, reaching nearly 18,000 users.

An interactive comment map (INPUTiD) was launched, allowing users to identify location-specific concerns, make suggestions and post general comments.

Following the open house, an online public survey was available for two weeks. Survey participants (109) shared their travel habits, described the community, and commented on the look, feel and function of the corridor.

COMMON THEMES AND TAKEAWAYS

Common themes and takeaways from the online survey, open house feedback and interactive map include:

- **PEDESTRIAN AND BICYCLE INFRASTRUCTURE:** Desire for improved pedestrian and bicycle facilities, and clearly marked crosswalks.
- **HIGH SPEEDS:** Concerns expressed regarding high traffic speed.
- **LEFT TURNS:** Finding a gap to make a left turn onto/off of the highway is difficult.
- Hugo is described as a safe and growing community with a "small town feel." Parks and natural resources are key features in the area.
- Motor vehicles are the most common form of travel along the corridor, followed by recreational use (walking, biking and rolling).

COMMUNITY DESIRES

Survey participants were asked to share key words or phrases describing how they would like to see the Hwy 61 corridor look, feel and function in the future.

Washington County · Minnesota Department of Transportation · City of Hugo · Bolton & Menk

Highway 61 Visioning Study

PROJECT OVERVIEW

Washington County, MnDOT and the City of Hugo are partnering on a corridor visioning study of Hwy 61 through Hugo city limits. A traffic, land use and engineering analysis, along with community input will help identify the long-range vision for the corridor that will be used to define future improvements and guide a potential jurisdictional transfer of the roadway from MnDOT to Washington County.

STUDY GOALS

- Define a corridor vision that supports economic growth, community investment and long-term transportation goals while increasing safety for all users.
- Evaluate access and intersection locations onto Hwy 61 and recommend future improvements at key locations.
- Determine right-of-way needs for the corridor based on the needs of each travel mode (e.g., cars, trucks, transit, pedestrians, bicyclists).
- Identify pedestrian and bicycle safety and connectivity improvements throughout the corridor.
- Determine a financial plan and timeline for the Hwy 61 jurisdictional transfer through Hugo and Forest Lake.

STUDY AREA

SCHEDULE

Explore
Winter/Spring 2023

Collect data and assess existing/forecasted conditions.

Consider future development in Hugo and Forest Lake.

Explore corridor issues and opportunities.

Evaluate
Summer 2023

Develop and evaluate corridor improvement alternatives with consideration to community priorities and traffic engineering solutions.

Define
Fall/Winter 2023

Define a preferred corridor vision.

Compile study report summarizing process and outcomes.

Outline jurisdictional transfer plan including implementation, financial and timeline considerations.

WANT MORE INFO?

Visit the project webpage for more information, study updates and to sign up for email notifications!

www.co.washington.mn.us/Highway61

Maddie Dahlheimer
Washington County Senior Planner
651-430-4338 | madeline.dahlheimer@co.washington.mn.us

Rachel Juba
Hugo Community Development Director
651-762-6304 | rjuba@ci.hugo.mn.us

Highway 61 Visioning Study
Open House Summary

62 ATTENDEES
20 COMMENTS

An open house was held on Aug. 15, 2024 to share outcomes from the Highway 61 Visioning Study. Following this open house, the project team will document the study in a final report and continue to coordinate with partner agencies on the the best approach to memorializing outcomes. The outcomes of the study will help guide planning and improvement project decision making from today as the project team works toward incremental, long-term implementation of this vision.

COMMON THEMES AND TAKEAWAYS

- Support for intersection control improvements at Hwy 61/125th St N based on safety concerns; request for it to be a high priority
- General support for local connections; some requests for turn lane changes
- Support for multi-use trail on east side of Hwy 61
- Request for a nosie wall in the Hwy 61 / 125th St. N intersection area
- Discussion around access management and access types
- Requests for further traffic analysis as future projects are identified to ensure "right-sizing" of roadway (3-lane or 4-lane)

Final Report Appendix B – Existing Conditions Memorandum

Washington County

Highway 61 Visioning and Jurisdictional Transfer Study

EXISTING CONDITIONS MEMORANDUM

Washington County

Contents

Introduction 3
- Study Area Overview 4
- Previous Studies 4

Demographics and Trends 10
- Populations and Households 10
- Employment and Transportation 12
- Environmental Justice Population Analysis 13

Land Use 15
- Existing and Future Land Use 15
- Major Traffic Generators 16

Transportation System Characteristics 18
- Roadway Functional Classification 18
- Access Inventory and Categories 19
- Typical Section and Right of Way 19
- Freight Conditions and Commercial Railways 20
- Active Transportation Facilities 20
- Transit Facilities 22

Existing Traffic Conditions 23
- Turning Movement Counts 23
- Traffic Operations 24
- Traffic Safety and Crash History 26

Environmental Screening 32
- Topography and Landforms 32
- Water Resources 32
- Hazardous Materials and Potentially Contaminated Sites 32
- Sensitive Ecological Resources 34
- Visual 34
- Air and Noise Considerations 34

Public Engagement Summary 35

Appendices

Appendix A – Figures

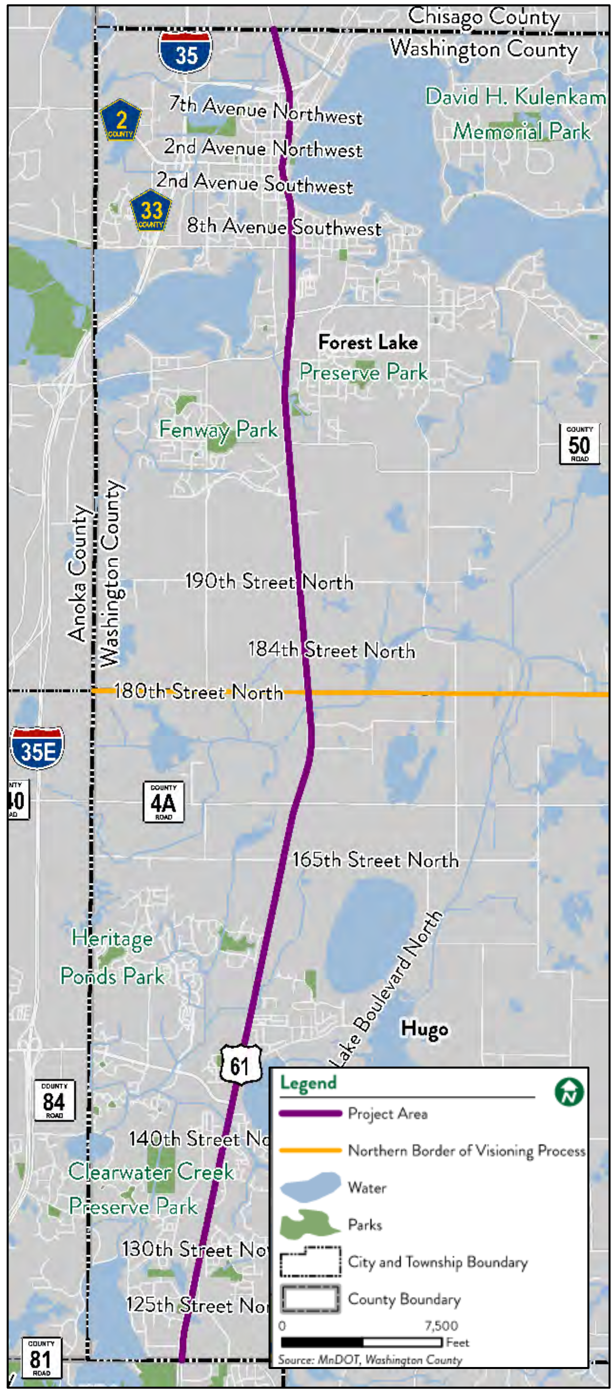
Appendix B – Tables

Appendix C – Public Engagement Summary

Introduction

Washington County is partnering with the Cities of Hugo and Forest Lake to define a long-term vision for Highway 61 that is innovative and fundable while ensuring safety, mobility, economic vitality, and resiliency with consideration to all modes of travel. The Highway 61 Visioning and Jurisdictional Transfer Study will develop a comprehensive plan for future corridor development in response to population growth in the area. The study area, depicted in ***Figure 1***, has been studied numerous times throughout the past two decades. This study will combine prior knowledge with new data and community input to address existing concerns and plan for the future of transportation in Washington County.

Figure 1. Study Location



The purpose of this memorandum is to document existing conditions, assess previous studies and planning efforts around the study area, and identify and confirm issues along Highway 61 within the Visioning Process study area. As depicted in ***Figure 1***, the Visioning Process will study Highway 61 in Hugo, terminating at 180th Street N. This memo is organized into the following sections:

- Previous Studies and Planning Efforts
- Demographics and Trends
- Land Use and Major Traffic Generators
- Transportation System Characteristics
- Existing Traffic Conditions
- Environmental Screening
- Summary of Public Engagement

This information will guide the development of plan goals and objectives and ultimately the identification of improvement alternatives for Highway 61. Following the Visioning Study, the project team will use the information gathered during the study to complete a Jurisdictional Transfer Agreement for the corridor. The project partners have long considered transferring the jurisdiction of Highway 61 to better meet the needs of the corridor.

Study Area Overview

Highway 61 has been a hub of activity within the City of Hugo since its conception in the mid-19^{th} Century. In Hugo, Highway 61—then Forest Boulevard—was developed as the town center beginning in 1868 when the St. Paul and Duluth Railroad was constructed through the area. The existence of the railroad was essential to Hugo's early economy, and quickly became the center of the developing settlement, bringing residents and businesses to the corridor. Today, Highway 61 is the route with the highest north-south traffic volume in the city and is also the location of most of the industrial and several commercial uses.

Previous Studies

The initial effort for this study included a review of the body of previous studies and planning efforts that shaped the Highway 61 corridor and surrounding land use through Hugo and Forest Lake. The key points in each study relevant to the corridor area are summarized below by plan title. The findings of these plans and studies will be considered when developing recommendations and an implementation plan for the Highway 61 Visioning and Jurisdictional Transfer Study. Summaries of the previous plans and studies listed here are included in ***Figures 2 and 3*** of ***Appendix A***.

Washington County 2040 Comprehensive Plan

The Washington County 2040 Comprehensive Plan describes the analysis, future projections, goals, and strategies that Washington County has developed for how decisions will be made over the next twenty years. The 2040 Comprehensive Plan is an official document adopted by the County Board as a guide for policy decisions about the physical development of the county. The Transportation Chapter of the Comprehensive Plan details the anticipated transportation needs and any potential additions to the transportation system that the county may need in the coming years. Highway 61 is a major roadway within Washington County and is mentioned in a variety of contexts. The plan mentions the potential jurisdictional transfer of Highway 61 from MnDOT to Washington County which is being studied as part of this effort.

Portions of the Highway 61 corridor are identified as transit market areas within this chapter, meaning the County has identified a need for transit based on educational and employment opportunities as well as access to vehicles. Highway 61 through Hugo is identified as part of Transit Market Area IV. Metro Transit states general public dial-a-ride services are appropriate in Market Area IV. The low-density development and suburban form of development present challenges to fixed-route transit. The Plan also discusses the usage and potential expansion of services at the Forest Lake Transit Center along Highway 61.

Washington County 2020 Bicycle and Pedestrian Plan

Throughout 2019 and 2020 Washington County conducted a bicycle and pedestrian planning process to establish a shared vision for a connected, convenient, and attractive network of on-road and off-road biking and walking facilities. This project was led by Washington County Public Works in collaboration with Washington County Public Health and Environment and Information Technology. As one of the primary transportation corridors in Washington County for all modes of transportation, Highway 61 is discussed at length in the Washington County Bicycle and Pedestrian Plan. The plan uses traffic stress maps, crash data, and resident demand to determine the future of the County's bicycle and pedestrian network. Maps show where there is enthusiasm and demand for walking and biking, with many areas along Highway 61 being highlighted. The study area corridor is also marked as a Tier 2 Alignment in the Metropolitan Council Regional Bicycle Transportation Network (RBTN). Some notable priority projects that connect to the study area include:

- Extension of the existing off-road facility, the Hardwood Creek Regional Trail, along Highway 61 to the northern border with Ramsey County.
- A new off-road facility along County Road 32 from Highway 61 to County Road 33
- A new off-road facility along County Road 4 from Highway 61 to the eastern county line
- A new off-road facility along County Road 8 from Highway 61 to the eastern county line

Plans for expanding walking and biking infrastructure are laid out with an emphasis on signage, enhanced bicycle and pedestrian crossings, and separation from roadways to ensure safety. Off-road facilities should consider the following design features:

- 8-10' in width with a preferred minimum 10' vegetated buffer between the trail and adjacent roadway
- ADA curb ramps installed at all crossings with high visibility crosswalk markings as necessary
- Continuous bituminous surface with a maximum of 5% running slope wherever possible

Hugo 2040 Comprehensive Plan

In 2019, the City of Hugo updated its Comprehensive Plan to provide overall guidance for development and growth in the City of Hugo for the next 20 years. The document provides the foundation for City decision making and gives a high-level overview of goals and policies that provide a framework for regulatory tools such as the zoning and subdivision ordinances. Through robust outreach to residents, the City of Hugo developed a plan for improving and maintaining the city's strengths which will be used in this study of Highway 61.

Highway 61 is identified as the primary north-south transportation corridor within the city, serving as a connecter between residential areas, shopping and service areas, places of employment, and nearby highways. The plan states that city development of dense residential and commercial areas will be focused along Highway 61 as well as the CSAH 4 and CSAH 8 growth corridors. Goals related to the Highway 61 corridor include:

- Promote commercial development along Highway 61 and CSAH 8.
- Continue to work with MnDOT and Washington County on a Trunk Highway 61 Corridor plan.
- Implement the plan in partnership with MnDOT, Washington County Transportation, and Washington County Regional Rail Authority that addresses the future typical section, right-of-way needs, access locations, and location(s) for potential traffic signals along Highway 61.
- Construct the Hardwood Creek Regional Trail extension along Highway 61, from 140th Street N (CSAH 8) to the southern city border.

Forest Lake 2040 Comprehensive Plan

In 2020, the City of Forest Lake updated its Comprehensive Plan to outline its vision for future development, land use, and maintenance of the city. The document draws on community input from open houses, task force meetings, and the vision statement of the City of Forest Lake. Highway 61 is identified as one of the primary north-south transportation corridors within the city, hosting a major bicycle and pedestrian trail—the Hardwood Creek Regional Trail. Redevelopment and new construction along the Highway 61 corridor are outlined as a key priority, with several intersections along Highway 61 mentioned as key employment areas. The city looks to expand these opportunities with continued development along the corridor. It is also noted that most residential growth is expected to occur east of Highway 61, and the roadway is expected to function over capacity by 2040.

City of Hugo Downtown Plan and Design Guidelines

The Hugo Downtown Plan began in 2003 and was published in 2007 using input from a community-wide open house in May 2004 and significant public participation between 2005-2006. A major influence on the plan is the County's re-alignment and improvement of County Road 8. This had a major impact on downtown Hugo, offering development opportunities. Hugo's downtown area is centered around County Road 8 and Highway 61. Highway 61 is an important transportation corridor for the city of Hugo, as it connects residents and visitors alike to the downtown business and entertainment district. This plan addresses the impacts of the intersection of Highway 61 and County Road 8 while also looking at how transportation improvements can increase business traffic. Despite projections of increased traffic volumes, the plan states that the highway should not be widened beyond four lanes except to provide for turn movements. Instead, improvements to the roadway and access improvements should be implemented to help accommodate increased traffic volumes.

This plan outlines new boundaries for the central business district along Highway 61. Creating a pedestrian-friendly space while also accounting for the safety of both motorists and pedestrians is covered, complete with a rendering of what downtown Hugo could look like after further development. The downtown plan recommends improvements to street access and connectivity within downtown, as well as enhancements to pedestrian access and walkability. Plans for a pedestrian bridge and greenspace with walking infrastructure in conjunction with the Harwood Creek Regional Trail are also proposed.

Forest Lake Downtown Plan

The Forest Lake Downtown Plan was published in 2022 after a robust planning process complete with three rounds of community engagement. The Plan identifies Highway 61 as an important artery through downtown Forest Lake. The Plan explores developing vacant parcels along the roadway, potential business and economic development options, and parking for downtown users along the highway. The lack of pedestrian crossings and increased traffic along Highway 61 was a concern identified by residents. Potential solutions to this issue, as well as potential development plans along the highway, were laid out. These include pedestrian crossings at many intersections, pedestrian-oriented lighting, trees and landscaping, wayfinding, and comfort amenities. The activation plan outlines steps to bring development and visitors to downtown Forest Lake.

Hardwood Creek Regional Trail Master Plan

The Washington County Parks and Open Space Commission published the Hardwood Creek Regional Trail Master Plan in 2013 to study the trail and develop a master plan for its extension and maintenance. The Harwood Creek Regional Trail corridor is a trail along Highway 61 that is part of the larger Washington County Regional Trail system. Maintenance of this trail, as well as its potential expansion, are of paramount importance to providing bicycle and pedestrian connectivity along the Highway 61 corridor. This plan details development issues, potential constraints, and enhancement opportunities for the trail. For the majority of the project corridor, the plan details no significant development issues related to the trail itself.

The Harwood Creek Regional Trail is identified as a major feature of the Highway 61 corridor in several previous plans, including the Washington County 2040 Comprehensive Plan, the Washington County 2020 Bicycle and Pedestrian Plan, the Hugo 2040 Comprehensive Plan, the Forest Lake 2040 Comprehensive Plan, mentioned in this document. Numerous trail development concepts are discussed, focusing on increased traffic, potential alternate routes during construction periods, and the addition of parking at trailheads along the highway so more people can access the trail. Multiple crossings are also examined to increase trail user safety. The plan determined that alternative intersections, like roundabouts, in combination with full separation from the roadway will result in the highest levels of trail user safety. The extension alignment is along a frontage road rather than Highway 61 due to the active rail line.

Hardwood Creek Regional Trail Extension Study

Washington County is leading the Hardwood Creek Regional Trail Extension Study to address the long-term pedestrian/bicyclist transportation, environmental, utility, right-of-way, and drainage challenges within the Hardwood Creek Regional Trail by studying the feasibility of completing a missing trail connection from Fenway Boulevard N and 130th Street N to 120th Street N (Ramsey County Rd J) in the City of Hugo. This study proposes that the Harwood Creek Regional Trail along Highway 61 be extended to address concerns about pedestrian safety, drainage, and accessibility. Between 130th Street and 120th Street (County Road J) the preferred trail corridor will utilize an off-road alignment and local road rights of way along Falcon Court and Falcon Avenue. In some places the width of the local roads may be narrowed to accommodate the 10-foot wide trail. This alignment was selected in part due to the railroad corridor remaining active in this area.

MnDOT and Washington County Jurisdictional Transfer Memorandum of Understanding (1996)

This document outlines jurisdictional transfers through the 2015 comprehensive planning cycle. Maps show that jurisdiction of Highway 61 is planned to transfer from the state to Washington County. Both parties acknowledge that this Memorandum of Understanding (MOU) is a nonbinding statement of intent and is signed by several local officials from the state, county, and local levels. It was the intent of all parties to achieve all jurisdictional transfers on routes listed within the 2015 Transportation Plan planning timeframe.

US 61 IN Hugo Corridor – Access Management Plan Memorandum of Understanding (2008)

This MOU establishes that a Corridor Access Management Plan for the Highway 61 Corridor through the city of Hugo was completed and will be implemented over time. The MOU contemplates parking along Highway 61 within downtown Hugo. This will be studied as part of the Highway 61 Visioning and Jurisdictional Transfer Study. Stakeholders from the state of Minnesota, Washington County, the City of Hugo, and the rail authority met to develop an implementation plan for the Corridor Access Management Plan. The MOU is not a binding agreement and merely depicts a proposed plan of action for the mutual convenience of the parties.

US 61 In Forest Lake – Access Management Plan Memorandum of Understanding (2010)

This MOU establishes that a Corridor Access Management Plan for the Highway 61 Corridor through the city of Forest Lake was completed and will be implemented over time. Stakeholders from the state of Minnesota, Washington County, the City of Forest Lake, and the rail authority met to develop an implementation plan for the Corridor Access Management Plan. The MOU is not a binding agreement and merely depicts a proposed plan of action for the mutual convenience of the parties.

MNDOT Access Management Plan

The MnDOT Access Management Plan details the functional classifications of all roadways within the state of Minnesota trunk highway system. Highway 61 is classified in the Access Management Plan as a regional corridor transportation area, meaning that it connects smaller trade centers to the rest of the state. The importance of maintaining these connecting roadways was stressed and Highway 61 was listed as an example in the plan.

State Highway Jurisdictional Transfer Program

The MnDOT State Highway Jurisdictional Transfer Program Information Sheet details the importance of assigning roads to the jurisdictions best suited to operate them effectively and efficiently. In 2014, the Minnesota Jurisdictional Realignment Project report was completed, and it identified approximately 1,181 miles of roadway related to the state highway system that are potentially misaligned by ownership. This includes the transfer of Highway 61 in Hugo and Forest Lake from MnDOT jurisdiction to Washington County jurisdiction.

Washington County Regional Railroad Authority Property Management Plan

The Washington County Board of Commissioners approved the establishment of the Washington County Regional Railroad Authority (WCRRA) in 1987. The goal of the WCRRA is to preserve former and current railroad right-of-way for continued and future transportation use. The WCRRA acquired property in Hugo from the Burlington Northern Railway in 1994. The purpose of the Property Management Plan is to address current and future use, current access future access needs, current condition, and disposal of the property. The plan details the management of WCRRA property through permits, leases, and sales and describes how these management tools will be used.

Metro Transit Purple Line/Rush Line Bus Rapid Transit Project

The Rush Line BRT project transitioned to the Metropolitan Council as the METRO Purple Line in 2021. The Purple Line is a proposed 15-mile bus rapid transit (BRT) line that would serve the communities of St. Paul, Maplewood, Vadnais Heights, Gem Lake, White Bear Township, and White Bear Lake. The route was selected in 2017 and would connect downtown St. Paul to White Bear Lake via Pennsylvania Avenue, Phalen Boulevard, Ramsey County Regional Railroad Authority right-of-way (the Bruce Vento Trail), and Highway 61. The plan recommends further exploration of a connector bus service with feeder bus service along Highway 61 to Forest Lake through the City of Hugo. The Metropolitan Council's current Transportation Policy Plan does not show any transitway investments planned for the Highway 61 corridor through Hugo and Forest Lake in the current revenue scenario.

White Bear Lake School District Facilities Master Plan

The White Bear Lake School District Facilities Master Plan includes construction plans for the recently constructed North Star Elementary School in the city of Hugo. Plans for the physical school are laid out in addition to cost estimates. This includes plans for additional parking and intersection changes along Highway 61 and the Harwood Creek Regional Trail. Traffic volumes at peak times are also considered. The school has since been constructed and opened for the 2022-2023 school year The reconstruction of the intersection is also complete.

Forest Lake Southwest Development Area Final Alternative Urban Areawide Review (AUAR)

In 2005, an AUAR (Alternative Urban Areawide Review) was completed for the Southwest area of Forest Lake, including Highway 61. This process evaluated potential environmental impacts of future development; in this case, along the Highway 61 corridor through Forest Lake. Due to expected development, several intersections along Highway 61 are discussed from a safety and environmental hazard standpoint using traffic forecasts and crash data.

Highway 61 Aesthetics and Water Quality Improvements Planning Study

In 2012, the City of Forest Lake published this planning study to examine ways to improve water quality impact from the addition of impervious surfaces and aesthetics on and around Highway 61 from Highway 97 to Highway 8. The study outlined various stormwater management plans for the subject portion of Highway 61. This included reducing impervious surfaces by constructing vegetative filter strips, pervious pavers, tree trenches, and iron filing trenches. The plan shows how bioretention buffers, pedestrian infrastructure, and vegetation could be implemented to improve water quality and help with runoff issues. Suggestions were also made to reduce access to the highway to limit hazardous pedestrian crossings.

Highway 61 and 152nd Street Intersection Control Evaluation Report

As part of the recent construction of the North Star Elementary School, the city of Hugo and MnDOT prepared an Intersection Control Evaluation (ICE) report to determine how the construction and opening of a new school will impact traffic operations along the corridor. Further, peak times like morning drop off, afternoon pick up, and other peak hours were evaluated against current and future traffic volumes. Proposed intersection changes include trail realignment, a new traffic signal, and turn lanes added on all four legs of the intersection.

Highway 61 and 159th Street Intersection Control Evaluation Report

In anticipation of future development, the city of Hugo and MnDOT prepared an ICE report for the intersection of Highway 61 and 159th Street. The evaluation aimed to analyze various intersection control alternatives for the intersection under existing and future conditions to identify a preferred intersection control alternative that can accommodate a proposed development of single-family homes in the area. The following alternatives were considered applicable:

- Side-Street Stop Control
- Traffic Signal Control
- Roundabout Control

This intersection is currently a three-legged intersection with side street stop control and business access to the east. After reviewing traffic operations and intersection safety, the report recommended that the intersection be replaced with a 4-leg roundabout to improve safety with expected future traffic volumes. Further coordination with MnDOT should occur to ensure the roundabout is designed to accepted standards.

Metro Primary Classifications

The Metro Primary Classifications map depicts all road classifications within the state of Minnesota's trunk highway system within MNDOT's Metro district. Highway 61 is classified as a minor arterial. It is shown to connect with larger roadways, like Interstate 694, which is classified as an interregional corridor (IRC). This designation is consistent with all other planning documents.

Demographics and Trends

Populations and Households

Between 2010 and 2020, the three census tracts surrounding Highway 61 through the City of Hugo (702.04, 702.07, and 702.08) experienced a 24 percent increase in population from 12,129 residents in 2010 to 15,008 in 2020. This increase is nearly three times the increase in population Washington County experienced during the same time frame (8.8 percent). The population increase along the Highway 61 corridor accounted for approximately 14 percent of the total population increase in all of Washington County. This boom in population is expected to continue through the next few decades. By 2040, the Metropolitan Council forecasts a 53 percent increase in housing stock will be needed to keep up with the rapidly growing population in Hugo. Hugo added significantly to its housing supply in the last decade, increasing the number of housing units by 18.5 percent, and is expected to continue building housing around the Highway 61 corridor. ***Table 1*** below illustrates the recent trends in population growth.

Table 1 – City of Hugo and Washington County – Population and Households					
City of Hugo	**2000**	**2010**	**2020**	**2030**	**% Change 2000-2020**
Population	6,452	12,129	15,008	22,800	132.6%
Households	2,121	5,189	6,148	9,200	189.8%
Washington County	**2000**	**2010**	**2020**	**2030**	**% Change 2000-2020**
Population	201,130	238,136	259,072	299,130	28.8%
Households	71,496	92,374	104,014	116,210	45.5%

Source: US Census Bureau, Hugo 2040 Comprehensive Plan, Washington County 2040 Comprehensive Plan

Rapid growth, such as that seen in the area surrounding Highway 61 has implications on transportation systems. Fast growth may increase demand for roadway capacity and lead to greater density to support increased transit or bicycle/pedestrian facilities. With significant increases in the residential population, it is important to turn focus to the transportation system connecting these new residents to work, entertainment, and other daily destinations. Highway 61 is an important transportation corridor in Washington County as it is the busiest north-south corridor through the city of Hugo. In addition, the Highway 61 corridor is also influenced by its travel shed which reaches beyond the immediate study area. Further detail on this is provided in the Land Use section of this report.

Age

Like population, age distribution (***Table 2***) has the capacity to affect transportation usage and demand. The median age in Hugo is 36.4 years. This is notably younger than the median age in Washington County of 39.5 years. The Highway 61 corridor has a smaller age dependency ratio than Washington County at 63.6 in the city vs. 65.1 around the county. The age dependency ratio is the ratio of dependents—people younger than 15 or older than 64—to the working-age population—those ages 15-64. It is derived by dividing the dependent population by the working-age population. A higher age dependency ratio translates to a larger percentage of the population requiring travel assistance, either because they are still too young to drive or have aged out of driving.

About 26 percent of the population surrounding Highway 61 is under 18 and 17 percent are school-aged. A large number of children in the region is indicative of the importance of pedestrian and bicycle safety and programs such as Safe Routes to School. Approximately 13 percent of residents are over 65 years old. This cohort of residents typically shows greater demand for public transit, including dial-a-ride services. Enhancing alternative transportation choices along the Highway 61 corridor, such as expanding the existing bicycle and pedestrian network for younger residents or introducing transit options for older residents, would increase the ability of dependent populations to travel without assistance.

The largest age cohort surrounding Highway 61 in Hugo is the population under 5 years of age. This is illustrative of the rapid population growth the region has experienced in the past decade and demonstrates a need for a comprehensive transportation system that has the capacity to serve a growing percentage of children. ***Table 2*** below shows the age distribution of Highway 61 in relation to Washington County.

Table 2 – Age Distribution

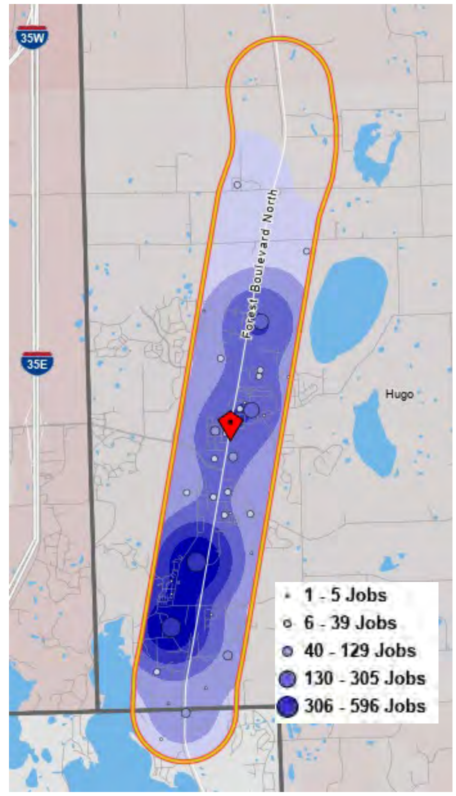
Age	Hugo	Washington County
Under 5	1,343	15,319
5-9	1,072	17,809
10-14	802	18,719
15-19	874	17,277
20-24	846	14,709
25-29	899	14,172
30-34	1,298	15,807
35-39	1,209	17,338
40-44	884	17,028
45-49	1,243	17,396
50-54	658	18,729
55-59	983	19,604
60-64	986	16,453
65-69	642	13,670
70-74	534	9,638
75-79	309	6,386
80-85	275	4,442
85 and Over	151	4,576
Median Age	**36.4**	**39.5**
% Under 18	**25.6%**	**24.5%**
% Over 65	**12.7%**	**14.9%**

Source: US Census Bureau – 2020 Census

Employment and Transportation

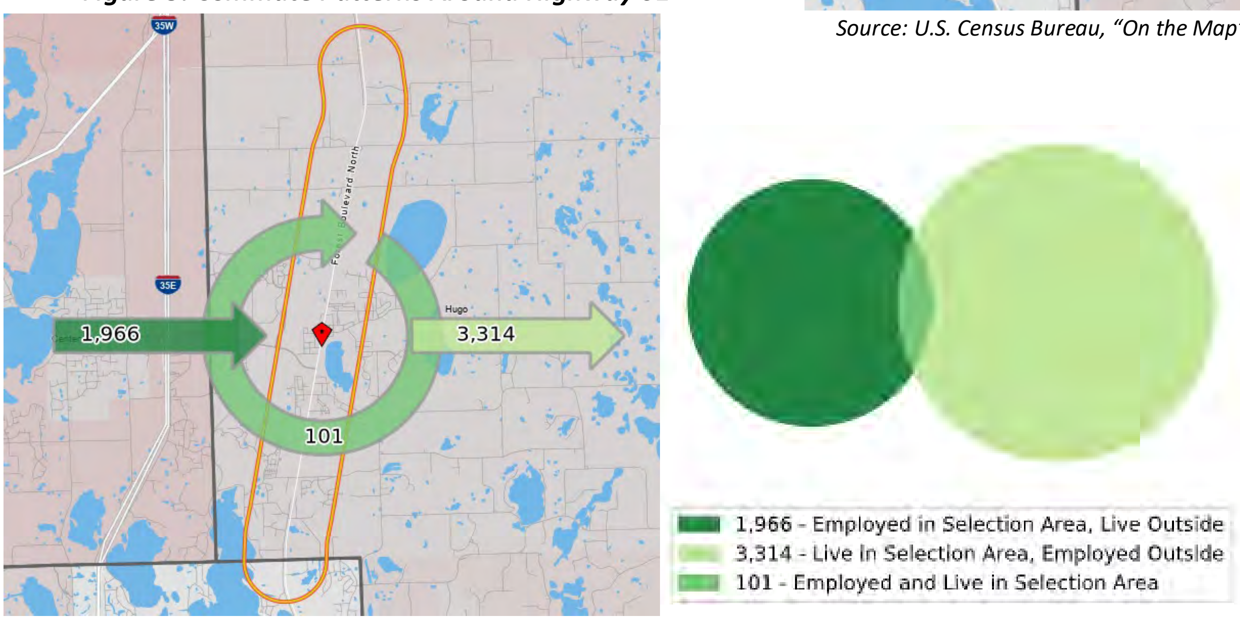
In 2019, there were approximately 2,000 jobs within a half mile of the Highway 61 visioning study area. Most of these employment opportunities are concentrated in the southern half of the study corridor (***Figure 4***). In 2019, most workers associated with the half-mile area surrounding the corridor lived within the half-mile buffer and traveled to work outside of the half-mile buffer. This is demonstrated in ***Figure 5***. The two major industries around the Highway 61 corridor are manufacturing (39 percent) and construction (18 percent). Together these industries amount to nearly 60 percent of all jobs along the corridor. A high volume of manufacturing and construction-related jobs often indicates less traffic congestion at typical peak commute times, while roadway usage remains the same. Job growth is expected to increase with the population of Hugo. While neither major industry along the corridor is likely to significantly contribute to peak hour traffic, employment growth may still put a strain on commuter routes, such as Highway 61, if local agencies do not work to increase roadway efficiency and multimodal transportation options.

Figure 4. Job Concentrations



Source: U.S. Census Bureau, "On the Map"

Figure 5. Commute Patterns Around Highway 61



Source: U.S. Census Bureau, "On the Map"

The City of Hugo is very car dependent. In the census tracts surrounding Highway 61, 90 percent of workers rely on a car to get to their place of employment, either by driving alone (85.6 percent) or carpooling (4.5 percent). Another 7.6 percent of residents in the study area work from home and less than two percent of residents take public transportation, walk, or use any other method of commuting. Over 85 percent of residents living within a half mile of the visioning study area commute less than 25 miles to their job and the median commute time is about 27 minutes; lack of multimodal transportation options compels most workers to rely on personal vehicles. Nearly half of residents are commuting to downtown St. Paul (14 percent), downtown Minneapolis (12 percent), or remaining in Hugo (8 percent) for work.

Environmental Justice Population Analysis

Executive Order 12898 (1994), Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, must be addressed if impacts result in an adverse and disproportionately high impact on minority or low-income communities. Minority and low-income populations are "readily identifiable groups...who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons...who will be similarly affected by a proposed DOT program, policy or activity" (U.S. DOT, 2012).

Environmental justice populations are minority and/or low-income populations that are meaningfully greater than those of the general population. "Meaningfully greater" for environmental justice populations is generally defined as one where the minority or low-income population is either 10 percent higher than the county average, or greater than 50 percent of the total geographic unit, or determined based on input from local officials or stakeholders (FHWA Office of Human Environment, 2012). In addition to minority and low-income populations, the EPA also uses education, language, and age demographic indicators to determine a community's potential susceptibility to environmental impacts associated with construction activities.

Racial and Ethnic Composition

Table 3 below shows the racial and ethnic composition of the census tracts surrounding Highway 61—demonstrating how the composition changed between 2010 and 2020 and comparing 2020 data with Washington County data. In 2020, most of the population around the study corridor identified as white (87 percent). This is greater than Washington County's white population (78 percent). While most of the population in Hugo identify as white, the Black, Indigenous, and People of Color (BIPOC) population grew in number and percentage between 2010 and 2020. The share of the BIPOC population increased from 8 percent to 13.2 percent. Between 2010 and 2020, the BIPOC population grew by 83 percent while the white population only grew by 12 percent.

Table 3 – Racial and Ethnic Composition

	Highway 61 – 2010	Highway 61 – 2020	Washington County – 2020
Asian	3.5%	3.3%	6.9%
Black or African American	0.8%	1.9%	5.2%
Hispanic or Latino	2.4%	3.4%	4.9%
Native American	0.3%	0.3%	0.4%
White	91.4%	86.8%	77.8%
Some Other Race	0.1%	0.5%	0.4%
Two or More Races	1.6%	3.7%	4.4%

Source: US Census Bureau – 2020 Census

Low-Income Populations

Low income is approximated by census reporting of individuals with income below 120 percent of the poverty level. Just over two percent of residents around the study area live below the poverty level. The median household income in the area is slightly less than the Minneapolis-St. Paul metropolitan area median income at $103,030 per year. Low-income residents are less likely to own or have access to a personal vehicle. Residents who do not have access to a personal vehicle have limited transportation options and would benefit from an increase in multimodal transportation options.

Disability Status

In the census tracts surrounding the Highway 61 corridor, 8.5 percent of residents have a disability and 2.25 percent are not covered by health insurance. This is slightly lower than the percentage throughout Washington County (9.3 percent). Disability status may impact a person's travel behavior, depending on the type of disability. Residents who live with a disability are more likely to rely on public transportation, like dial-a-ride services, than residents without disability status. With a lack of multimodal options, residents with disabilities are often forced to rely on their personal connections for transportation. By improving multimodal options along Highway 61, project partners can improve transportation mobility for residents with disabilities.

Linguistically Isolated Communities

Approximately 0.4 percent of the population surrounding the corridor speaks English less than "very well." This can be isolating when attempting to navigate a transportation system. The most common language spoken other than English is Spanish. Per the Washington County Department of Public Work's Title VI plan, vital documents related to this study will be translated and a notice of available translation services will be included on large public facing documents and public engagement invitations.

Vehicle Access

In the census tracts surrounding the Highway 61 corridor, less than 1 percent of households lack access to a personal vehicle and 15.1 percent of households have access to one vehicle. The same region has an average household size of 2.66 persons per household. This is slightly higher than Washington County's average household size (2.63). For residents with access to zero or one vehicle in households above the average household size, transportation options are extremely limited. Due to the lack of public transportation facilities in the region, lacking access to a personal vehicle nearly eliminates residents' ability to access employment opportunities, medical appointments, and daily needs like grocery shopping. The addition of multimodal transportation options within the study area would provide much-needed accessibility for residents with limited access to vehicles.

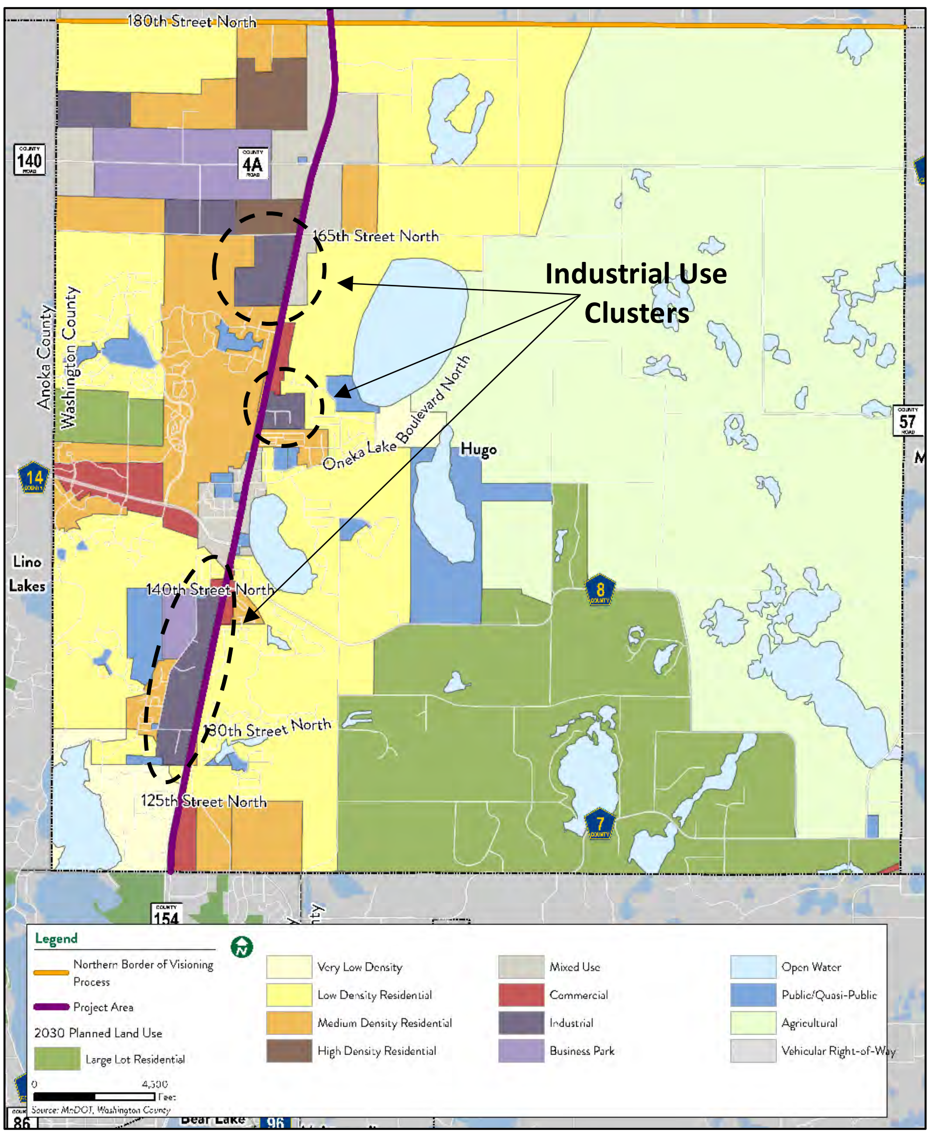
Land Use

Existing and Future Land Use

Land uses, both existing and planned, are directly linked to transportation, and must be accounted for when planning for the future of a transportation system. Travel behavior is determined by the location of where people live in relation to where they work, shop, socialize, and recreate. For example, a primarily industrial area will experience peak traffic counts during shift changes and must accommodate heavy truck movements. In contrast, a residential neighborhood will have directional traffic peaks that align with typical working hours and must accommodate far fewer heavy freight vehicles.

The Highway 61 Corridor is the site of a variety of land uses ranging from residential, industrial, agricultural, and commercial uses (***Figure 6***). As noted in the Hugo 2040 Comprehensive Plan, future uses directly along the corridor will include a continuation of industrial, growth of residential use, and

Figure 6. 2040 Future Land Use



the development of mixed-use areas in downtown Hugo. Due to the wide variety of uses along the corridor, it will be vital to balance the needs of all users in the planning process. While children commuting to and from school will have vastly different transportation needs than freight vehicles accessing/exiting manufacturing facilities, the Highway 61 corridor must accommodate them both.

Industrial Uses

A wide range of industrial businesses are located along Highway 61, generally clustered in three locations within the City of Hugo (circled above). Uses along the corridor include automotive, manufacturing, contractor operations, landscaping businesses, auto salvage yards, and recycling. Daily traffic counts are highest near these industrial clusters, demonstrating the importance of planning for freight vehicles along Highway 61.

Agricultural Uses

Protecting agricultural land is listed as a priority in the City of Hugo 2040 Comprehensive Plan. Agricultural land accounts for over forty percent of the land in Hugo, and today, the Highway 61 corridor abuts many parcels currently being used for agricultural purposes. As the City of Hugo grows in population, existing areas of job concentration will need to expand as well. With the majority of Hugo's commercial areas already along the Highway 61 corridor, the agricultural land abutting the corridor has been identified for redevelopment as a mix of residential, commercial, and industrial uses. The city plans to encourage less redevelopment from agricultural land elsewhere in the city.

Residential Uses

Low-density residential uses currently exist through the Highway 61 corridor. Over the next twenty years, the number of residential units served by Highway 61 is expected to grow in number and density. While most of the residential uses along the corridor today are within large lot single family residential (<1 unit per acre) or single-family detached residential districts (2-3 units per acre), the future land use plan for Hugo allows for residential densities of up to 10-60 units per acre in the mixed-use districts.

Mixed-Use Districts

The vision of future development in Hugo encourages commercial growth while seeking to concentrate that growth around the downtown area and the intersection of Highway 61 and 170th Street N. The City of Hugo's vision for their Downtown District, the area surrounding Highway 61 and CSAH 8, includes a mix of walkable commercial, residential, and office uses in line with the Downtown Plan & Design Guidelines (2007). This area is currently home to several commercial uses and is a priority area for growth. In preparation for this growth, the city has purchased several properties along the east side of Highway 61. There is an opportunity for small area planning for the area around the intersection of Highway 61 and 170th Street N. The land surrounding the intersection is guided for mixed-use development and is currently the site of a rodeo area, commercial and industrial uses, private residential uses, and multiple agricultural fields.

Major Traffic Generators

Major traffic generators along Highway 61 can be separated into four categories: residential, commercial, industrial, and institutional. Residential traffic generators include residential uses at a medium to high density. This includes the Good Life Senior Living facility, Encore Assisted Living and Memory Care, Gracewood Senior Living in Hugo, the Hugo Estates manufactured home park, Keystone

Place Apartments, Muller Manor Apartments, and Jane Pine Place Apartments. Several other residential neighborhoods also connect directly to Highway 61.

Commercial traffic generators are clustered within downtown Hugo and include mostly auto-related businesses, restaurants, liquor stores, medical offices, banks, and hardware/feed stores.

Major industrial traffic generators are clustered in a few locations throughout the city of Hugo. Some major industrial uses include L&S Industrial, Northstar Recycling, Tjernlund Products, Northland Pallet, JL Schwieters Construction, Xcel Energy, Como Lube & Supplies, Loadmaster Lubricants, Northstar Wiper & Industrial Supply, Top5 Technologies, Northland Pallet, Western Spring Manufacturing, Inter-Plants Sales, and Wilson Tool International.

Finally, major institutional traffic generators include North Star Elementary School, Hugo City Hall, New Creations Child Care and Learning Center, and the White Bear School District's Transition Education Center.

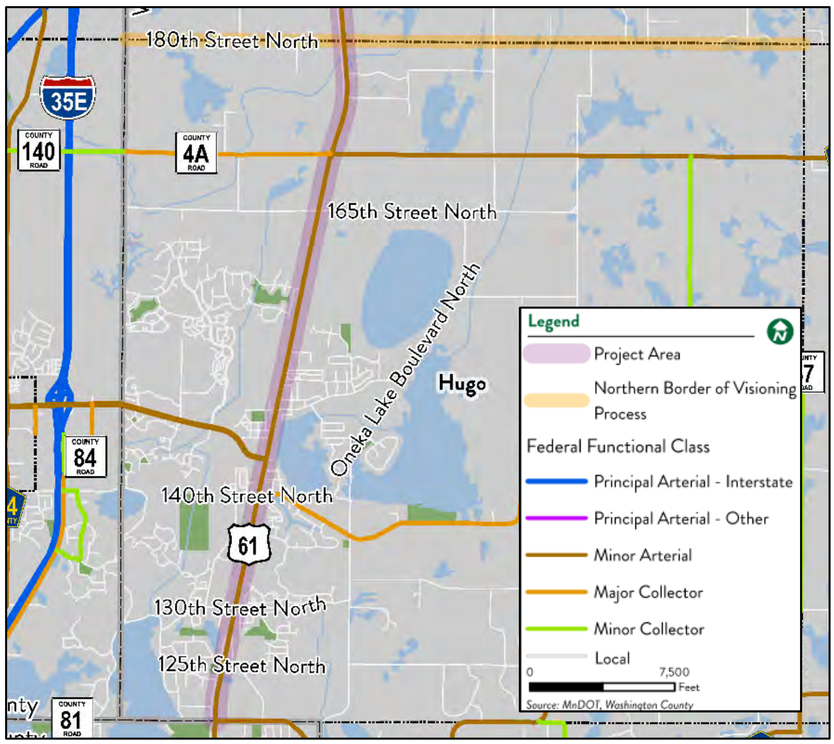
In addition to the vehicular traffic generators, there are a variety of bicycle and pedestrian generators surrounding the corridor that might draw biking or walking trips from nearby residents. The Hardwood Creek Regional Trail is a major bicycle trip generator that runs parallel to the corridor from 140th Street north through Forest Lake and connects to the Sunrise Prairie Trail in Chisago County. Near the trail corridor, there are other recreational resources including the Oneka Ridge Golf Course, Oak Shore Park, Beaver Pond Park, Clearwater Creek Preserve, Lions Volunteer Park, Oneka Lake Park, and Frog Hallow Park. The trail also provides access to Bald Eagle-Otter Lake Regional Park, just south of the Hugo border.

Transportation System Characteristics

Roadway Functional Classification

The functional classification system is used to create a roadway network that efficiently collects and distributes traffic from individual properties and neighborhoods to the state highway system. A successful system coordinates and manages mobility, roadway design, and route alignment and seeks to match current and future access and land use with the adjacent roadway's purpose, speeds, and spacing. The functional classification system comprises principal arterials, minor arterials, major and minor collectors, and local roadways. Each classification has a different function, with interstates or freeways prioritizing mobility with very strict access controls while a local road prioritizes property access over mobility, as shown in ***Figure 7***. Most travel relies on a network of roads at multiple classification levels.

Figure 7. Functional Classification



Highway 61 throughout the study area is classified as a Minor Arterial. These roads connect important locations in Hugo and areas to the north (Forest Lake) and south (White Bear Township/White Bear Lake), while augmenting the arterial system in more developed areas—carrying short to medium trips that would otherwise use principal arterials. The purpose of augmenting the principal arterial may be to reduce speeds or provide more direct access to some of the residential or business areas within the community. Generally, minor arterials provide service to over 3,000 cars per day and should be directly accessed only by principal arterials, other minor arterials, or collectors. While "A" minor arterial roadways provide more access than principal arterials, their primary function is still to provide mobility rather than access to adjacent land uses.

Highway 61 has a daily traffic count that ranges between approximately 10,000 (north of 170th Street) to over 18,000 (between Frenchman Road/CSAH 8) and 140th Street). The corridor runs parallel to Interstate 35E, a major principal arterial connecting the Minneapolis-St. Paul metropolitan area to Duluth in the north and the Des Moines metropolitan area in the south.

Access Inventory and Categories

Access points introduce conflict and friction into the traffic stream. Allowing dense, uncontrolled access spacing may result in safety and operational deficiencies for vehicles while also impacting bicycle and pedestrian comfort. Striking a balance between access and mobility is important when planning a safe and efficient roadway that serves all users.

MnDOT and Washington County both have access management guidelines that provide spacing recommendations between primary intersections, as well as recommended spacing between primary and secondary intersections. A primary intersection is the junction between two major roads, and a secondary intersection is a junction between a major road and a minor road or a local street. The primary intersections along Highway 61 within the visioning study area include the intersection at 170th Street N (CSAH 4), Frenchman Road (CSAH 8), 140th Street N (CSAH 8), and 120th Street N/N County Line Road E.

Graph 1. Access and Mobility by Functional Classification

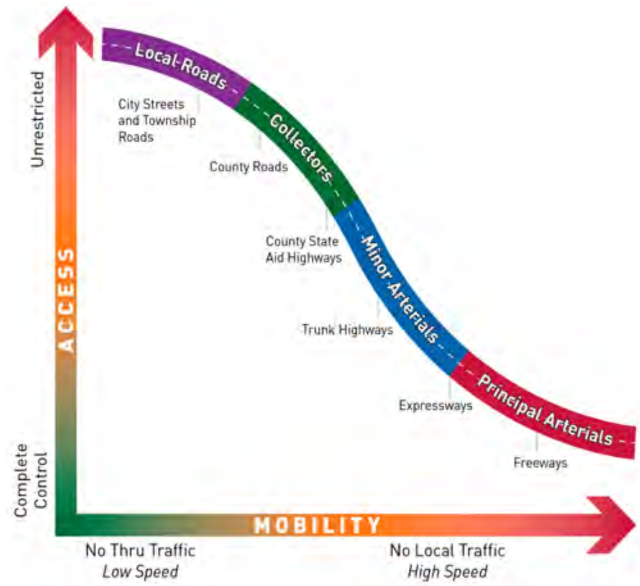
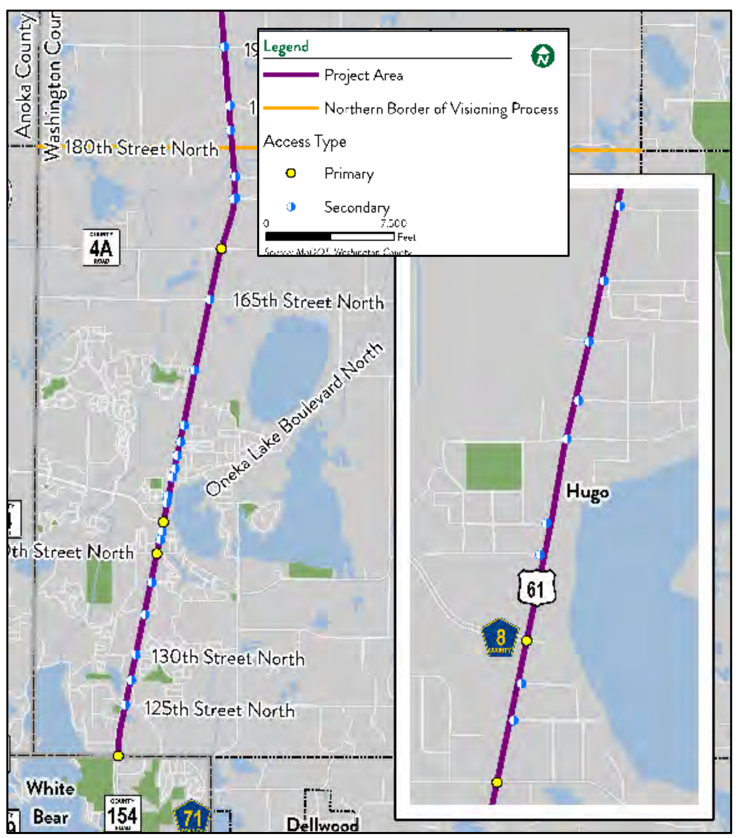


Figure 8. Access Inventory



Typical Section and Right of Way

The typical section (also known as roadway geometry) through the study area is generally a standard two-lane section with left and/or right turn lanes at key intersections. A short three lane section, with a shared center left turn lane, is present through the downtown area along Highway 61 from 140th Street N to 147th Street N/Oneka Lake Boulevard N.

The road right-of-way also varies throughout the study area. According to Washington County GIS parcel information, MnDOT owns most of the land that the highway occupies (see ***Figure 9 – Parcel Ownership*** in ***Appendix A***). However, some areas are owned by the White Bear Lake School District, the City of

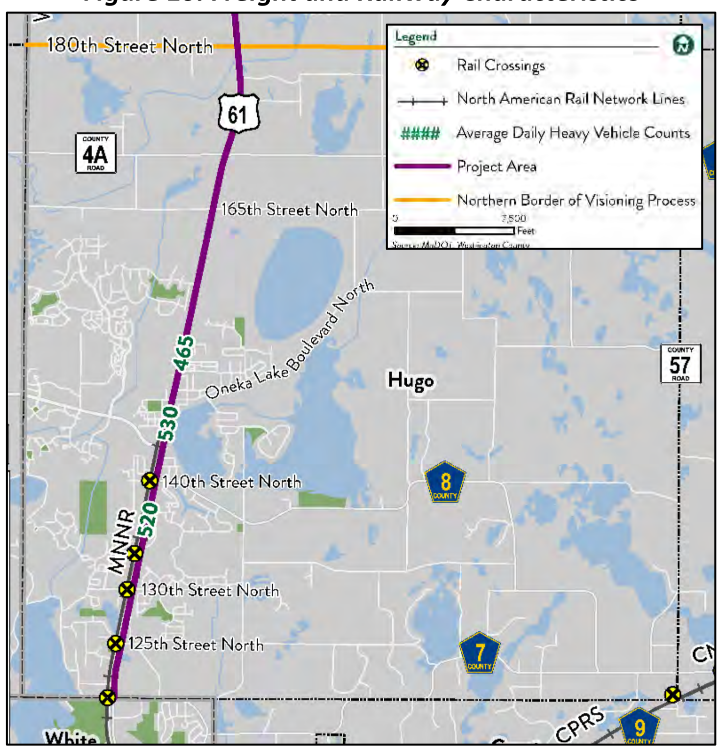
Hugo, Washington County, or fall under prescribed easements from private properties. It should also be noted that the Washington County Regional Railroad Authority (WCRRA) owns a narrow, but long parcel of land that parallels a stretch of Highway 61. This County owned land was formally owned by Burlington Northern Railway and operated as a railroad corridor. Further information on the railroad corridor is provided in the next section. The Hardwood Creek Regional Trail currently occupies this parcel from 140th Street to the northern Hugo City limit and beyond.

Freight Conditions and Commercial Railways

Highway 61 is an important transportation corridor for freight vehicles carrying agricultural and industrial products to and from Hugo and neighboring jurisdictions. Highway 61 acts as a major reliever for nearby Interstate 35E and transports between 465 and 530 freight vehicles per day. While much of the land immediately adjacent to the Highway 61 corridor has been zoned and recently developed as residential, important industrial manufacturers like Xcel Energy, Northstar Recycling, Northland Pallet Inc, and the other manufacturing companies south of 140th Street N in Hugo rely on the roadway to transport goods into and out of the city.

An active railroad corridor runs parallel to Highway 61 from the southern border of Hugo to 140th Street. The Minnesota Commercial Railway currently operates along the rail corridor and provides rail access to the Hugo industrial park. The rail line once ran farther north through the City of Forest Lake, into Chisago City and beyond. Today, the railway corridor has been converted to the Hardwood Creek Regional Trail beginning at 140th Street. The corridor has been identified as a future transit corridor with the Hardwood Creek Regional Trail as an interim use. Since the railway corridor is not used for transit purposes, the Washington County Regional Rail Authority (WCRRA) allows for its interim uses by the Washington County Parks Division. As shown in ***Figure 10***, there are five remaining railroad crossings near the Highway 61 corridor at North County Road Line E, 125th Avenue, 130th Street N, a private access point into an industrial facility, and 140th Street N.

Figure 10. Freight and Railway Characteristics



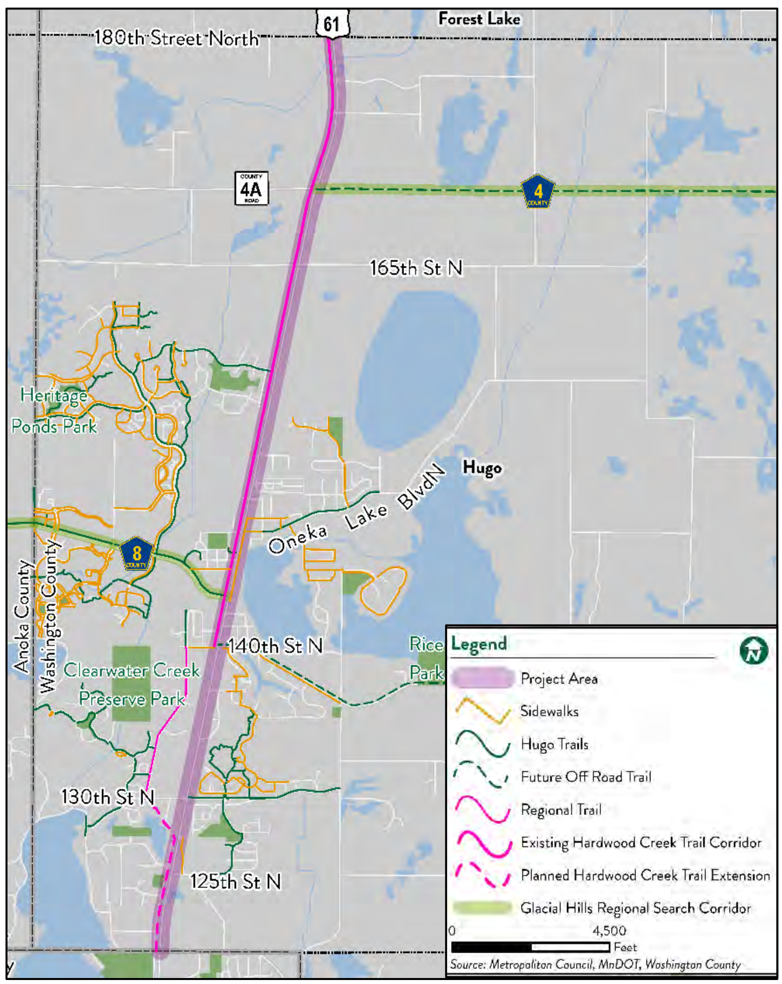
Active Transportation Facilities

Enhancing the ability of people to walk, bike, and roll involves providing adequate infrastructure and linking design, streetscapes, and land use to encourage non-motorized trips. Designing roadways to accommodate all types of users is commonly termed "complete streets" which come with many benefits:

- Streets designed with sidewalks, traffic-calming measures, and treatments for travelers with disabilities improve pedestrian safety. Research has shown that sidewalks alone reduce vehicle-pedestrian crashes by 88 percent.
- Multiple studies have found a direct correlation between the availability of walking and biking options and obesity rates. The Centers for Disease Control and Prevention recently named the adoption of complete streets policies as a recommended strategy to prevent obesity.
- Complete streets offer inexpensive transportation alternatives to roadways. A recent study found that most families spend far more on transportation than food.
- Research has found that people who live in walkable communities are more likely to be socially engaged and trusting than residents living in less walkable communities.

Figure 11 illustrates the existing and proposed bicycle and pedestrian facilities around the Highway 61 corridor. Highway 61 runs alongside the Hardwood Creek Regional Trail – a 9.5-mile multiple-use trail on a former Burlington Northern Railroad grade which is level and wheelchair accessible. The trail travels through Hugo and Forest Lake, ending at 140th Street N. The Hardwood Creek Regional Trail Master Plan shows the trail connecting to the Bruce Vento Regional Trail in south White Bear Lake, providing access to many other metro area trails. The trail also connects to the Sunrise Prairie Trail in Chisago County in the north and the Glacial Hills Regional Trail search corridor, which would ultimately provide trail access to North Branch.

Figure 11. Pedestrian and Bicycle Facilities



The Hardwood Creek Regional Trail consists of two parallel trails, with one being paved and the other being mown turf. The paved trail, which is not groomed in the winter, is open to biking, hiking, in-line skating, snowshoeing, and cross-country skiing. The turf trail is open to horseback riding in the summer and snowmobiling (without studs/metal traction devices) in the winter. Hardwood Creek Trail has received several upgrades since 2015, including resurfacing, the addition of wayfinding signage and maps, and new kiosks and benches that were installed at four locations along the trail.

Pedestrian facilities, such as sidewalks, are not present throughout most of the study area. There are marked crosswalks at primary intersections along the corridor (County Line Road, 130th Street N, 140th

Street N, Frenchman Road, 147th Street N, 170th Street N, Headwaters Parkway, and CSAH 50) and a short sidewalk that runs along Highway 61 from Frenchman Road (CSAH 8) to 148th Street N in downtown Hugo. Crossing Highway 61 likely present challenges for older and younger pedestrians due to high vehicle speeds along the corridor and some intersections not having pedestrian ramps on all legs of the intersection.

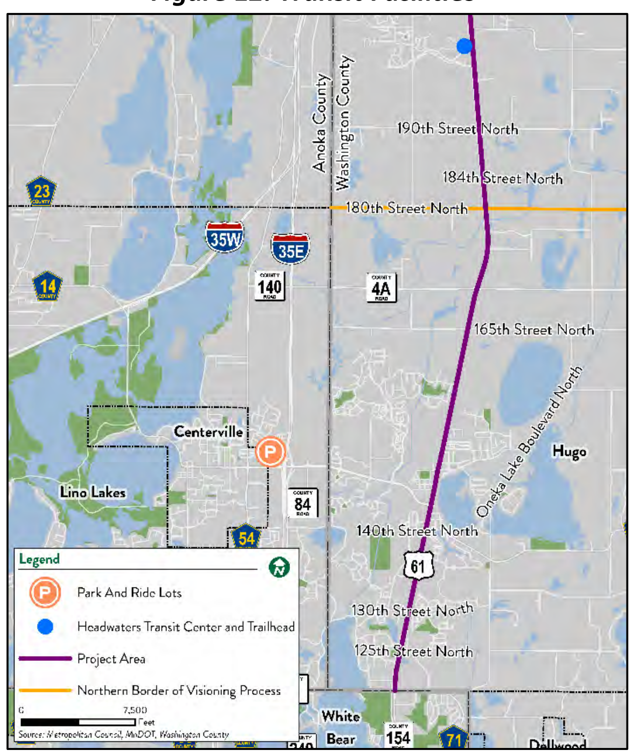
Transit Facilities

The City of Hugo is served by Metro Transit, a public transportation service of the Metropolitan Council. Currently, Metro Transit does not operate any fixed-route bus services along the Highway 61 corridor or within Hugo. Instead, the communities surrounding the Highway 61 corridor may utilize Transit Link, a Metro Transit service, to connect to fixed-route bus lines. Transit Link is a c a shared-ride service and must be reserved in advance. Trips may begin on Transit Link and connect to regular route buses at a convenient transit hub or begin on regular route transit and transfer to Transit Link.

Highway 61 through Washington County is part of the Metropolitan Council/Metro Transit and MnDOT-identified Rush Line Corridor. The Rush Line Corridor is an 80-mile transit corridor extending from Downtown St. Paul in the south to Hinkley in the north. The corridor follows Interstate 35E and Highway 61. Based on findings from a 2009 alternatives analysis, the project team suggested Bus Rapid Transit (BRT) along the corridor through Hugo and Forest Lake.

In 2017, the Metropolitan Council transitioned the Rush Line Corridor project into the future Metro Purple Line, a BRT line that would connect downtown St. Paul to White Bear Lake via Robert Street, Phalen Boulevard, Ramsey County Regional Railroad Authority right-of-way, Highway 61. This plan recommends further exploration of a connector bus service with feeder bus service along Highway 61 to Forest Lake through the City of Hugo. The Metropolitan Council's current Transportation Policy Plan does not show any transitway investments planned for the Highway 61 corridor through Hugo and Forest Lake in the current revenue scenario. Further, the Metropolitan Council has reopened the alignment alternatives analysis for the Purple Line that does not include an extension into downtown White Bear Lake.

Figure 12. Transit Facilities



The Headwaters Transit Center and Trailhead is located along the Highway 61 corridor, near Headwaters Parkway in Forest Lake. Metro Transit Routes 288 and 275 previously served the transit center, connecting residents to downtown Minneapolis and downtown St. Paul. Neither route currently exists. ***Figure 12*** demonstrates the location of the Headwaters Transit Center and Trailhead as well as a nearby Metro Transit Park & Ride Lot. The Park & Ride lot is not currently serviced by a fixed-bus route.

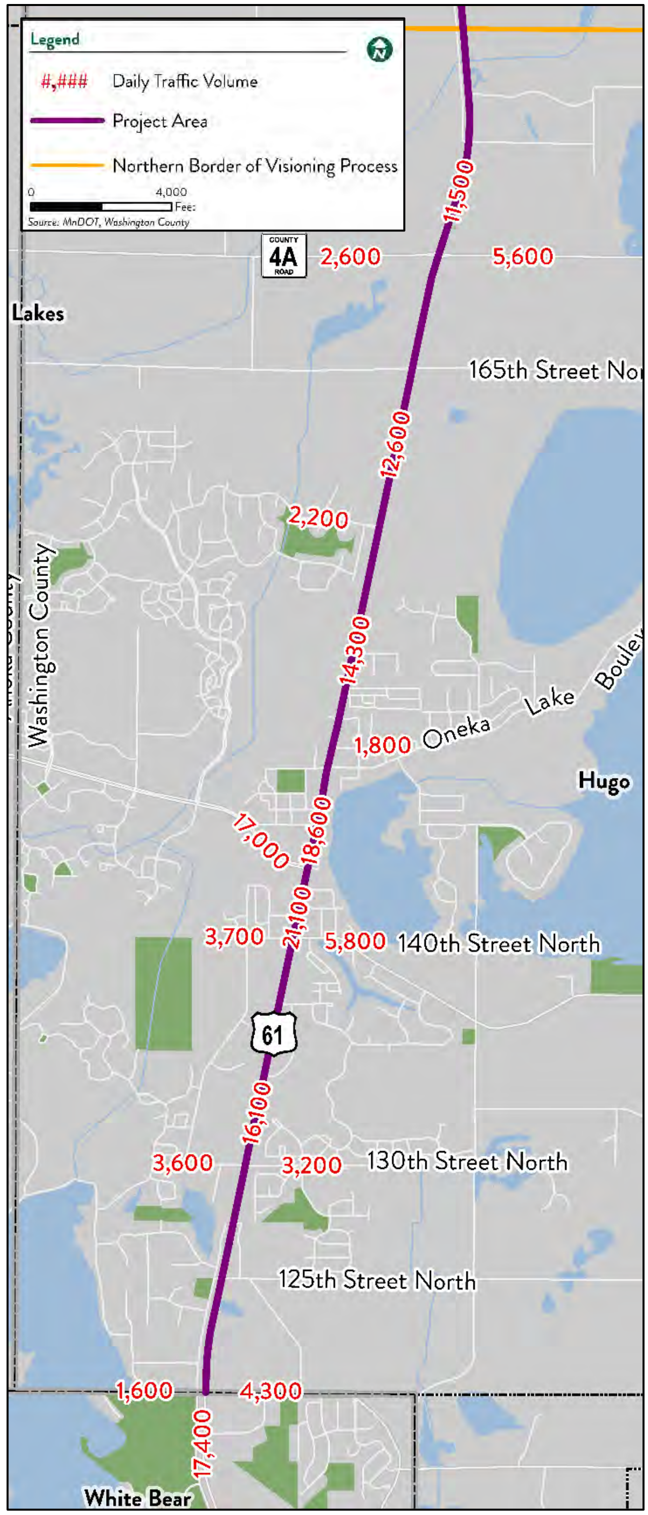
Existing Traffic Conditions

Turning Movement Counts

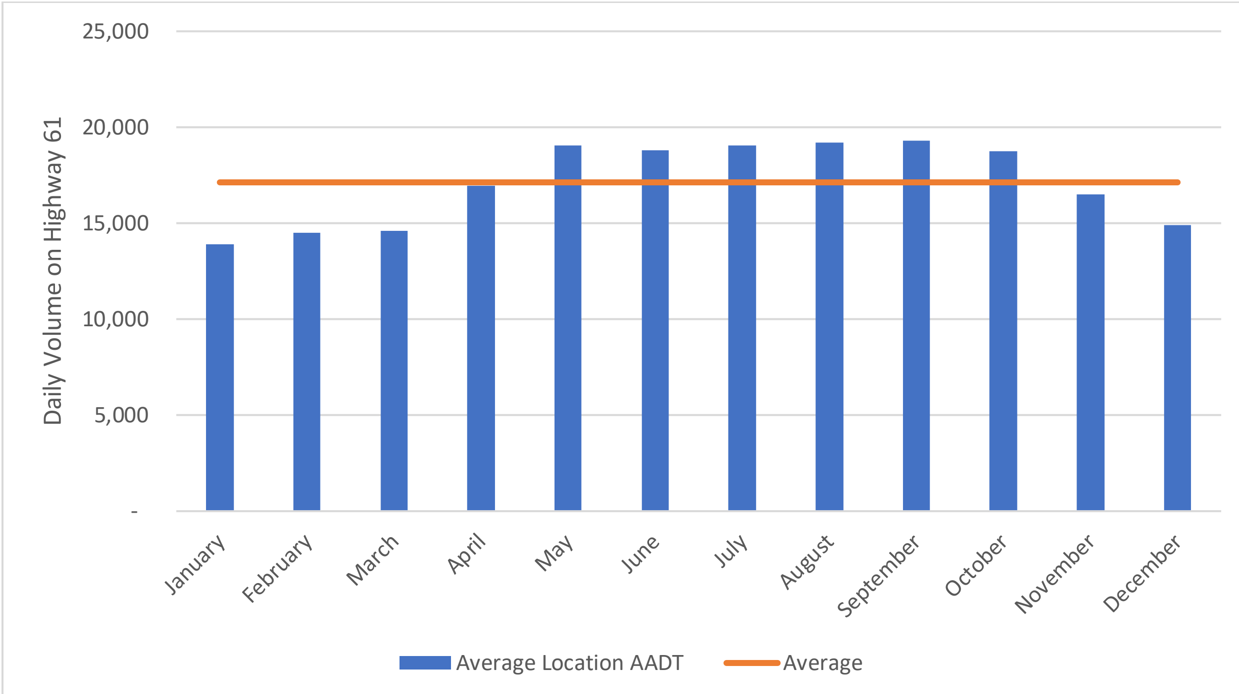
Turning movement count data was collected at all project intersections in June 2022 when school was in session except the intersections of Highway 61 at 152nd Street N, 147th Street N, and Frenchman Road. Those three intersections were collected in January 2023 (also when school was in session) to account for the new school, North Star Elementary School which opened in the Fall of 2022, and potential changes in traffic patterns at 147th Street N and Frenchman Road. The turning movement count data included vehicular traffic, pedestrians and bicycles using the intersection crosswalks, and in road bicyclists. ***Figures 13-18*** in ***Appendix A*** show the counts by intersection of each traffic mode.

The counts from January 2023 were found to be significantly lower than the counts from June 2022. A StreetLight analysis was completed to compare traffic volumes by month. Volumes in 2019 were compared along Highway 61 at Frenchman Road. The results of the StreetLight analysis are shown in ***Figure 19 and Graph 2.***

Figure 19. Traffic Volumes



Graph 2. Average Daily 2019 Volumes by Month on Highway 61 at Frenchman Road



According to StreetLight, volumes in June are approximately 10% higher than the average daily volume throughout the year. Comparing June to January, volumes in June are approximately 35% higher than in January. This helps explain the significantly lower count data when comparing the field collected January counts to the June counts. The StreetLight analysis also shows how volumes in June are in line with volumes in May through October and how volumes during May through October are higher than in November through March.

For the operational analysis, the January 2023 counts were increased proportionally to match the June 2022 counts so that volumes were consistent along the corridor.

Traffic Operations

An existing level of service (LOS) analysis of the peak hours was completed in Synchro/SimTraffic Version 11. The LOS results are based on the average delay per vehicle as calculated by the Highway Capacity Manual (HCM) 6th Edition, which defines the level of service, based on control delay. Control delay is the delay experienced by vehicles slowing down as they are approaching the intersection, the wait time at the intersection, and the time for the vehicle to speed up through the intersection and enter into the traffic stream. The average intersection control delay is a volume weighted average of delay experienced by all motorists entering the intersection on all intersection approaches. Intersections and each intersection approach are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS A through D is generally perceived to be acceptable to drivers. LOS E indicates that an intersection is operating at, or very near, its capacity and that drivers experience considerable delays. LOS F indicates an intersection where demand exceeds capacity and drivers experience substantial delays.

The existing AM and PM peak hour traffic volumes were analyzed with the current geometry and signal timing. Operational results are summarized in ***Table 4***.

Table 4. Existing (2022) Operational Analysis

Intersection	Peak Hour	Intersection (Delay[1] - LOS)	Approach (Delay[1] - LOS)			
			EB	WB	NB	SB
TH 61 at Forest Rd/175th St N	AM	4 - A	5 - A	18 - C	2 - A	5 - A
Side Street Stop Controlled	PM	3 - A	13 - B	14 - B	4 - A	4 - A
TH 61 at 170th St N	AM	7 - A	6 - A	7 - A	5 - A	7 - A
Single Lane Roundabout	PM	75 - F	7 - A	16 - C	80 - F	7 - A
TH 61 at 165th St N	AM	3 - A	5 - A	8 - A	5 - A	3 - A
Side Street Stop Controlled	PM	12 - B	48 - E	55 - F	13 - B	5 - A
TH 61 at 159th St N	AM	6 - A	6 - A	-	5 - A	7 - A
Single Lane Roundabout	PM	18 - C	5 - A	-	24 - C	6 - A
TH 61 at 152nd St N	AM	2 - A	4 - A	111 - F	2 - A	3 - A
Signalized	PM	4 - A	83 - F	70 - E	5 - A	2 - A
TH 61 at 150th St N	AM	2 - A	7 - A	7 - A	2 - A	2 - A
Side Street Stop Controlled	PM	4 - A	9 - A	-	5 - A	2 - A
TH 61 at 148th St N	AM	3 - A	-	17 - C	2 - A	3 - A
Side Street Stop Controlled	PM	8 - A	-	64 - F	4 - A	8 - A
TH 61 at 147th St N	AM	17 - B	31 - C	58 - E	4 - A	6 - A
Signalized	PM	17 - B	42 - D	75 - E	11 - B	11 - B
TH 61 at 146th St N	AM	2 - A	6 - A	-	1 - A	2 - A
Side Street Stop Controlled	PM	7 - A	31 - D	71 - F	2 - A	18 - C
TH 61 at 145th St N	AM	1 - A	6 - A	-	3 - A	1 - A
Side Street Stop Controlled	PM	6 - A	39 - E	-	4 - A	8 - A
TH 61 at Frenchman Rd/Mueller Dr	AM	22 - C	39 - D	64 - E	18 - B	13 - B
Signalized	PM	72 - E	117 - F	52 - D	40 - D	68 - E
TH 61 at 141st St N	AM	2 - A	-	7 - A	2 - A	3 - A
Side Street Stop Controlled	PM	22 - C	-	38 - E	6 - A	44 - E
TH 61 at 140th St N	AM	12 - B	48 - D	27 - C	6 - A	6 - A
Signalized	PM	38 - D	94 - F	41 - D	36 - D	26 - C
TH 61 at 137th St N	AM	3 - A	-	8 - A	2 - A	4 - A
Side Street Stop Controlled	PM	4 - A	-	15 - C	4 - A	5 - A
TH 61 at 134th St N	AM	2 - A	-	10 - B	3 - A	3 - A
Side Street Stop Controlled	PM	4 - A	-	14 - B	4 - A	3 - A
TH 61 at 130th St N	AM	14 - B	25 - C	48 - D	8 - A	9 - A
Signalized	PM	13 - B	30 - C	46 - D	9 - A	10 - B
TH 61 at 125th St N	AM	6 - A	14 - B	19 - C	4 - A	7 - A
Side Street Stop Controlled	PM	9 - A	27 - D	53 - F	9 - A	6 - A
TH 61 at 120th St N	AM	23 - C	39 - D	55 - E	14 - B	19 - B
Signalized	PM	30 - C	41 - D	57 - E	30 - C	22 - C

1. Delay in seconds per vehicle

Existing AM Peak Hour

All intersections operate overall with LOS C or better during the AM peak hour.

The following intersections have approaches that operate with LOS E:

- 147th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS F:

- 152nd St N at Highway 61 (westbound approach)

Existing PM Peak Hour

All intersections operate overall with LOS D or better during the PM peak hour except the signal at Frenchman Rd at Highway 61 which operates with LOS E and the roundabout at 170th St N and Highway 61 which operates with LOS F. The roundabout shows failing LOS due to backups on the northbound approach. Video footage was reviewed from when the volume data was collected in June 2022. The video footage shows the northbound approach backing up to about halfway between the intersections of 170th St N and 165th St N. Although, the operational analysis shows the roundabout operates with LOS F, the queue is a moving queue at a roundabout, not a stopped queue like at a signalized intersection, so people likely perceive this as more acceptable of a delay as they are constantly moving. Additionally, since the volume analysis shows that volumes are highest between May and October, it is likely longer delays and queuing are only issues during these months.

The following intersections have approaches that operate with LOS E:

- 165th St N at Highway 61 (eastbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 147th St N at Highway 61 (westbound approach)
- 145th St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (southbound approach)
- 141st St N at Highway 61 (westbound and southbound approaches)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS F:

- 170th St N at Highway 61 (northbound approach)
- 165th St N at Highway 61 (westbound approach)
- 152nd St N at Highway 61 (eastbound approach)
- 148th St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (eastbound approach)
- 140th St N at Highway 61 (eastbound approach)
- 125th St N at Highway 61 (westbound approach)

Several of the approaches that operate with LOS E or F are signalized intersections. The cycle length of the signals in the project area is 160 seconds during both peak hours with most of the time for the mainline Highway 61 phases. Because of this, the side street delay is longer. The full operational results showing the individual movement delay and queue results are shown in ***Appendix B**.*

Traffic Safety and Crash History

Fatal Crash Analysis

A ten-year crash analysis (2013-2022) was completed for fatal crashes throughout the project area. Three fatal crashes occurred along Highway 61 within the project limits in the last ten years. Two of the fatal crashes occurred at the intersection of 159th St N at Highway 61 and the other fatal crash occurred along Highway 61 south of 130th St N. The intersection of 159th St N at Highway 61 is proposed to be reconstructed this year to a single-lane roundabout. More details on the crashes are listed below:

159th St N at Highway 61:

- In June of 2015 there was a head on crash involving northbound and southbound vehicles along Highway 61. The weather was not listed as a factor in the crash.
- In September of 2021 there was a rear end crash involving two northbound vehicles along Highway 61. One vehicle was stopped waiting to turn left onto 159th St N which was struck by the second vehicle. There is a bypass lane at this location that was not used. The weather was not listed as a factor in the crash.

Highway 61 south of 130th St N:

- In January 2015 there was a head on crash involving northbound and southbound vehicles along Highway 61. The weather was listed as a factor for this crash as temperatures were sub-zero and there were areas of glare ice on Highway 61.

Pedestrian and Bicycle Crash Analysis

A ten-year crash analysis (2013-2022) was also completed for pedestrian and bicycle crashes throughout the project area. There were two crashes involving a pedestrian and five crashes involving a bicycle in the last ten years.

Pedestrian Crashes:

- In January 2018 an officer was hit when on the scene of a vehicle-to-vehicle crash along Highway 61 just south of 130th St N. The crash resulted in possible injuries.
- In October 2018 a pedestrian was hit while crossing the road midblock near 145th St N. The crash resulted in minor injuries.

Bicycle Crashes:

- In May 2013 and June 2016 vehicle-bicyclist crashes occurred at the intersection of 159th St N and Highway 61. Both crashes noted that the bicyclists struck the side of vehicles waiting to turn onto Highway 61 from 159th St N. Both crashes resulted in minor injuries.
- In June 2019 a bicyclist was hit by a northbound left turning vehicle while crossing the west leg of the intersection at Frenchman Rd and Highway 61. The crash resulted in minor injuries.
- In June 2013 a bicyclist was hit by a southbound vehicle along Highway 61 that was noted to be swerving in and out of the travel lane. The crash occurred near 130th St N. The crash resulted in minor injuries.
- In August 2022 a bicyclist was hit by a vehicle turning from eastbound 130th St N onto Highway 61. The bicyclist was traveling along southbound Highway 61 on the shoulder. The eastbound right turning vehicle failed to yield to the cyclist. The crash resulted in minor injuries.

Intersection Crash Analysis

A five-year (2017-2021) crash analysis was completed for the intersections throughout the project area. Crash data was pulled from MnCMAT2. MnDOT uses a comparison of the crash rate and the critical rate when determining if there is a safety issue at an intersection. The crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside of the expected, normal range. The critical index reports the magnitude of this difference. A critical index of less than one indicates that the intersection is operating within the normal range and a critical index of greater than one indicates that the intersection is operating outside the normal range. ***Table 5*** provides a crash summary for each intersection.

Table 5. Intersection Crash Rate Summary

Intersection	Total Crashes	Observed Intersection Crash Rate	Statewide Average Crash Rate	Critical Index
175th St N at Highway 61	2	0.096	0.128	0.27
170th St N at Highway 61	13	0.522	0.942	0.35
165th St N at Highway 61	1	0.052	0.128	0.14
159th St N at Highway 61	10	0.501	0.128	1.39
152nd St N at Highway 61	0	0	0.508	0
150th St N at Highway 61	3	0.11	0.128	0.34
148th St N at Highway 61	1	0.035	0.128	0.11
147th St N at Highway 61	4	0.166	0.508	0.18
146th St N at Highway 61	0	0	0.128	0
145th St N at Highway 61	1	0.038	0.128	0.12
Frenchman Rd at Highway 61	41	0.916	0.508	1.16
141st St N at Highway 61	2	0.104	0.128	0.29
140th St N at Highway 61	13	0.363	0.508	0.44
137th St N at Highway 61	1	0.033	0.128	0.11
134th St N at Highway 61	1	0.035	0.128	0.11
130th St N at Highway 61	7	0.227	0.508	0.27
125th St N at Highway 61	4	0.113	0.128	0.38
120th St N at Highway 61	13	0.414	0.128	1.34

Table 5 shows that the intersections of 159th St N, Frenchman Rd, and 120th St N at Highway 61 have critical indices greater than one indicating that the intersections operate outside the expected, normal range. These three intersections were further analyzed to understand the crash trends.

159th Street N and Highway 61

The breakdown of crash severity at the intersection of 159th St N and Highway 61 is shown in ***Table 6*** and the crash type breakdown is shown in ***Table 7***.

Table 6. Crash Severity - 159th St N at Highway 61

Crash Severity	Frequency
Fatal	1
Serious Injury	0
Minor Injury	0
Possible Injury	4
Property Damage Only	5

Table 7. Crash Type - 159th St N at Highway 61

Crash Type	Frequency
Rear End	7
Right Angle	1
Sideswipe Same Direction	1
Other	1

There were ten crashes between 2017 and 2021 at the intersection of 159th St N and Highway 61. Of the ten crashes, there was one fatal crash, four possible injury crashes, and five property damage only crashes. Most of the crashes were rear end crashes which accounted for seven of the ten crashes. There was also one right angle crash, one sideswipe same direction crash, and one crash type listed as other. The other crash involved two vehicles along southbound Highway 61. One of the vehicles made a U-turn from the shoulder and hit the other vehicle.

Frenchman Road and Highway 61

The breakdown of crash severity at the intersection of Frenchman Rd and Highway 61 is shown in ***Table 8*** and the crash type breakdown is shown in ***Table 9***.

Table 8. Crash Severity – Frenchman Rd at Highway 61

Crash Severity	Frequency
Fatal	0
Serious Injury	1
Minor Injury	3
Possible Injury	6
Property Damage Only	31

Table 9. Crash Type - Frenchman Rd at Highway 61

Crash Type	Frequency
Rear End	23
Left Turn	5
Head On	4
Sideswipe Same Direction	4
Right Angle	2
Single Vehicle Run off Road	1
Other	1
Bicycle	1

There were 41 crashes between 2017 and 2021 at the intersection of Frenchman Rd and Highway 61. Of the 41 crashes, there was one serious injury crash, three minor injury crashes, six possible injury crashes, and 31 property damage only crashes. Most of the crashes were rear end crashes which accounted for 23 of the 41 crashes. There were also five left turn crashes, four head on crashes, four sideswipe same direction crashes, two right angle crashes, one crash involving a bicyclist, one single vehicle ran off road crash, and one crash type listed as other. The other crash involved a vehicle waiting to make a northbound left onto Frenchman Blvd that had crept out into the intersection but was unable to make the turn before the light turned red. The vehicle then backed up to clear the intersection and struck the vehicle in the turn lane behind them.

120th Street N and Highway 61

The breakdown of crash severity at the intersection of 120th St N and Highway 61 is shown in ***Table 10*** and the crash type breakdown is shown in ***Table 11***.

Table 10. Crash Severity - 120th St N at Highway 61

Crash Severity	Frequency
Fatal	0
Serious Injury	0
Minor Injury	1
Possible Injury	3
Property Damage Only	9

Table 11. Crash Type - 120th St N at Highway 61

Crash Type	Frequency
Rear End	10
Single Vehicle Run Off Road	2
Right Angle	1

There were 13 crashes between 2017 and 2021 at the intersection of 120th St N and Highway 61. Of the 13 crashes, there was one minor injury crash, three possible injury crashes, and nine property damage only crashes. Most of the crashes were rear end crashes which accounted for 10 of the 13 crashes. There were also two single-vehicle run-off road crashes and one right angle crash.

Segment Crash Analysis

A five-year (2017-2021) segment crash analysis was also completed for the entire project corridor. The segment crash analysis was completed with and without crashes at the intersections included. ***Table 12*** summarizes the key crash findings along the segment.

Figure 20 (included in ***Appendix A***) summarizes the crash density of the corridor. This indicates the intersection of Frenchman Rd at Highway 61 stands out as a crash hot spot along the corridor.

Figure 20. Crash Density

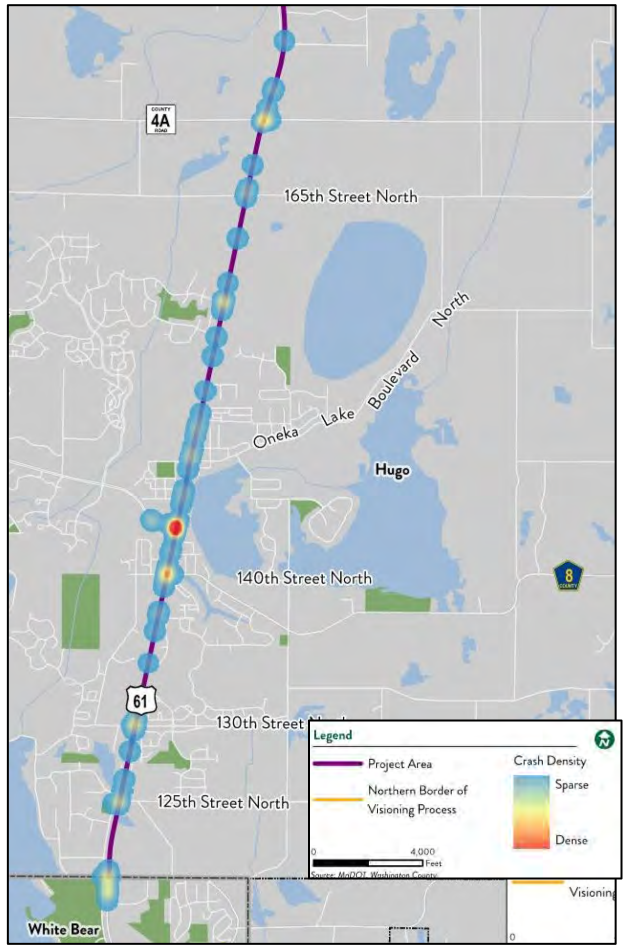


Table 12. Segment Crash Rate Summary

Option	Total Crashes	Observed Intersection Crash Rate	Statewide Average Crash Rate	Critical Index
Segment Crash Analysis with Intersection Crashes	148	1.204	1.305	0.77
Segment Crash Analysis without Intersection Crashes	32	0.26	0.477	0.41

With intersection crashes included, there were a total of 148 crashes within the project area. One of the crashes resulted in a fatality, one resulted in serious injury, fourteen resulted in minor injury, 35 resulted in possible injury, and 97 resulted in property damage only. The most common crash type was rear end crashes accounting for 89 of the 148 crashes. The next most common crash types were single vehicle run off road crashes and right-angle crashes with 12 crashes each.

Without the intersection crashes included, there were a total of 32 crashes within the project area. Four of the crashes resulted in minor injury, 11 resulted in possible injury, and 17 resulted in property damage only. Rear end crashes were also the most common, accounting for 18 of the 32 crashes. ***Figure 21*** (included in ***Appendix A***) summarizes the crash analysis of the corridor.

Figure 21. Crash History

Environmental Screening

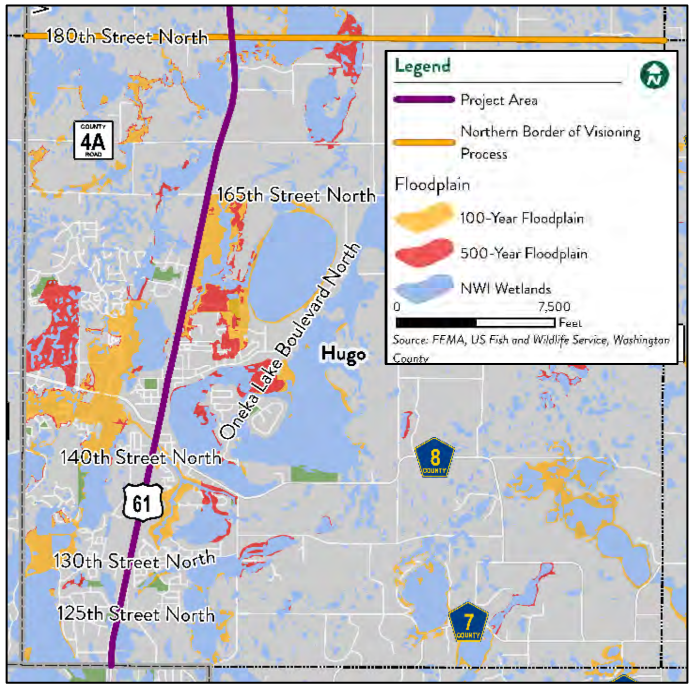
Topography and Landforms

The study area is generally flat with slightly rolling topography. No significant landforms or features are present within the study area. There are no known sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst features present within or near the project limits that would impact future construction activities.

Surface Water Resources

Surface water resources generally include lakes, rivers, streams, and wetlands. These resources are often protected by local, state, and federal laws, including Executive Order 11990, Protection of Wetlands; Sections 401 and 404 of the Clean Water Act (US Army Corps of Engineers [USACE]); Minnesota Wetland Conservation Act (local government unit); the Shoreland Development section under Minnesota Statute 103F; Minnesota Statute 103G – Waters of the State, pertaining to public waters and public waters wetlands (MnDNR); and local watershed district rules.

Figure 22. Wetlands and 100-Year Floodplains



The corridor is located within the Rice Creek Watershed. Surface water resources were identified from the National Wetlands Inventory, which shows several water resources exist adjacent to and near the Highway 61 corridor ***(Figure 22)***. Some of the major water features in the area include Bald Eagle Lake, Egg Lake, Oneka Lake, Clear Lake, and Forest Lake. There are also a few streams/ditches that cross under Highway 61, as well as many designated wetlands.

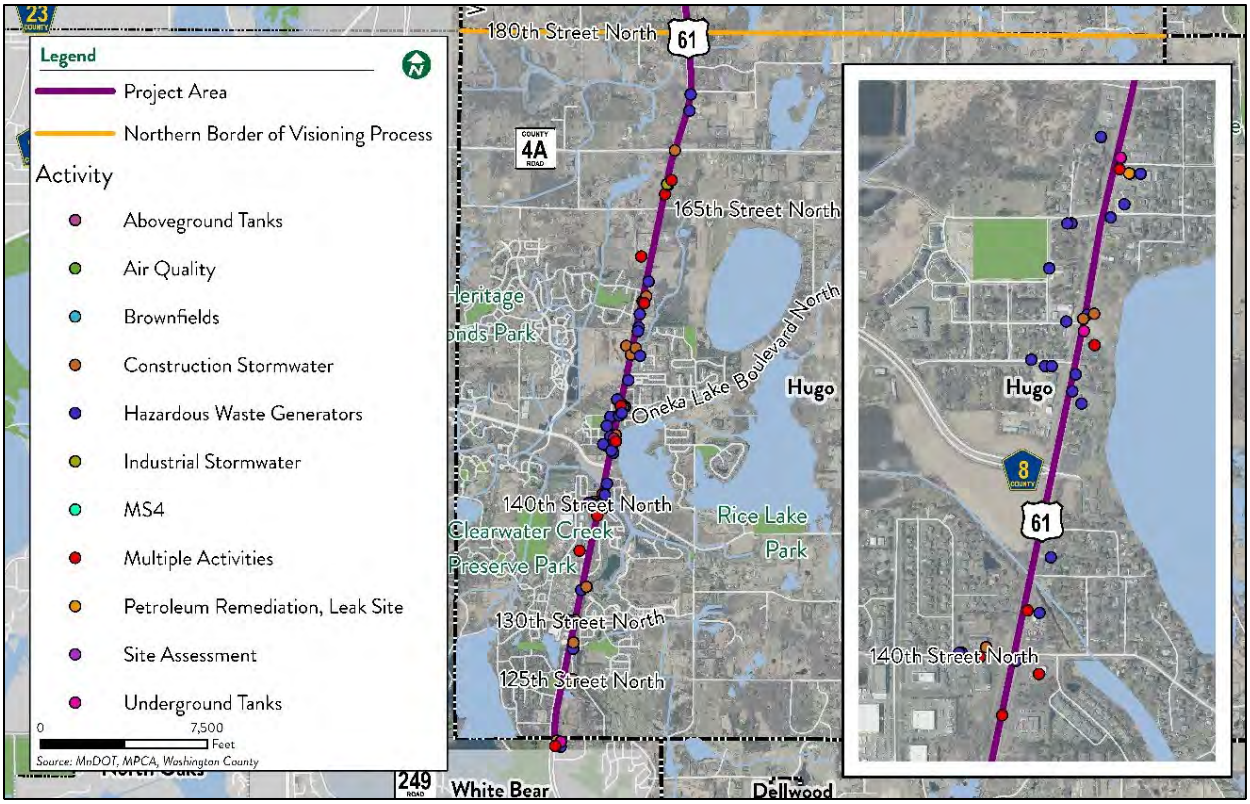
As part of future transportation improvements, a field aquatic resources delineation should be completed. Impacts to any of the identified surface water resources may require permits pursuant to the regulations above. In general, impacts to wetlands and other protected water resources must be avoided, minimized, and mitigated in sequence. Increased impervious surface area may necessitate the implementation of stormwater handling and treatment measures. Best management practices during construction activities to minimize erosion and sedimentation are also typically required.

Hazardous Materials and Potentially Contaminated Sites

The presence of hazardous materials and/or potentially contaminated properties (defined as properties where soil and/or groundwater is impacted with pollutants, contaminants, or hazardous wastes) is a concern due to the potential liabilities associated with ownership of such properties, potential cleanup costs, and safety concerns associated with construction personnel encountering unsuspected wastes or contaminated soil or groundwater. As part of future construction activities, contaminated materials encountered must be properly handled and treated in accordance with state and federal regulations. Improper handling of contaminated materials can worsen their impact on the environment. Contaminated materials also cause adverse impacts on highway projects by increasing construction costs and causing construction delays, which also can increase project costs.

Potentially contaminated site data was reviewed from the MPCA's "What's in My Neighborhood" dataset. There are 76 potentially contaminated sites in the study area ***Figure 23***.

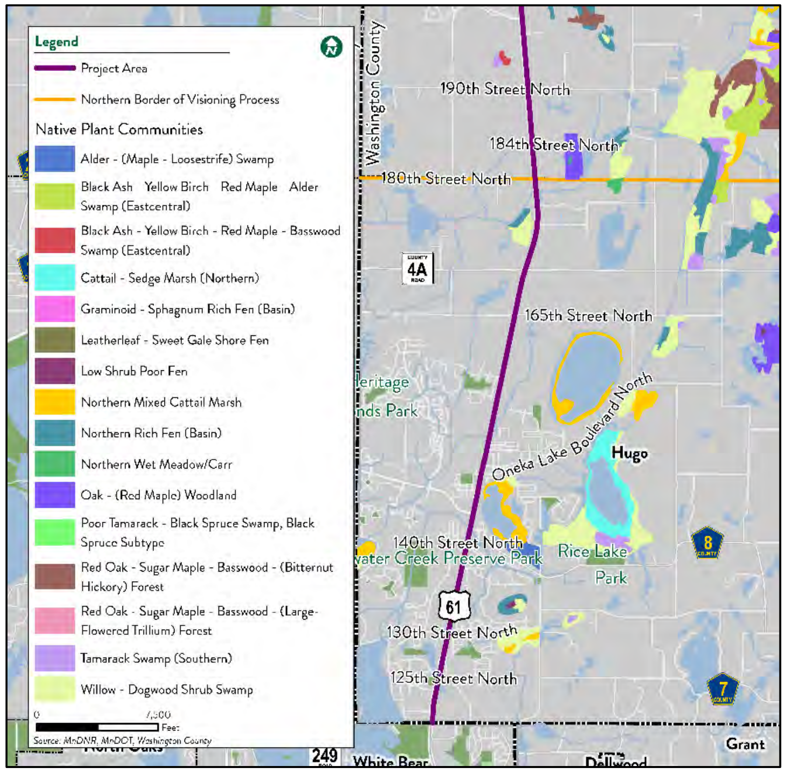
Figure 23. Potentially Contaminated Sites



Sensitive Ecological Resources

Native plant communities in the project area were considered using the MnDNR's Native Plant Communities dataset. A small number of remnant sites are located near Highway 61, including areas surrounding Egg Lake and the large wetland complex located west of Highway 61 and south of the North Star Elementary School as shown in ***Figure 24.***

Figure 24. Native Plant Communities



Most of the project area has been previously disturbed by development or is used for agricultural purposes. As such, much of the habitat present in the study area and the surrounding area has been fragmented or degraded. Natural resources in the project area consist of scattered stands of trees, landscape plantings, grassy areas, lakes, streams/ditches, and wetlands.

Visual

The study area is associated with an existing roadway corridor that is not near any unique scenic views. The southern portion of the study area includes a mix of open space, residential, and industrial developments. The central portion of the study corridor includes more densely developed land uses including commercial and residential areas associated with downtown Hugo. The northern portion of the visioning area is mostly rural/open space and residential developments, with the exception of the area around Headwaters Parkway which is experiencing commercial, institutional, and higher-density residential developments. Further north the highway corridor passes through downtown Forest Lake. Views of Forest Lake (Lake One) can be seen from Highway 61.

The visual quality of the study area has been experiencing a transition from a more rural/open space context to urbanizing. The views from highway users and adjacent properties are typically for developing areas.

Air and Noise Considerations

Several residential, commercial, institutional, and recreational uses are located adjacent to the Highway 61 corridor. These land uses commonly involve sensitive receptors to both air and noise quality. Potential adverse impacts to these receptors will be considered during the concept phase and may require formal analysis as part of future state and federal environmental reviews as projects are funded and implemented.

Public Engagement Summary

The first open house for the Highway 61 Visioning Study was held on April 5, 2023, at Hugo City Hall. About 110 residents attended the in-person meeting and 109 residents responded to the online survey. Most meeting attendees and survey respondents reported living less than a quarter of a mile from the project corridor. Project representatives were present, along with large displays highlighting traffic patterns, existing conditions, and future land use projections. Attendees made notes and comments on the study area map, shared community characteristics, and wrote corridor and roadway improvement ideas on display boards. Comments were also collected on printed comment cards. The open house was promoted on Facebook, Nextdoor, Twitter, and the project website. 245 mailers were also sent via USPS. Common themes and takeaways from the online survey, open house feedback, and interactive map include:

1. ***Pedestrian and bicycle safety.*** Participants noted a desire for improved pedestrian and bicycle facilities and clearly marked crosswalks for increased safety.
2. ***Reduced speed limit.*** Participants requested lower traffic speeds to make crossing the highway easier and minimize road noise.
3. ***Lack of turn lanes.*** Turning on and off Hwy 61 was mentioned as a safety concern, and participants noted that the lack of turn lanes disrupts the flow of traffic.
4. Hugo was described as a safe and growing community with a "small town feel." Parks and natural resources were noted as key features in the area.
5. Motor vehicles were marked as the most common form of travel along the corridor, followed by recreational use (walking, biking, and rolling).

A public engagement summary for the first open house is included in ***Appendix C***.

Appendix A – Figures

Washington County

Figure 1

Washington County

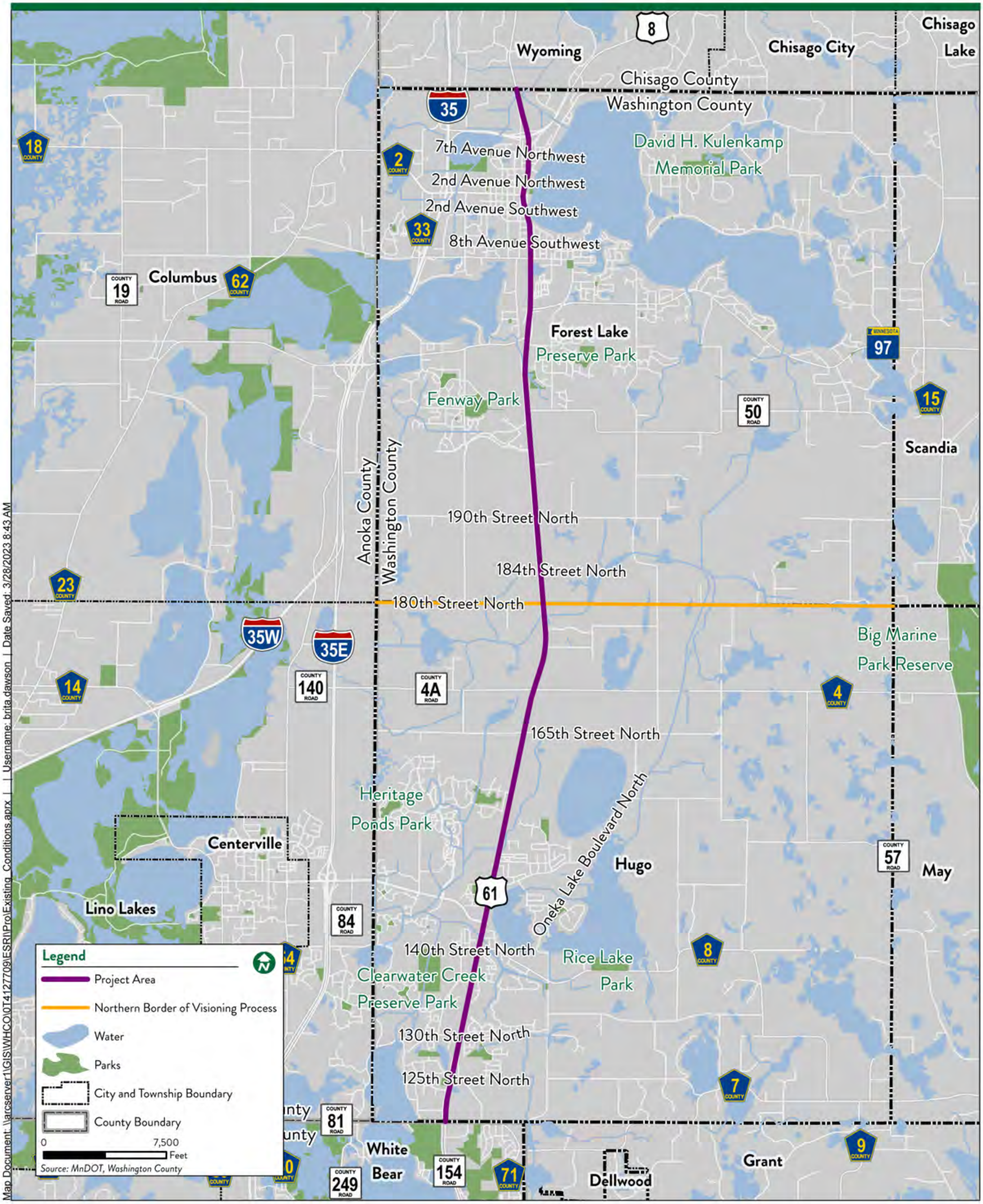
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Study Area Overview

March 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Username: brita.dawson | Date Saved: 3/28/2023 8:43 AM

Figure 2

Washington County

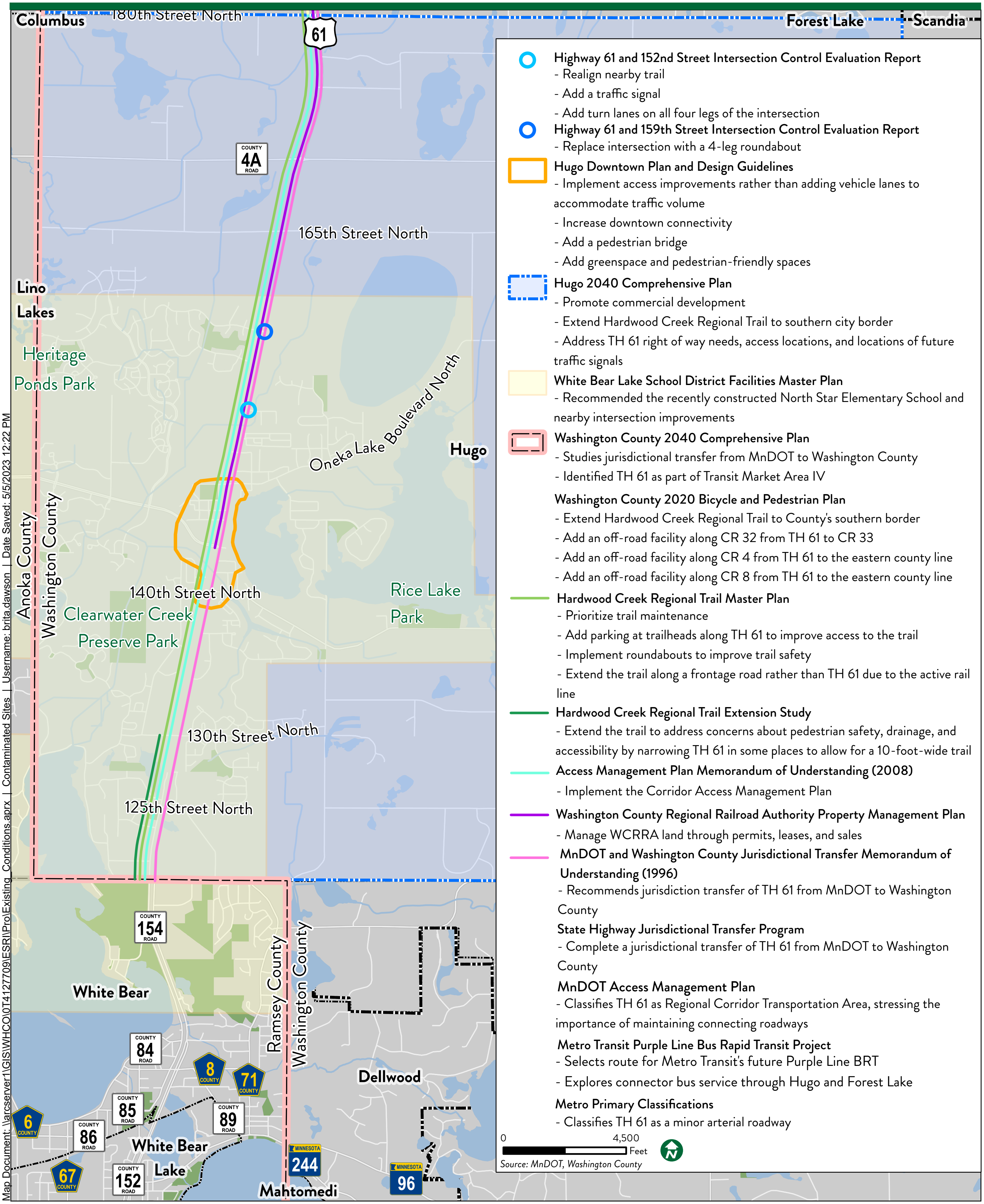
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Hugo Plan Locations

May 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 5/5/2023 12:22 PM

Washington County

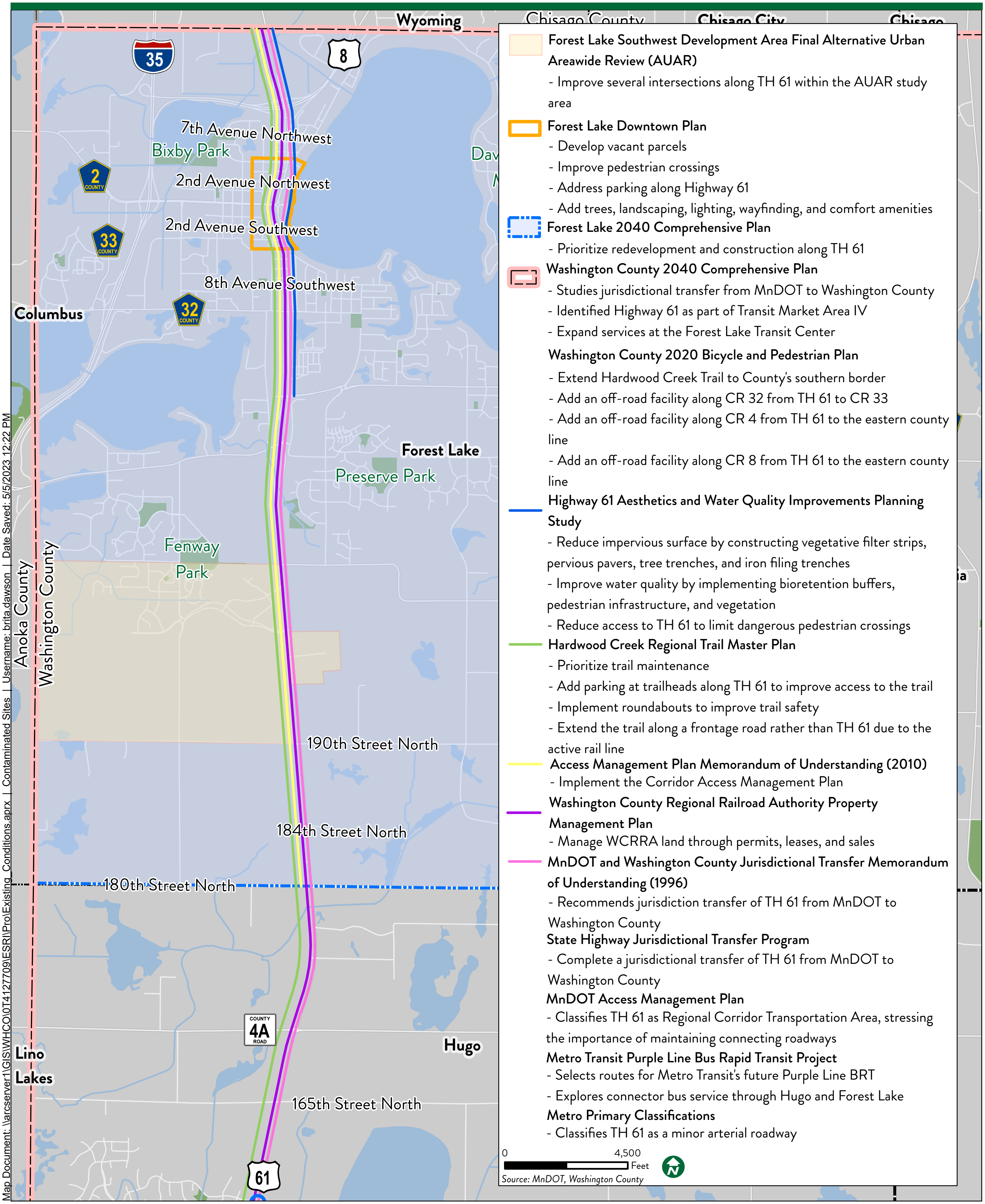
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Forest Lake Plan Locations

May 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 5/5/2023 12:22 PM

OnTheMap

Work Area Profile Report

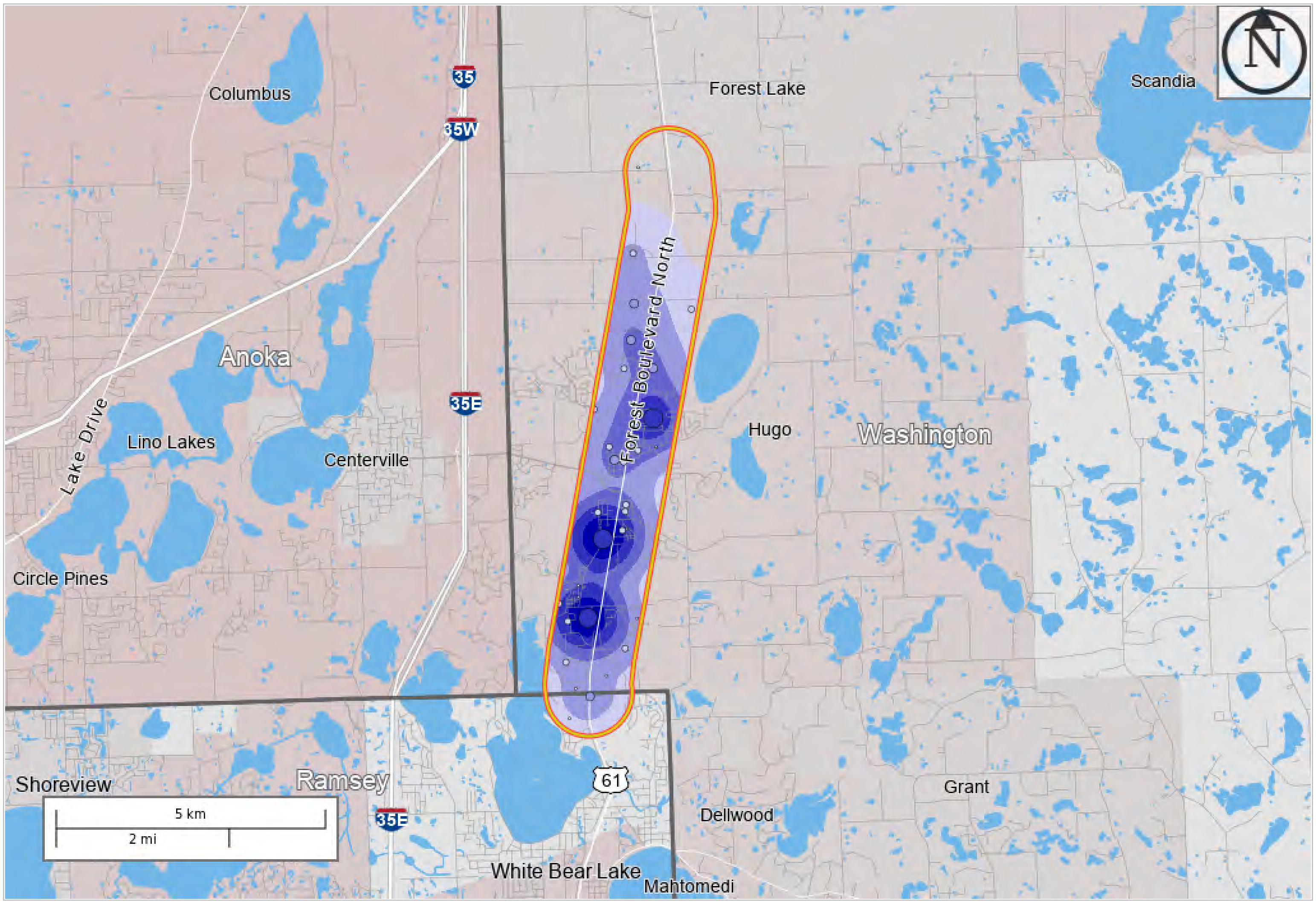
Figure 4

All Jobs for All Workers in 2020

Created by the U.S. Census Bureau's OnTheMap https://onthemap.ces.census.gov on 04/26/2023

Counts and Density of All Jobs in Work Selection Area in 2020

All Workers



Map Legend

Job Density [Jobs/Sq. Mile]

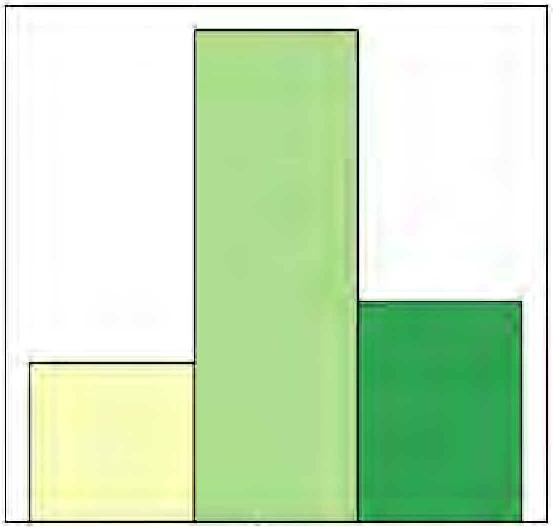
- 5 - 65
- 66 - 245
- 246 - 546
- 547 - 967
- 968 - 1,509

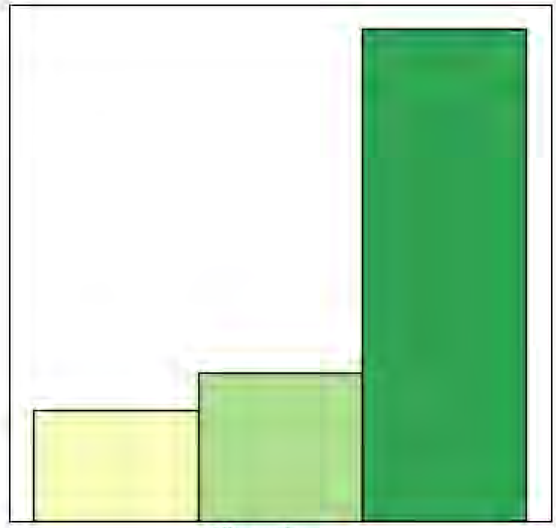
Job Count [Jobs/Census Block]

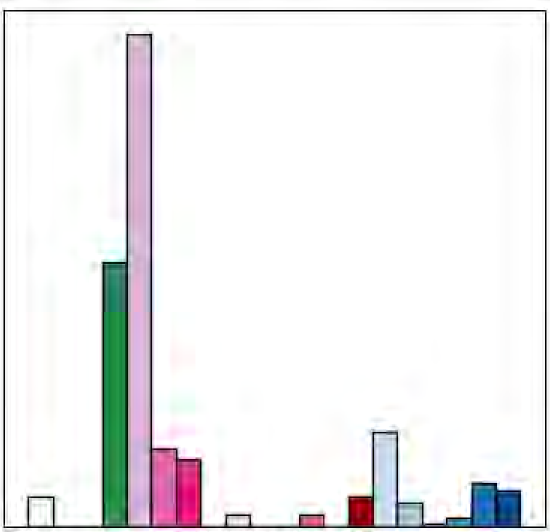
- 1 - 5
- 6 - 37
- 38 - 124
- 125 - 293
- 294 - 573

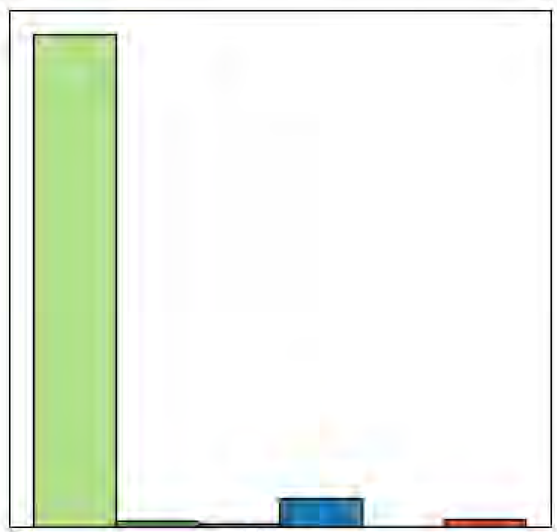
Selection Areas

- Work Area









All Jobs for All Workers by Total in 2020

Employed in Selection Area

	2020	
Total	**Count**	**Share**
Total All Jobs	1,966	100.0

Additional Information

Analysis Settings

Analysis Type	Area Profile
Selection area as	Work
Year(s)	2020
Job Type	All Jobs
Labor Market Segment	All Workers
Selection Area	Selection Area Freehand Drawing buffered 0.50 miles
Selected Census Blocks	72
Analysis Generation Date	04/26/2023 10:49 - OnTheMap 6.23.1
Code Revision	30c3afd99705bf092ebd0183d29001038c5276b8
LODES Data Version	20230307_1010

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2020).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.

OnTheMap

Inflow/Outflow Report

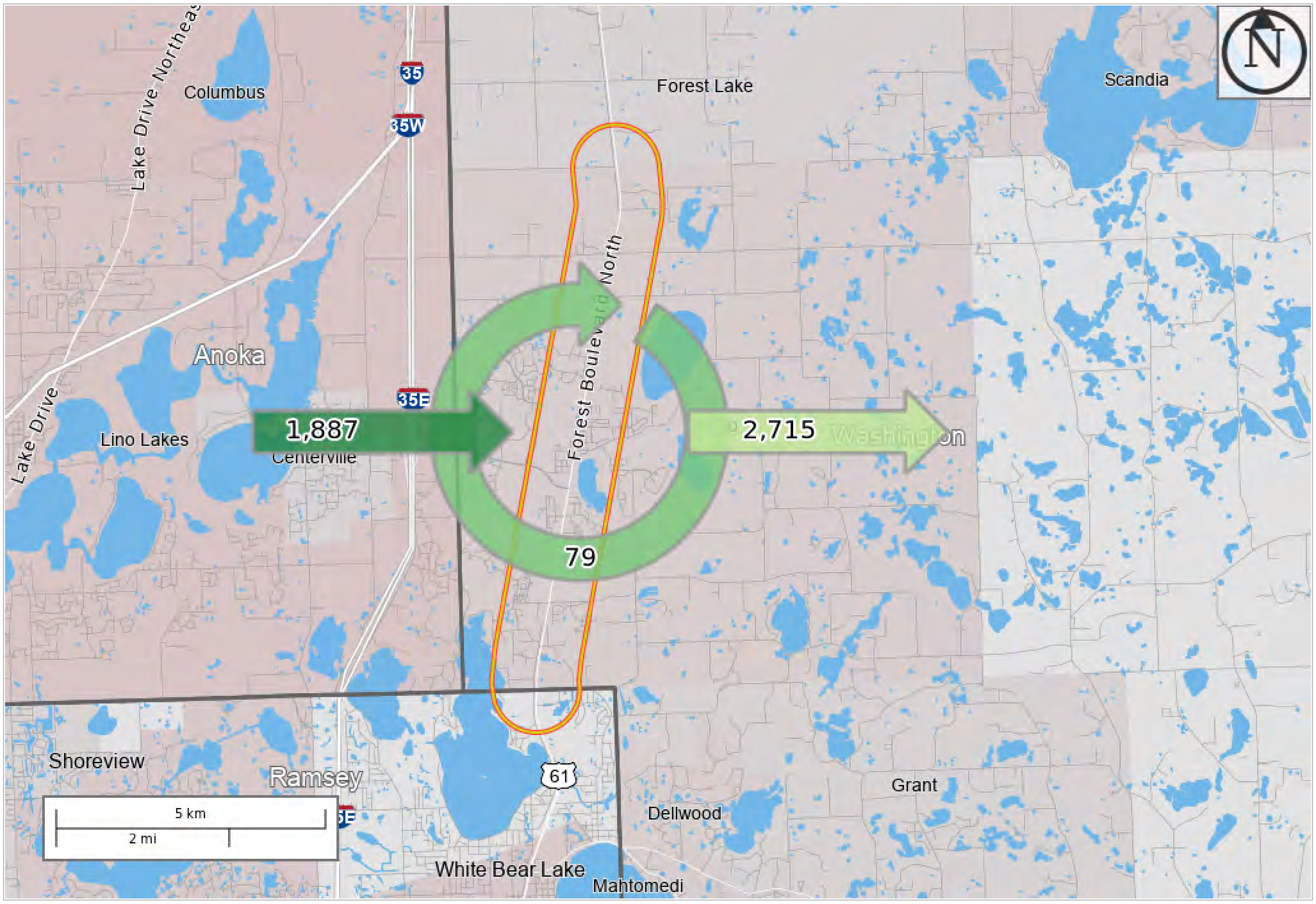
Figure 5

All Jobs for All Workers in 2020

Created by the U.S. Census Bureau's OnTheMap `https://onthemap.ces.census.gov` on 04/26/2023

Inflow/Outflow Counts of All Jobs for Selection Area in 2020

All Workers



Map Legend

Selection Areas

Selection Area

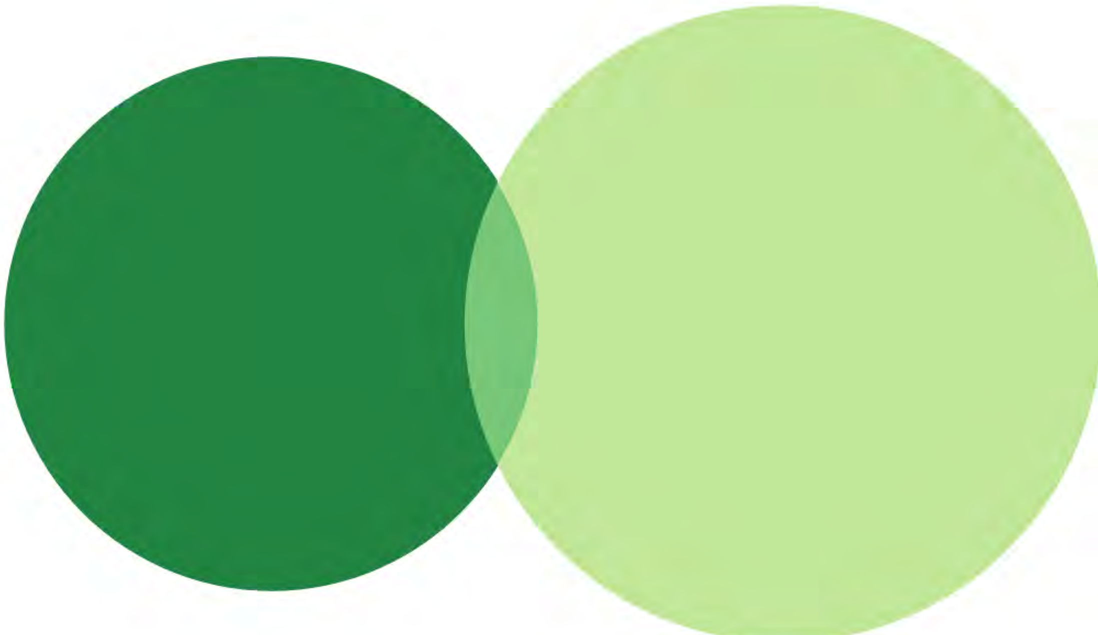
Inflow/Outflow

- Employed and Live in Selection Area
- Employed in Selection Area, Live Outside
- Live in Selection Area, Employed Outside

Note: Overlay arrows do not indicate directionality of worker flow between home and employment locations.

Inflow/Outflow Counts of All Jobs for Selection Area in 2020

All Workers



Worker Flows

- 1,887 - Employed in Selection Area, Live Outside
- 2,715 - Live in Selection Area, Employed Outside
- 79 - Employed and Live in Selection Area

Inflow/Outflow Counts of All Jobs for Selection Area in 2020

All Workers

	2020	
Worker Totals and Flows	**Count**	**Share**
Employed in the Selection Area	1,966	100.0
Employed in the Selection Area but Living Outside	1,887	96.0
Employed and Living in the Selection Area	79	4.0
Living in the Selection Area	2,794	100.0
Living in the Selection Area but Employed Outside	2,715	97.2
Living and Employed in the Selection Area	79	2.8

Additional Information

Analysis Settings

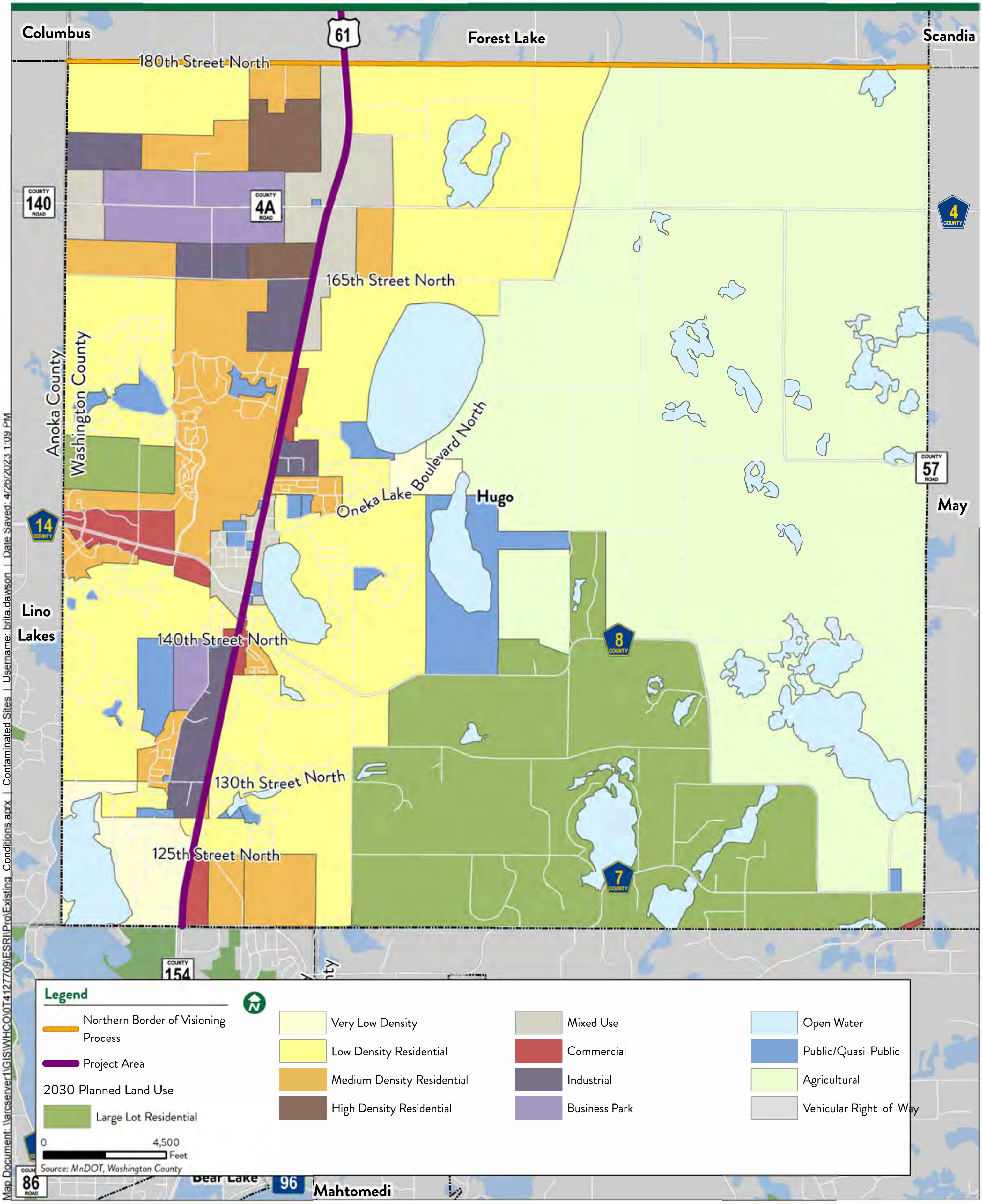
Analysis Type	Inflow/Outflow
Selection area as	N/A
Year(s)	2020
Job Type	All Jobs
Selection Area	Selection Area Freehand Drawing buffered 0.50 miles
Selected Census Blocks	72
Analysis Generation Date	04/26/2023 10:47 - OnTheMap 6.23.1
Code Revision	30c3afd99705bf092ebd0183d29001038c5276b8
LODES Data Version	20230307_1010

Data Sources

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2020).

Notes

1. Race, Ethnicity, Educational Attainment, and Sex statistics are beta release results and are not available before 2009.
2. Educational Attainment is only produced for workers aged 30 and over.
3. Firm Age and Firm Size statistics are beta release results for All Private jobs and are not available before 2011.


Columbus
Forest Lake
Scandia
180th Street North
61
165th Street North
Oneka Lake Boulevard North
Hugo
May
Anoka County
Washington County
Lino Lakes
140th Street North
130th Street North
125th Street North
Mahtomedi
Legend
Northern Border of Visioning Process
Project Area
2030 Planned Land Use
Large Lot Residential
Very Low Density
Low Density Residential
Medium Density Residential
High Density Residential
Mixed Use
Commercial
Industrial
Business Park
Open Water
Public/Quasi-Public
Agricultural
Vehicular Right-of-Way
0
4,500
Feet
Source: MnDOT, Washington County
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/26/2023 1:09 PM

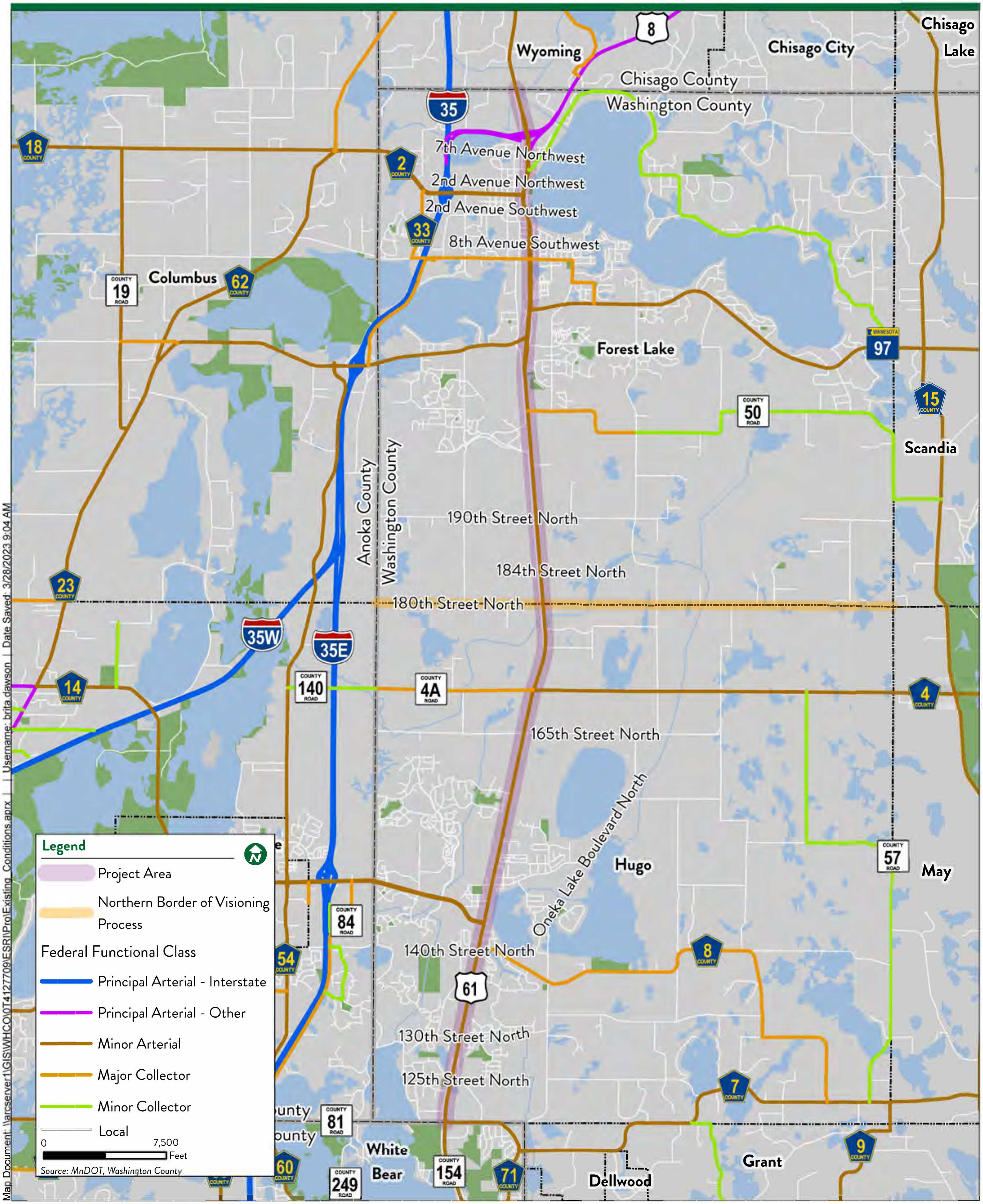

Wyoming
Chisago City
Chisago Lake
Chisago County
Washington County
7th Avenue Northwest
2nd Avenue Northwest
2nd Avenue Southwest
8th Avenue Southwest
Columbus
Forest Lake
Scandia
Anoka County
Washington County
190th Street North
184th Street North
180th Street North
165th Street North
Oneka Lake Boulevard North
Hugo
May
140th Street North
130th Street North
125th Street North
White Bear
Dellwood
Grant
Legend
Project Area
Northern Border of Visioning Process
Federal Functional Class
Principal Arterial - Interstate
Principal Arterial - Other
Minor Arterial
Major Collector
Minor Collector
Local
0
7,500
Feet
Source: MnDOT, Washington County
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Username: brita.dawson | Date Saved: 3/28/2023 9:04 AM

Figure 8

Washington County

TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Access Inventory

March 2023

BOLTON & MENK

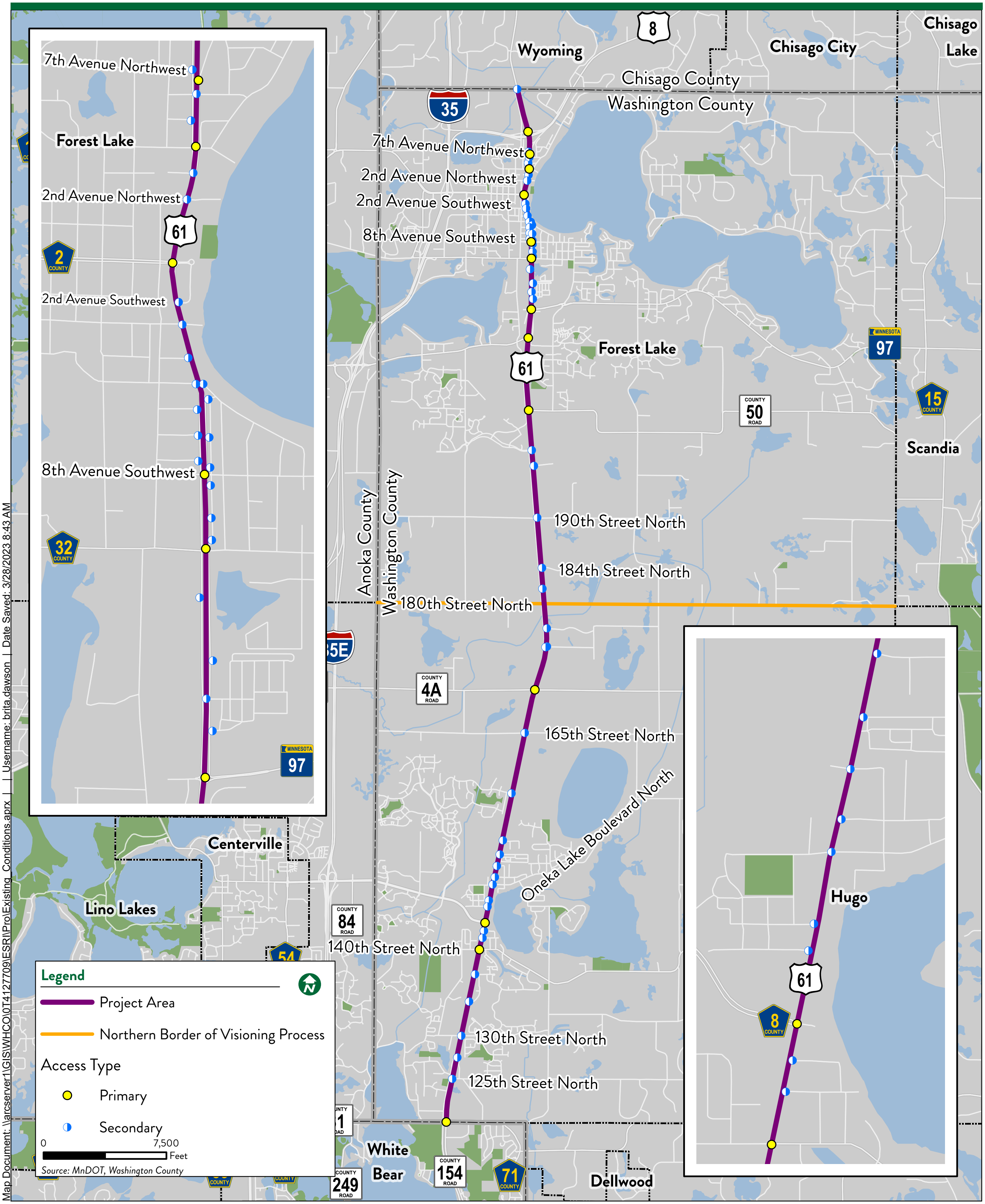


Figure 9

Washington County

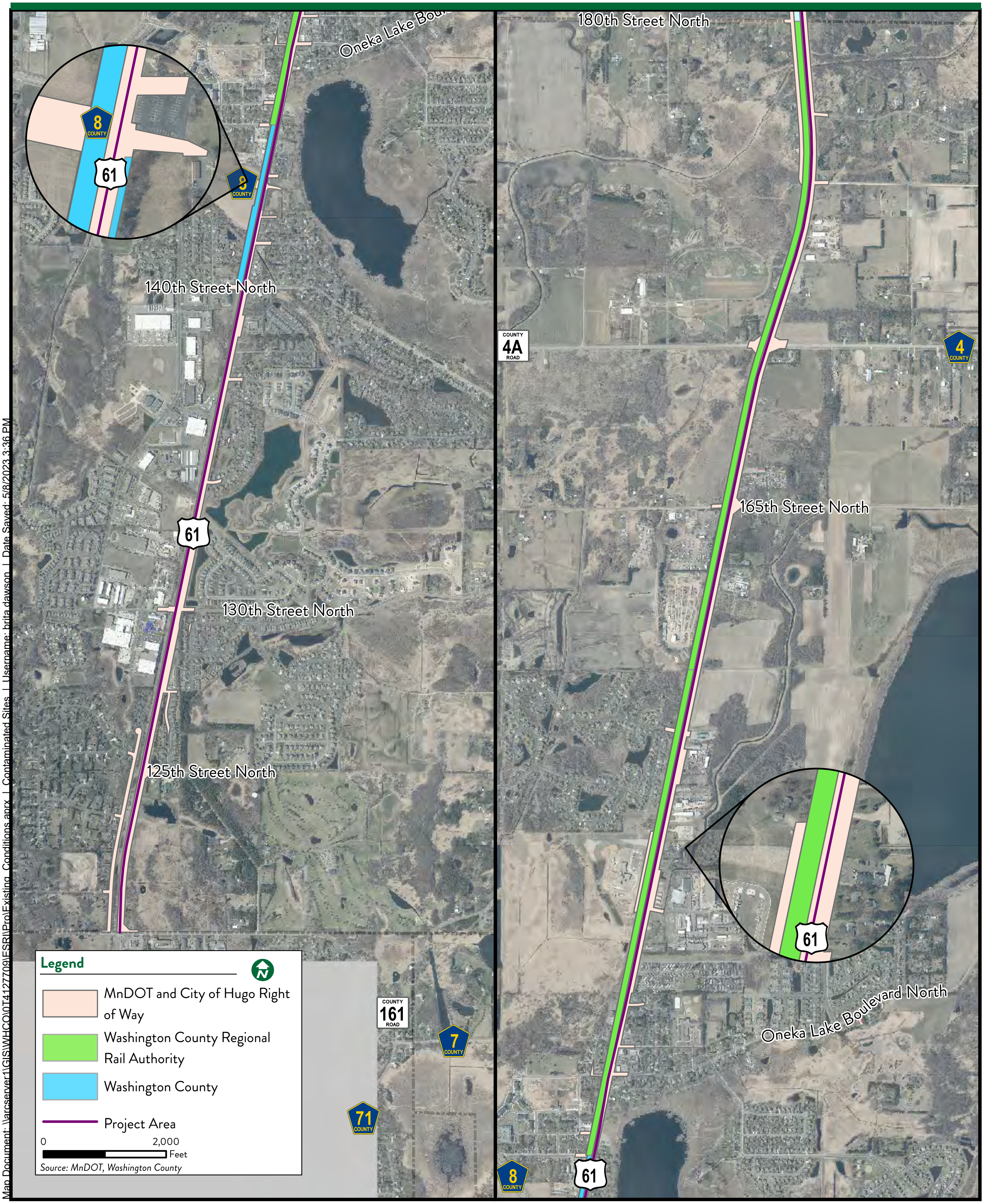
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

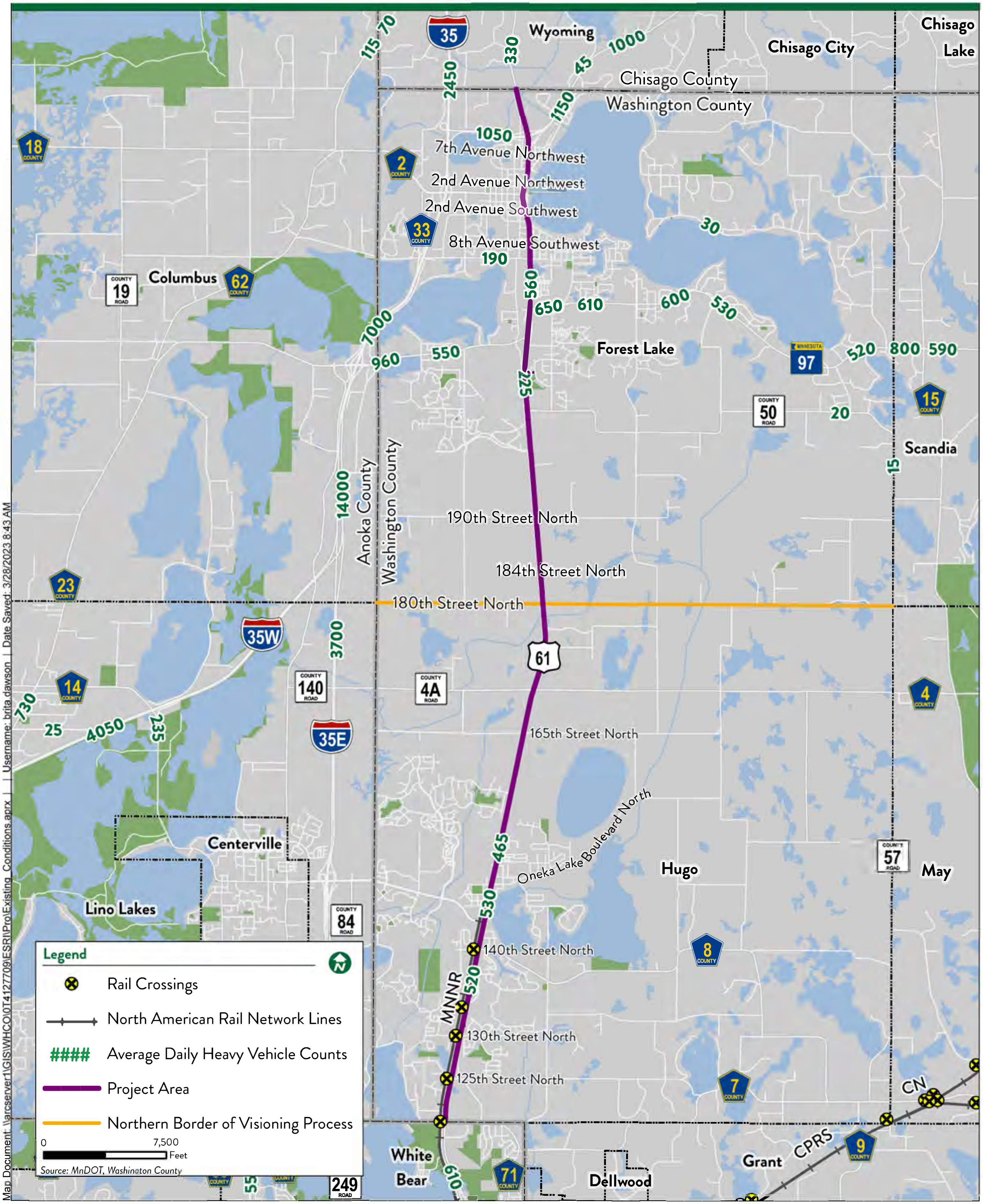
Parcel Ownership

May 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 5/8/2023 3:36 PM



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Username: brita.dawson | Date Saved: 3/28/2023 8:43 AM

Figure 11

TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Pedestrian and Bicycle Facilities

May 2023

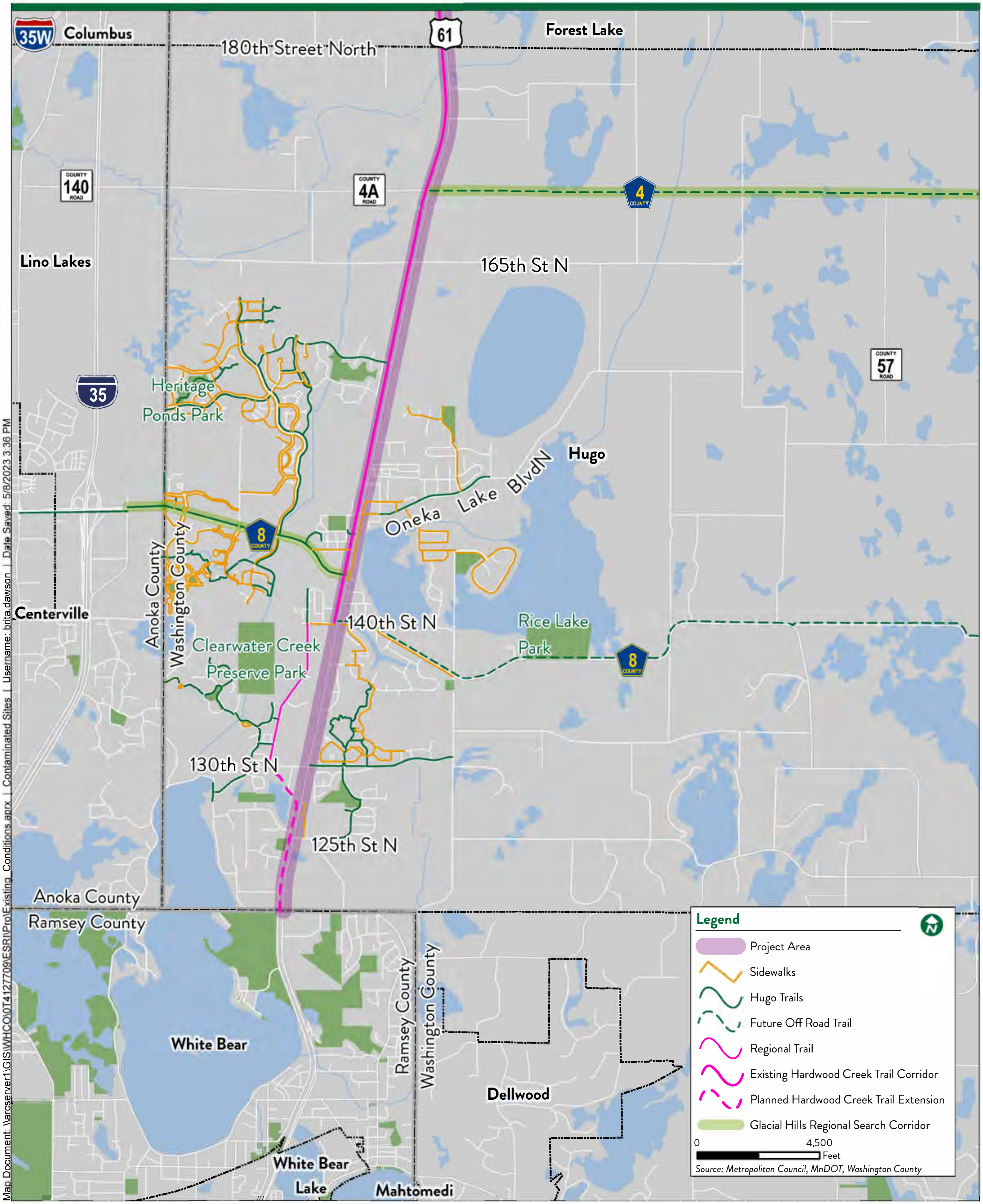


Figure 12

Washington County

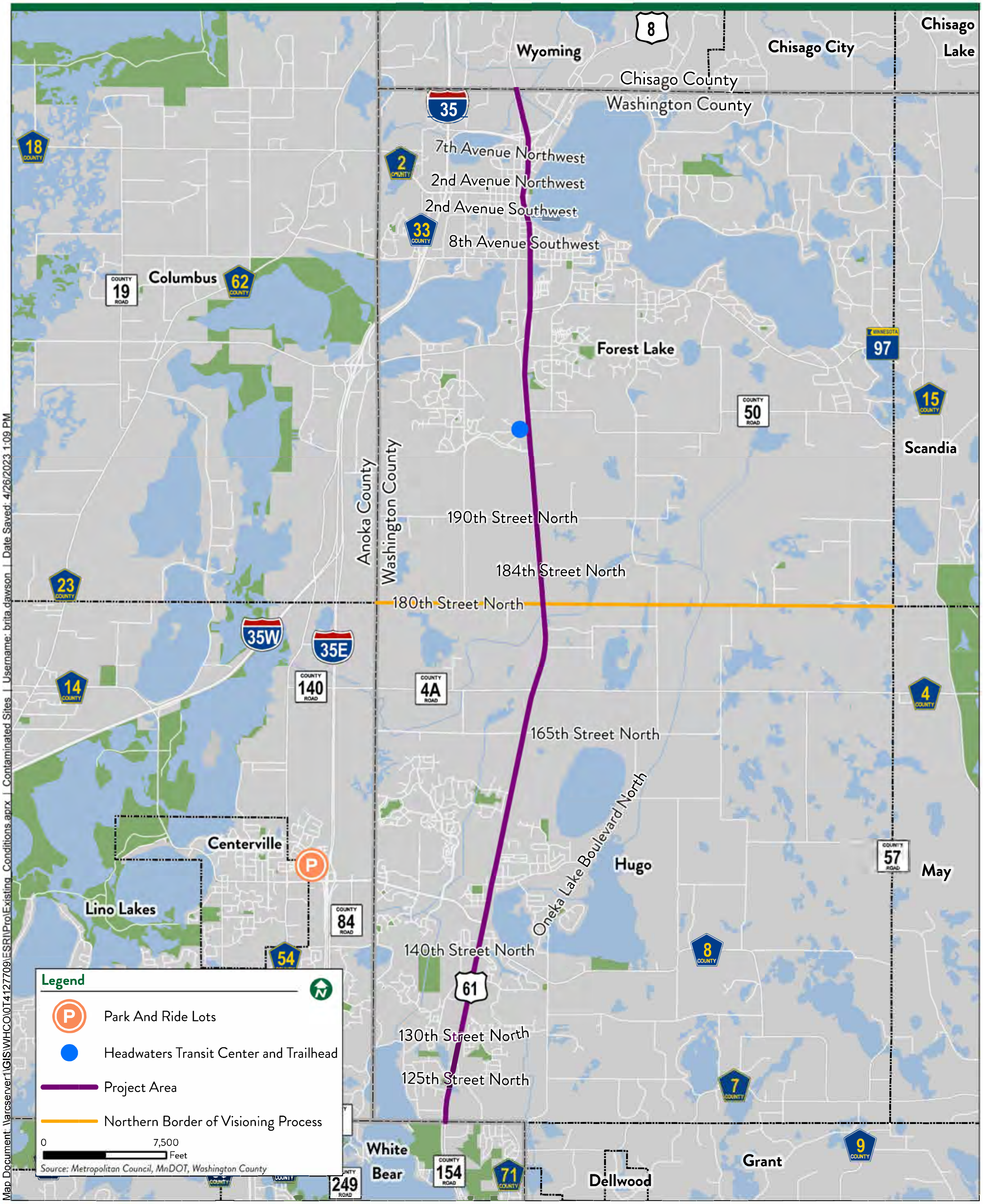
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

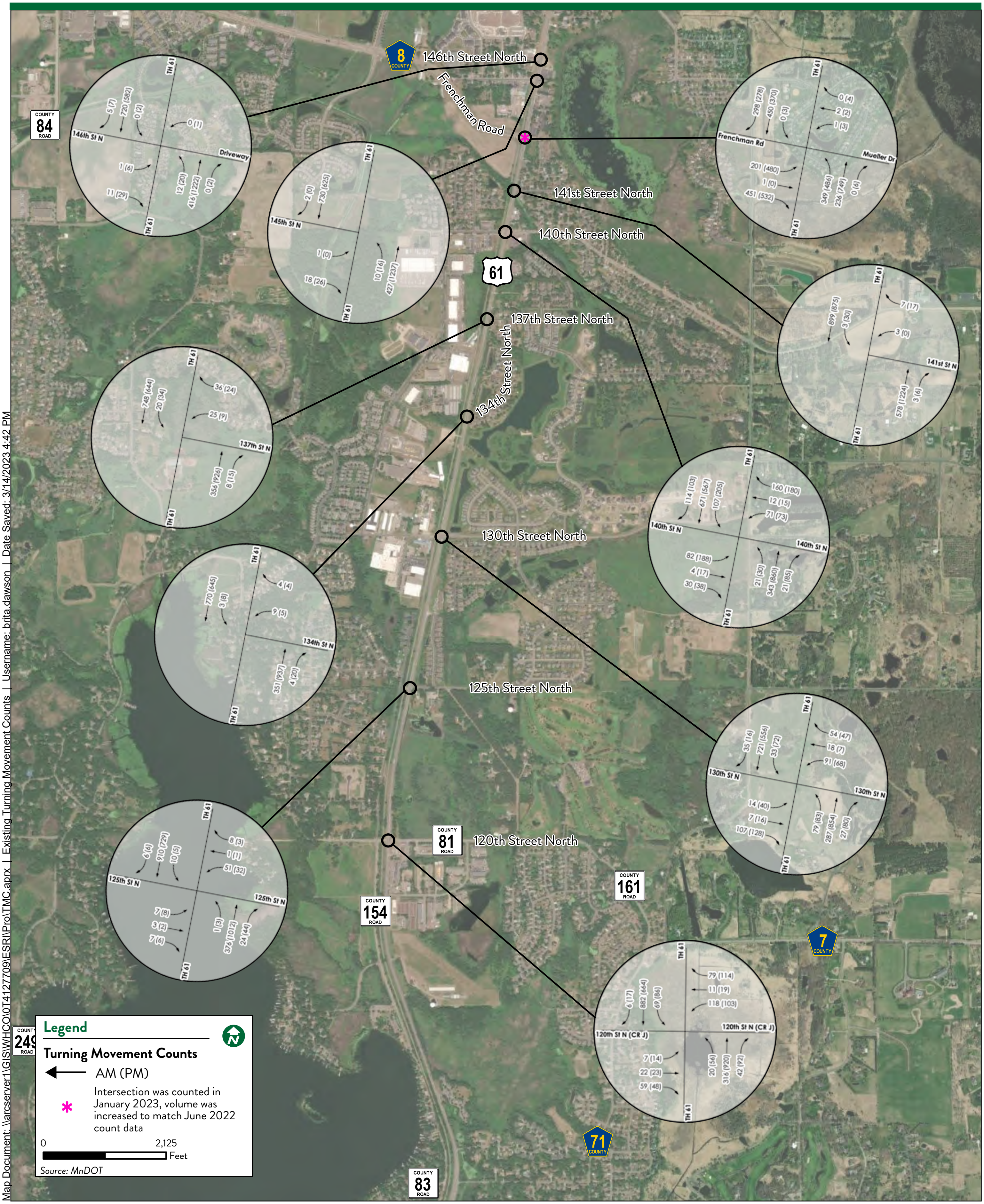
Transit Facilities

April 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/26/2023 1:09 PM



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Existing Turning Movement Counts | Username: brita.dawson | Date Saved: 3/14/2023 4:42 PM

Washington County

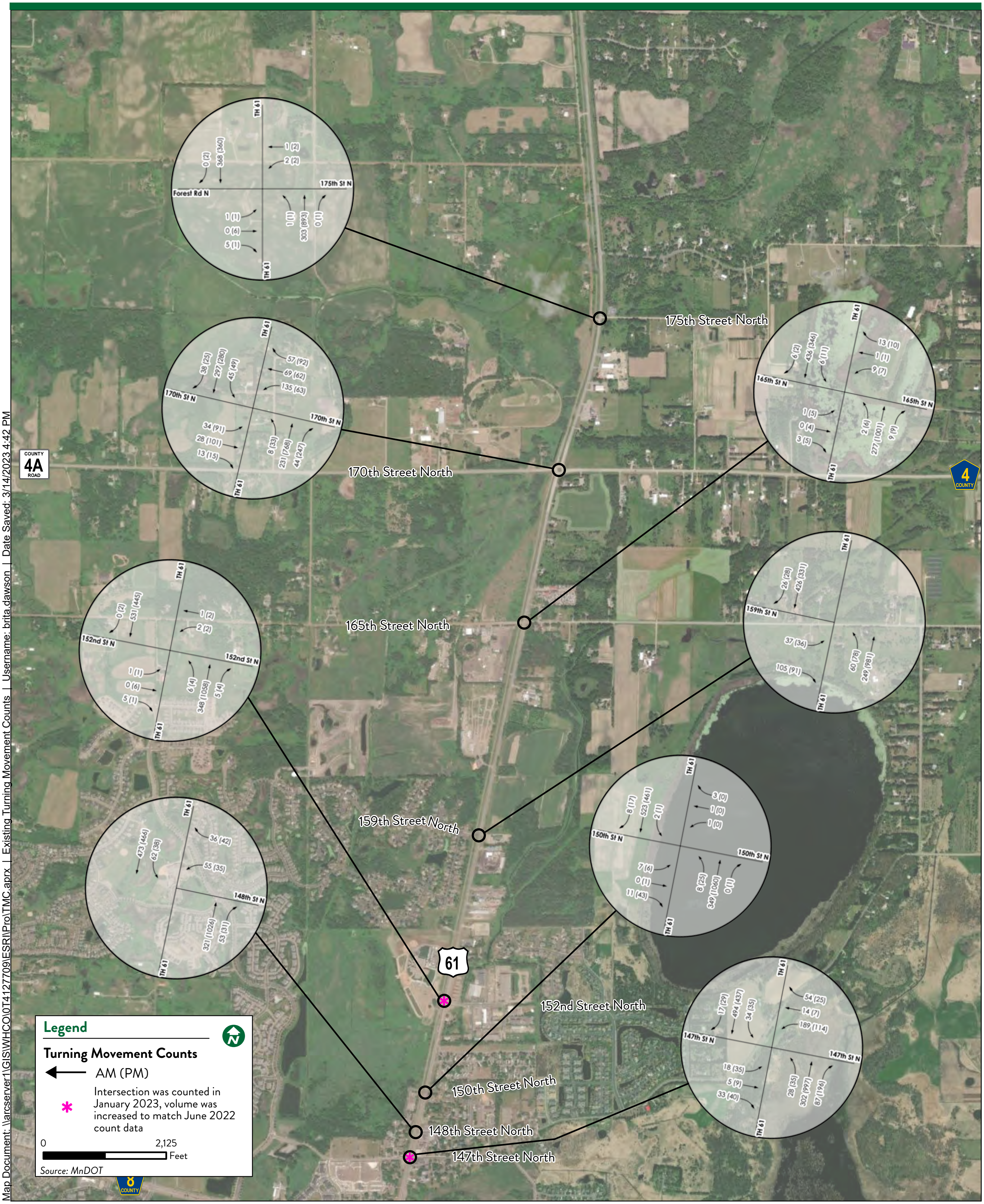
TH 61 Visioning and Jurisdiction Study

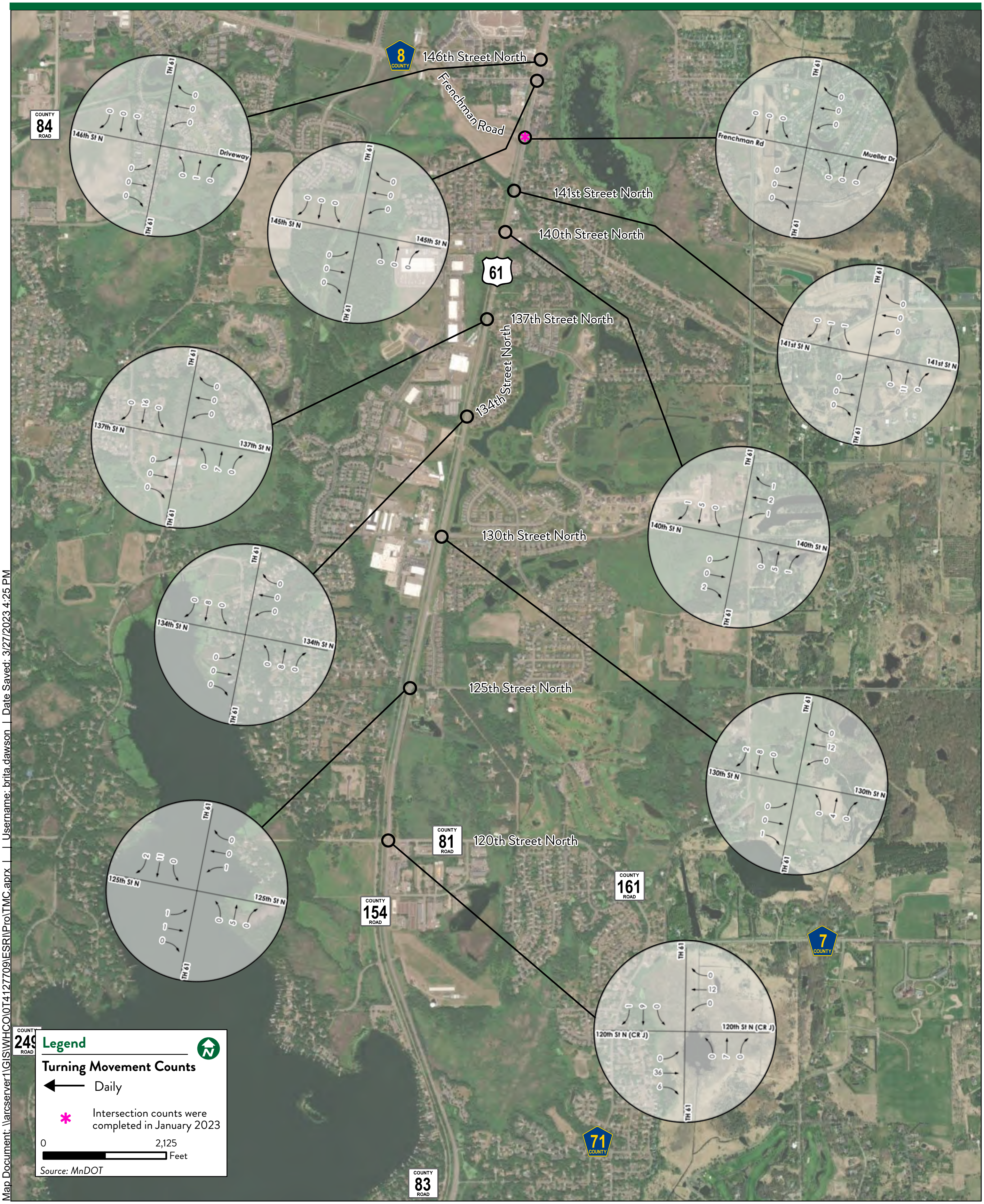
Washington County, Minnesota

Existing Turning Movement Counts

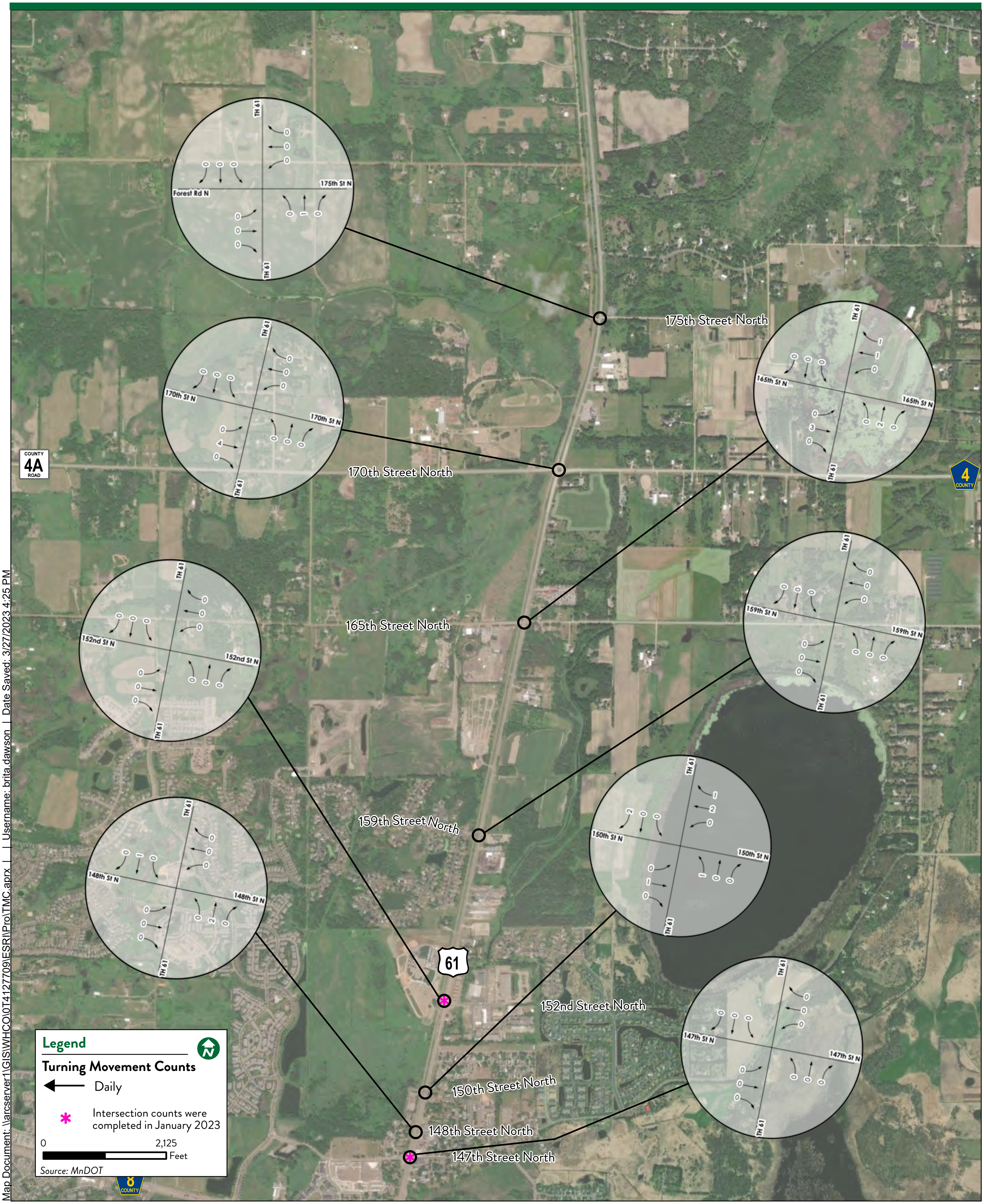
March 2023

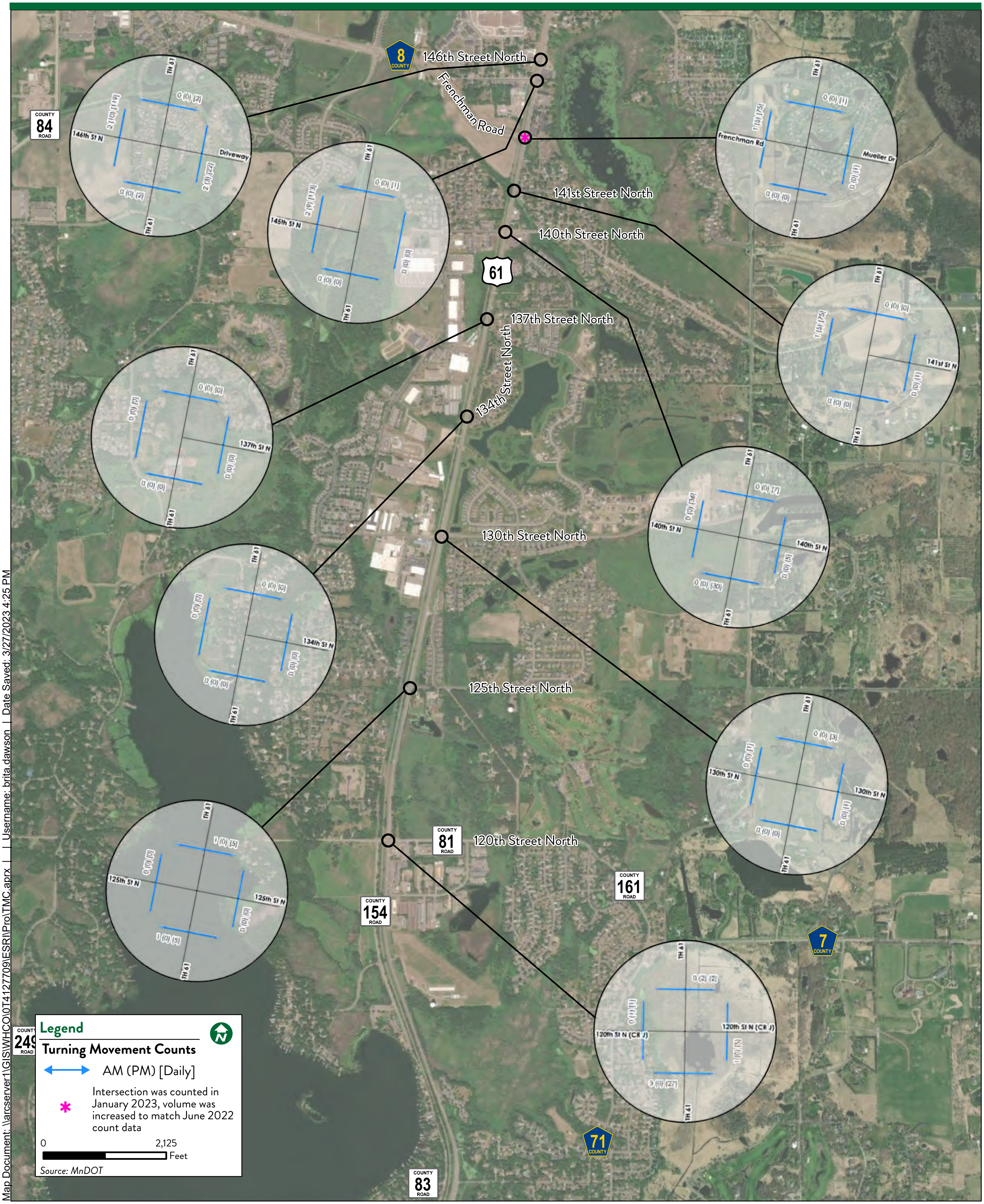
BOLTON & MENK





Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 3/27/2023 4:25 PM

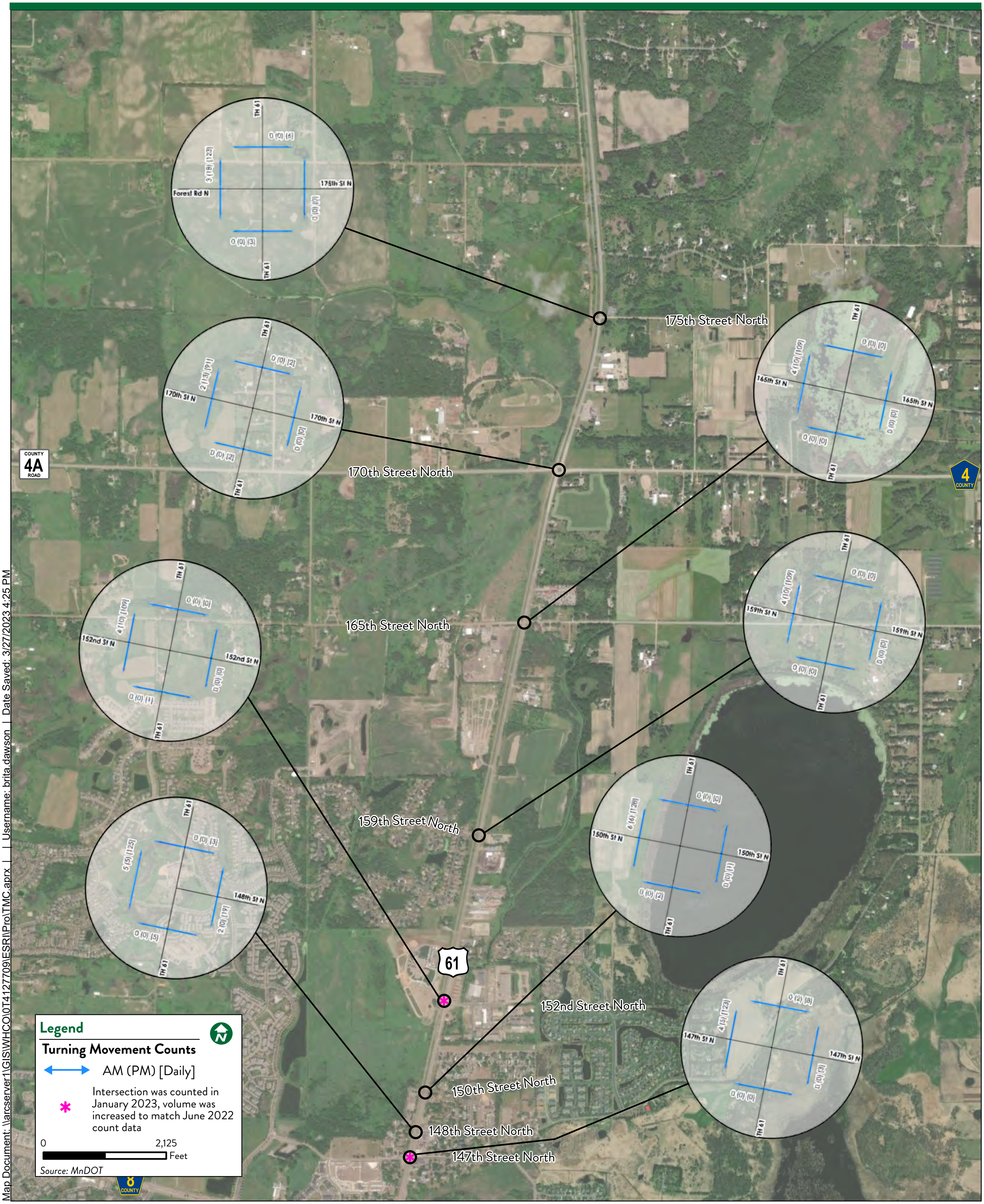

175th Street North
170th Street North
165th Street North
159th Street North
152nd Street North
150th Street North
148th Street North
147th Street North
COUNTY 4A ROAD
4 COUNTY
8 COUNTY
61
Forest Rd N
175th St N
170th St N
165th St N
159th St N
152nd St N
150th St N
148th St N
147th St N
TH 61
Legend
Turning Movement Counts
Daily
Intersection counts were completed in January 2023
0
2,125
Feet
Source: MnDOT



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 3/27/2023 4:25 PM

Pedestrian and Bicycle Counts at Intersection Crosswalks

Figure 18



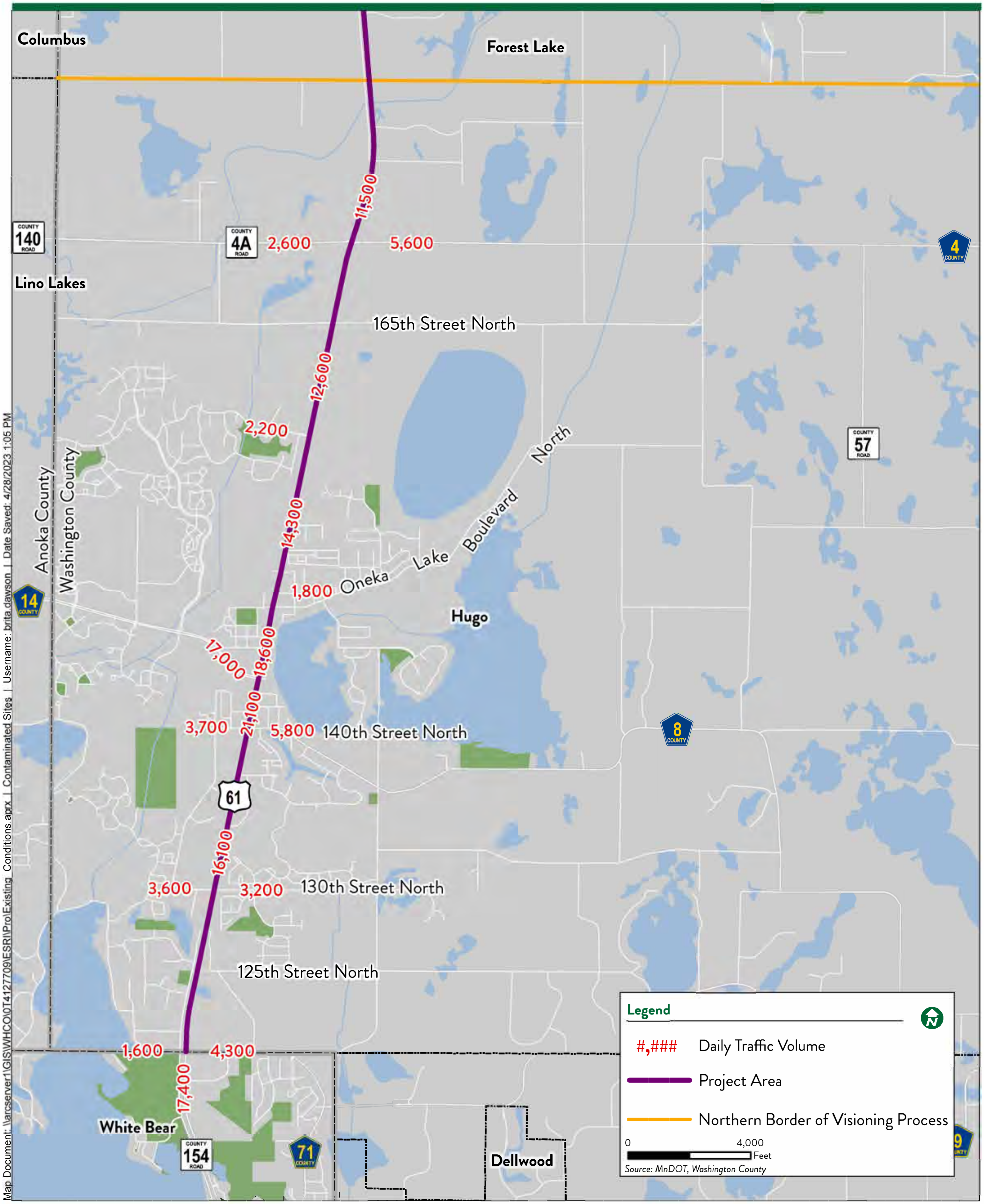

Columbus
Forest Lake
Lino Lakes
Hugo
White Bear
Dellwood
Anoka County
Washington County
165th Street North
Oneka Lake Boulevard North
140th Street North
130th Street North
125th Street North
11,500
2,600
5,600
12,600
2,200
14,300
1,800
17,000
18,600
21,100
3,700
5,800
16,100
3,600
3,200
1,600
4,300
17,400
140
4A
4
57
14
8
61
154
71
Legend
#,### Daily Traffic Volume
Project Area
Northern Border of Visioning Process
0
4,000
Feet
Source: MnDOT, Washington County
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/28/2023 1:05 PM

Figure 20

Washington County

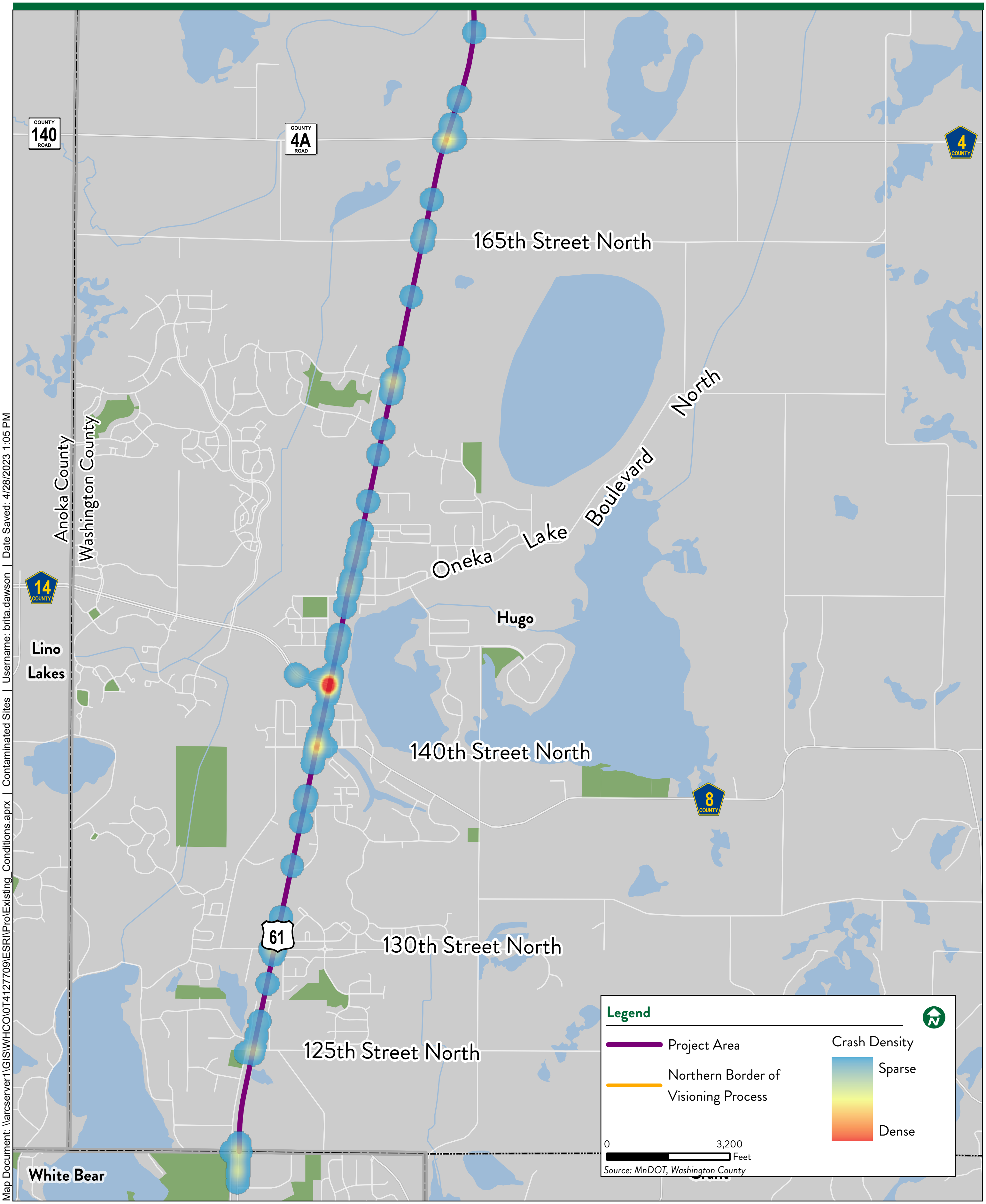
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

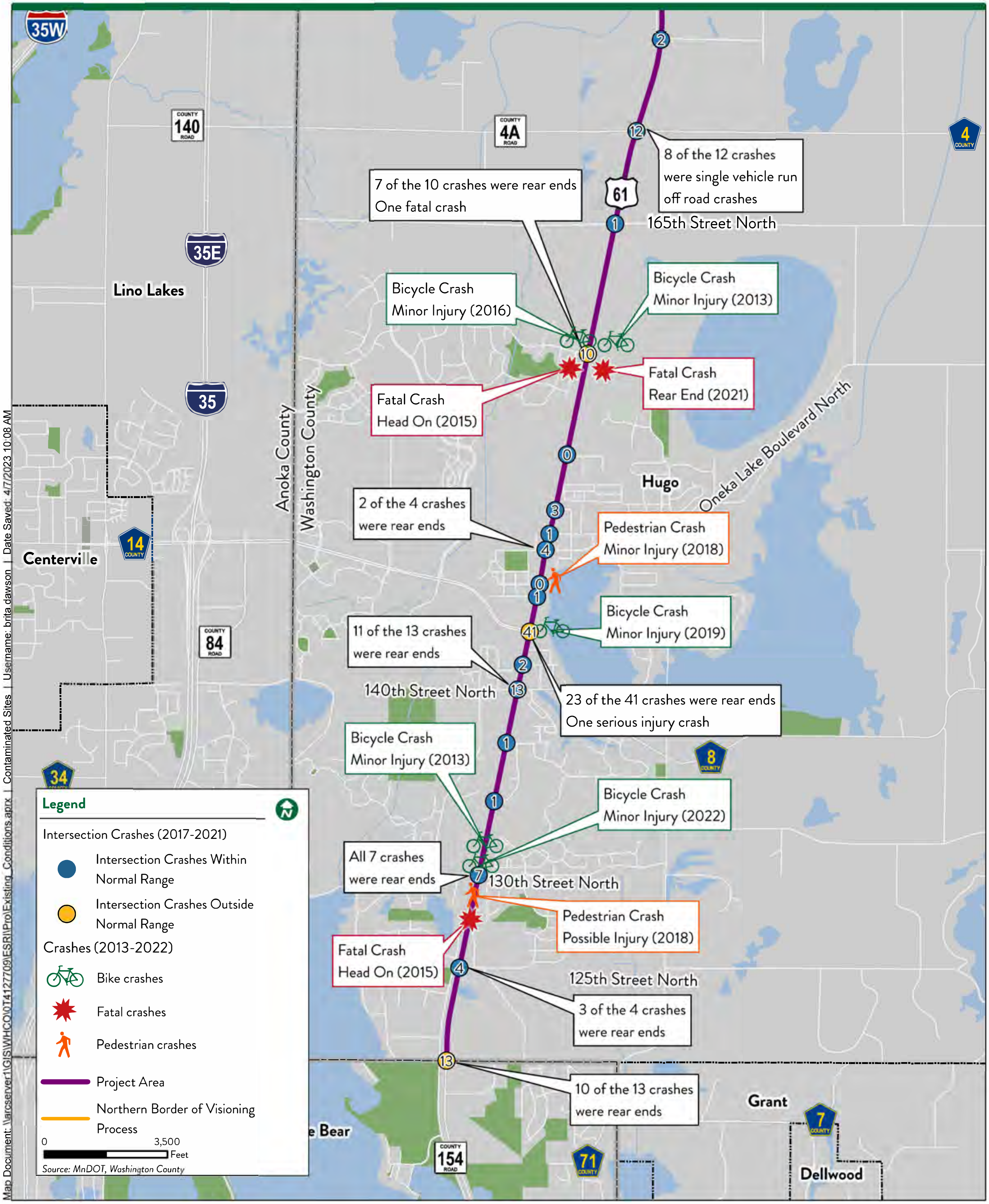
Crash Density (2017-2021)

April 2023

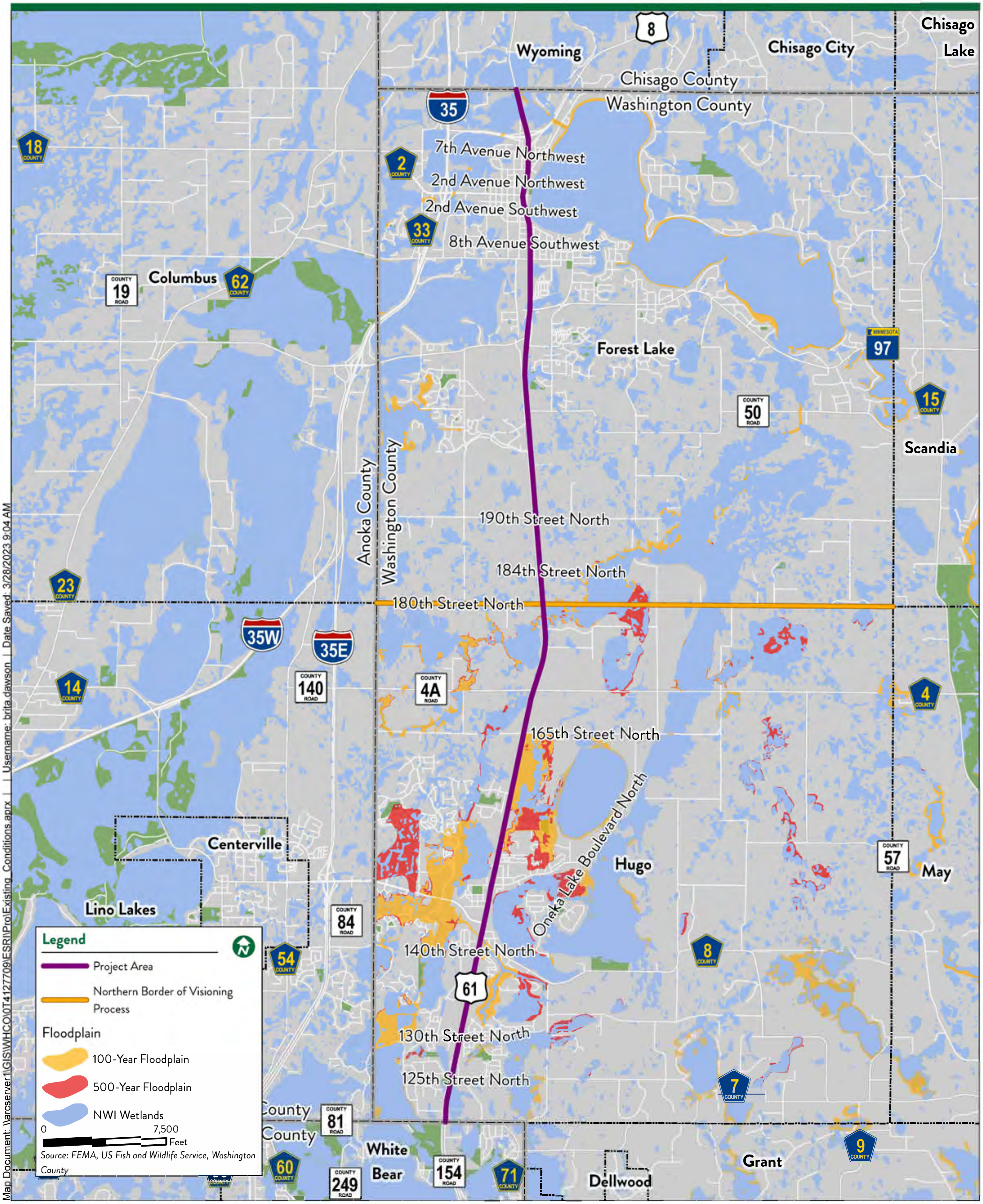
BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/28/2023 1:05 PM



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/7/2023 10:08 AM


Wyoming
Chisago City
Chisago Lake
Chisago County
Washington County
7th Avenue Northwest
2nd Avenue Northwest
2nd Avenue Southwest
8th Avenue Southwest
Columbus
Forest Lake
Scandia
Anoka County
Washington County
190th Street North
184th Street North
180th Street North
165th Street North
Oneka Lake Boulevard North
Hugo
May
Centerville
Lino Lakes
140th Street North
130th Street North
125th Street North
White Bear
Grant
Dellwood
Legend
Project Area
Northern Border of Visioning Process
Floodplain
100-Year Floodplain
500-Year Floodplain
NWI Wetlands
0
7,500
Feet
Source: FEMA, US Fish and Wildlife Service, Washington County
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Username: brita.dawson | Date Saved: 3/28/2023 9:04 AM

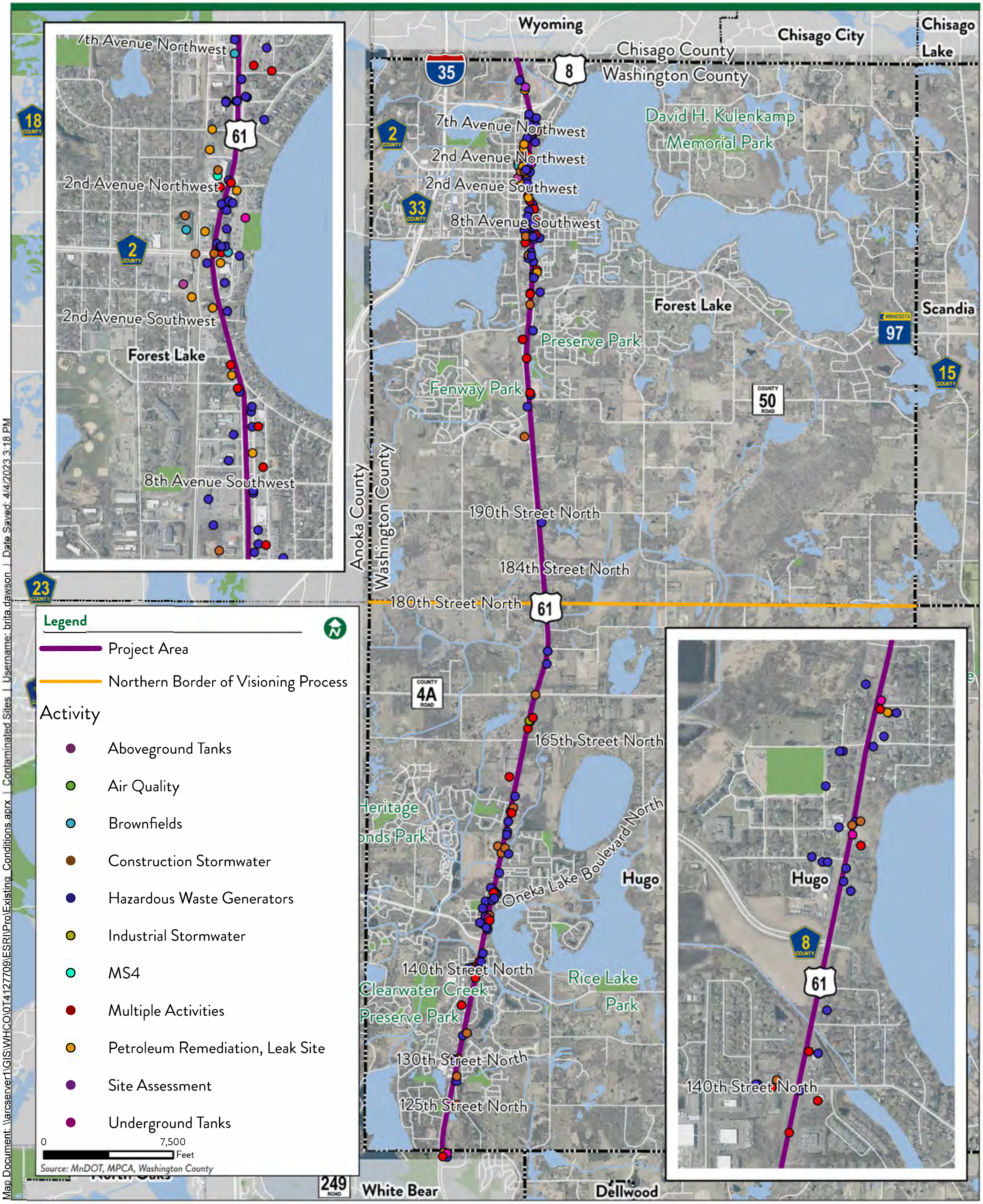

Legend
Project Area
Northern Border of Visioning Process
Activity
Aboveground Tanks
Air Quality
Brownfields
Construction Stormwater
Hazardous Waste Generators
Industrial Stormwater
MS4
Multiple Activities
Petroleum Remediation, Leak Site
Site Assessment
Underground Tanks
0
7,500
Feet
Source: MnDOT, MPCA, Washington County
Wyoming
Chisago County
Washington County
Chisago City
Chisago Lake
David H. Kulenkamp Memorial Park
7th Avenue Northwest
2nd Avenue Northwest
2nd Avenue Southwest
8th Avenue Southwest
Forest Lake
Scandia
Preserve Park
Fenway Park
Anoka County
190th Street North
184th Street North
180th Street North
165th Street North
Heritage
Oneka Lake Boulevard North
Hugo
140th Street North
Clearwater Creek Preserve Park
Rice Lake Park
130th Street North
125th Street North
White Bear
Dellwood
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/4/2023 3:18 PM

Figure 24

Washington County

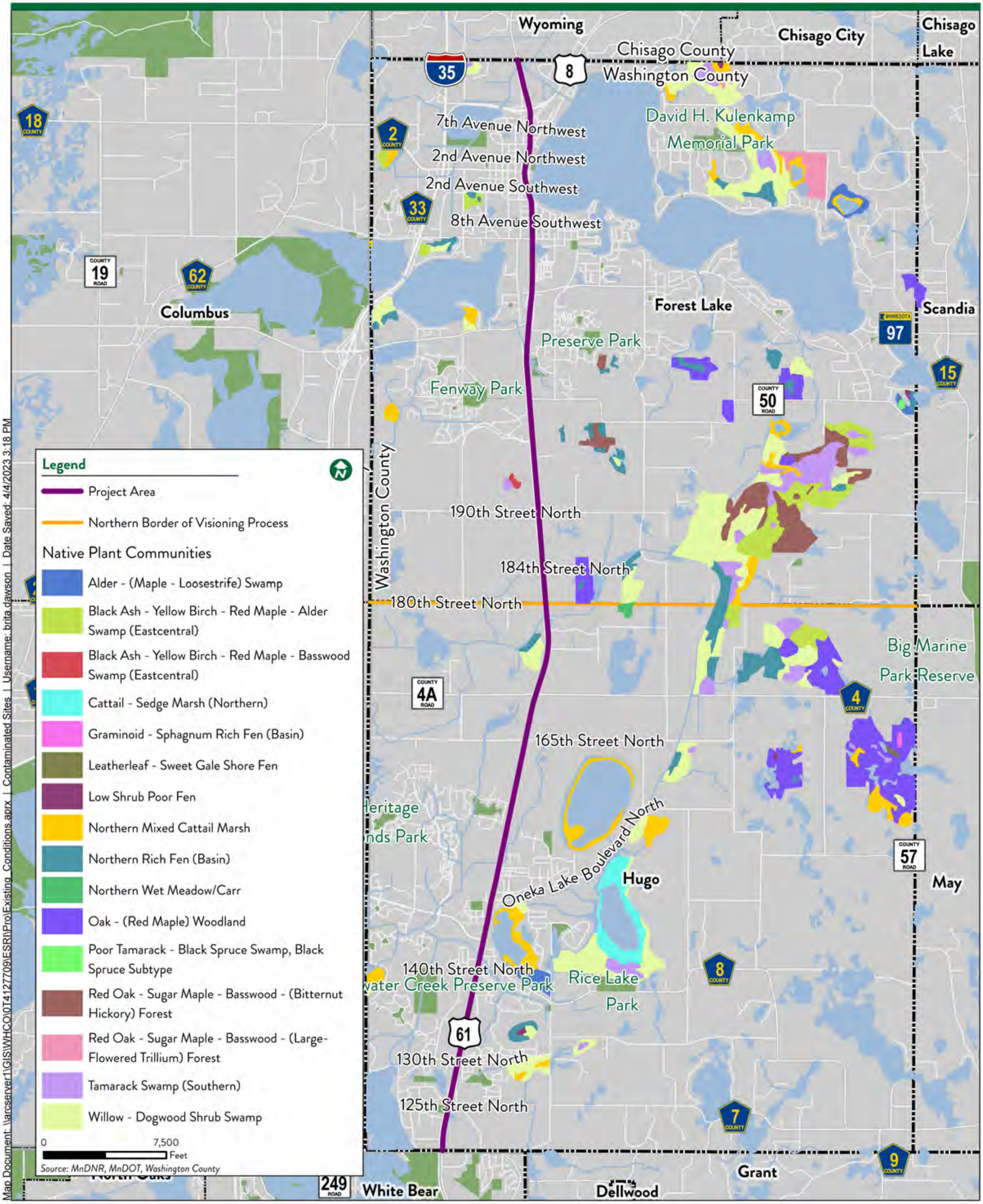
TH 61 Visioning and Jurisdiction Study

Washington County, Minnesota

Native Plant Communities

April 2023

BOLTON & MENK



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\Existing_Conditions.aprx | Contaminated Sites | Username: brita.dawson | Date Saved: 4/4/2023 3:18 PM

Appendix B – Tables

Washington County

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Existing Condition

Intersection	Approach	AM Peak Hour																	
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)								
		Demand Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through			Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Link Length	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	1	-	5	6	8 - A	-	4 - A	5 - A	4 - A	-	25	50	984	25	50	-	25	50
	WB	2	1	-	3	18 - C	16 - C	-	18 - C		-	25	50	1624	25	50	-	25	50
	NB	1	321	-	322	-	2 - A	-	2 - A		-	0	25	2613	0	25	-	0	25
	SB	-	368	-	368	-	5 - A	-	5 - A		-	-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	34	28	13	75	6 - A	6 - A	6 - A	6 - A	7 - A	-	-	-	2839	-	-	-	-	-
	WB	135	69	57	261	7 - A	7 - A	7 - A	7 - A		-	-	25	3150	-	25	-	-	25
	NB	8	239	44	291	5 - A	5 - A	5 - A	5 - A		-	-	25	2581	-	25	-	-	25
	SB	45	305	38	388	7 - A	7 - A	7 - A	7 - A		-	-	50	2613	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	1	-	3	4	5 - A	-	4 - A	5 - A	3 - A	-	25	50	2315	25	50	-	25	50
	WB	9	1	13	23	12 - B	7 - A	4 - A	8 - A		-	25	50	3503	25	50	-	25	50
	NB	2	280	9	291	2 - A	5 - A	1 - A	5 - A		-	0	25	3664	0	25	-	-	-
	SB	6	446	6	458	3 - A	2 - A	2 - A	3 - A		-	25	50	2581	25	50	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	37	-	105	142	6 - A	-	6 - A	6 - A	6 - A	-	-	25	-	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	60	289	-	349	5 - A	5 - A	-	5 - A		200		25	200		25	200		25
	SB	-	434	26	460	-	7 - A	7 - A	7 - A		1150	-	50	1150	-	50	1150	-	50
TH 61 at 152nd St N *Signalized*	EB	1	-	5	6	-	-	4 - A	4 - A	2 - A	-	0	25	961	25	25	-	25	25
	WB	2	1	-	3	98 - F	136 - F	-	111 - F		-	25	25	959	25	25	-	25	25
	NB	6	362	-	368	2 - A	1 - A	-	2 - A		250	25	25	1545	25	75	-	-	-
	SB	-	562	-	562	-	3 - A	-	3 - A		-	-	-	2807	25	75	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	7	-	11	18	11 - B	-	4 - A	7 - A	2 - A	-	25	50	1225	25	50	-	25	50
	WB	1	1	3	5	8 - A	15 - C	4 - A	7 - A		-	25	50	451	25	50	-	25	50
	NB	8	358	-	366	4 - A	1 - A	-	2 - A		-	25	75	640	25	75	-	25	75
	SB	2	560	8	570	5 - A	2 - A	1 - A	2 - A		-	0	25	1545	0	25	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-	-
	WB	55	-	36	91	20 - C	-	10 - B	17 - C		-	50	150	-	-	-	-	50	150
	NB	-	360	53	413	-	2 - A	1 - A	2 - A		-	-	-	379	25	50	-	25	50
	SB	62	484	-	546	5 - A	2 - A	-	3 - A		75	50	125	640	50	125	-	-	-
TH 61 at 147th St N *Signalized*	EB	18	5	33	56	63 - E	60 - E	11 - B	31 - C	17 - B	135	25	75	981	50	100	-	50	100
	WB	189	14	54	257	70 - E	60 - E	19 - B	58 - E		175	175	325	1710	75	400	-	75	400
	NB	29	321	87	437	8 - A	4 - A	2 - A	4 - A		275	25	50	920	50	150	250	25	50
	SB	34	524	17	575	8 - A	6 - A	1 - A	6 - A		250	25	50	379	100	250	250	25	25
TH 61 at 146th St N *Side Street Stop Controlled*	EB	1	-	11	12	-	-	6 - A	6 - A	2 - A	-	25	50	1359	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	12	418	-	430	8 - A	0 - A	-	1 - A		150	25	50	-	-	-	-	-	-
	SB	-	745	5	750	-	2 - A	2 - A	2 - A		-	-	-	-	-	-	-	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	18	19	6 - A	-	5 - A	6 - A	1 - A	-	25	50	-	-	-	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	10	450	-	460	6 - A	2 - A	-	3 - A		250	25	50	-	-	-	-	-	-
	SB	-	731	2	733	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	201	1	451	653	57 - E	53 - D	30 - C	39 - D	22 - C	-	175	300	3981	25	175	250	200	400
	WB	1	2	-	3	48 - D	80 - F	-	64 - E		-	25	25	234	25	25	-	25	25
	NB	349	257	0	606	25 - C	7 - A	-	18 - B		200	150	325	839	50	250	-	-	-
	SB	-	469	298	767	-	18 - B	4 - A	13 - B		-	-	-	936	150	400	325	50	100
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	2 - A	-	-	-	-	-	-	-	-	-
	WB	3	-	7	10	14 - B	-	4 - A	7 - A		-	25	50	-	-	-	-	25	50
	NB	-	585	3	588	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-	-
	SB	3	917	-	920	4 - A	2 - A	-	3 - A		-	25	25	839	25	25	-	-	-
TH 61 at 140th St N *Signalized*	EB	82	4	30	116	64 - E	58 - E	9 - A	48 - D	12 - B	-	75	175	2348	75	175	250	25	75
	WB	71	12	160	243	64 - E	70 - E	7 - A	27 - C		-	75	175	1290	75	175	575	50	100
	NB	21	353	21	395	11 - B	5 - A	1 - A	6 - A		160	25	50	1442	50	125	325	25	25
	SB	107	690	114	911	8 - A	6 - A	1 - A	6 - A		325	50	100	672	100	250	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-	-
	WB	25	-	36	61	12 - B	-	5 - A	8 - A		-	50	75	-	-	-	-	50	75
	NB	-	360	8	368	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-	-
	SB	20	759	-	779	4 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	2 - A	-	-	-	-	-	-	-	-	-
	WB	9	-	4	13	13 - B	-	3 - A	10 - B		-	25	50	-	-	-	-	25	50
	NB	-	361	4	365	-	3 - A	3 - A	3 - A		-	-	-	-	-	-	-	-	-
	SB	3	776	-	779	3 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	14	7	107	128	68 - E	71 - E	16 - B	25 - C	14 - B	275	25	75	1917	25	75	150	50	150
	WB	91	18	54	163	70 - E	66 - E	5 - A	48 - D		250	100	175	2941	25	75	175	25	75
	NB	79	301	27	407	15 - B	6 - A	2 - A	8 - A		250	50	100	2575	50	150	250	25	25
	SB	33	726	35	794	8 - A	9 - A	3 - A	9 - A		275	25	50	2061	100	300	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	3	7	17	17 - C	15 - C	9 - A	14 - B	6 - A	-	25	50	988	25	50	-	25	50
	WB	51	1	8	60	21 - C	-	7 - A	19 - C		-	50	100	1765	50	100	-	50	100
	NB	1	389	24	414	-	4 - A	4 - A	4 - A		-	25	50	2606	25	50	-	-	-
	SB	10	913	6	929	7 - A	6 - A	6 - A	7 - A		-	25	75	2575	25	75	-	-	-
TH 61 at 120th St N *Signalized*	EB	7	22	59	88	76 - E	78 - E	23 - C	39 - D	23 - C	-	25	100	2156	25	100	125	50	100
	WB	118	11	79	208	80 - F	98 - F	13 - B	55 - E		-	150	325	3292	150	325	150	50	175
	NB	20	316	42	378	76 - E	11 - B	2 - A	14 - B		300	25	100	4053	75	175	300	25	25
	SB	69	916	6	991	78 - E	14 - B	5 - A	19 - B		250	75	175	2606	175	450	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Existing Condition

Intersection	Approach	PM Peak Hour																	
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)								
		Demand Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through			Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Link Length	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	1	6	1	8	14 - B	13 - B	5 - A	13 - B	3 - A	-	25	50	984	25	50	-	25	50
	WB	2	2	-	4	13 - B	14 - B	-	14 - B		-	25	50	1624	25	50	-	25	50
	NB	1	949	1	951	4 - A	3 - A	-	4 - A		-	0	25	2613	0	25	-	0	25
	SB	-	360	2	362	-	4 - A	0 - A	4 - A		-	-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	91	101	15	207	7 - A	7 - A	7 - A	7 - A	50 - F	-	-	25	2839	-	25	-	-	25
	WB	63	62	92	217	16 - C	16 - C	16 - C	16 - C		-	-	75	3150	-	75	-	-	75
	NB	33	772	247	1052	80 - F	80 - F	80 - F	80 - F		-	-	725	2581	-	725	-	-	725
	SB	49	294	25	368	7 - A	7 - A	7 - A	7 - A		-	-	50	2613	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	5	4	5	14	86 - F	26 - D	12 - B	48 - E	12 - B	-	25	75	2315	25	75	-	25	75
	WB	7	1	10	18	62 - F	18 - C	52 - F	55 - F		-	25	100	3503	25	100	-	25	100
	NB	6	1013	9	1028	6 - A	13 - B	5 - A	13 - B		-	50	525	3664	50	525	250	25	200
	SB	11	351	2	364	16 - C	4 - A	1 - A	5 - A		-	25	150	2581	25	150	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	36	-	91	127	5 - A	-	5 - A	5 - A	18 - C	-	-	25	-	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	78	1027	-	1105	24 - C	24 - C	-	24 - C		200	-	350	200	-	350	200	-	350
	SB	-	333	28	361	-	6 - A	6 - A	6 - A		1150	-	25	1150	-	25	1150	-	25
TH 61 at 152nd St N *Signalized*	EB	1	6	1	8	113 - F	94 - F	5 - A	83 - F	4 - A	-	25	25	961	25	50	-	25	50
	WB	2	2	-	4	76 - E	68 - E	-	70 - E		-	25	25	959	25	25	-	25	25
	NB	4	1109	4	1117	7 - A	4 - A	3 - A	5 - A		250	25	50	1545	25	175	-	-	-
	SB	-	456	2	458	-	2 - A	1 - A	2 - A		-	-	-	2807	25	50	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	6	1	43	50	32 - D	31 - D	5 - A	9 - A	4 - A	-	25	75	1225	25	75	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	25	1060	1	1086	6 - A	4 - A	3 - A	5 - A		-	25	175	640	25	175	-	25	175
	SB	1	472	17	490	2 - A	2 - A	2 - A	2 - A		-	0	25	1545	0	25	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	8 - A	-	-	-	-	-	-	-	-	-
	WB	35	-	42	77	84 - F	-	44 - E	64 - F		-	75	175	-	-	-	-	75	175
	NB	-	1060	31	1091	-	4 - A	2 - A	4 - A		-	-	-	379	25	25	-	25	25
	SB	38	470	-	508	21 - C	7 - A	-	8 - A		75	100	375	640	100	375	-	-	-
TH 61 at 147th St N *Signalized*	EB	36	9	40	85	65 - E	64 - E	18 - B	42 - D	17 - B	135	50	125	981	50	100	-	50	100
	WB	114	7	25	146	85 - F	54 - D	32 - C	75 - E		175	125	225	1710	50	175	-	50	175
	NB	35	1031	196	1262	10 - B	12 - B	5 - A	11 - B		275	25	125	920	225	550	250	50	375
	SB	35	452	29	516	28 - C	10 - B	2 - A	11 - B		250	50	150	379	100	300	250	25	100
TH 61 at 146th St N *Side Street Stop Controlled*	EB	6	-	29	35	44 - E	-	28 - D	31 - D	7 - A	-	50	100	1359	50	100	-	50	100
	WB	1	-	-	1	71 - F	-	-	71 - F		-	25	25	529	25	25	-	25	25
	NB	20	1227	2	1249	6 - A	1 - A	0 - A	2 - A		150	25	50	-	-	-	-	-	-
	SB	2	611	7	620	8 - A	18 - C	12 - B	18 - C		200	25	25	920	100	225	200	25	75
TH 61 at 145th St N *Side Street Stop Controlled*	EB	0	-	26	26	-	-	39 - E	39 - E	6 - A	-	25	75	-	-	-	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-	-
	NB	16	1255	-	1271	10 - B	3 - A	-	4 - A		250	25	50	-	-	-	-	-	-
	SB	-	626	0	626	-	8 - A	-	8 - A		-	-	-	311	50	200	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	480	-	533	1013	92 - F	-	140 - F	117 - F	72 - E	-	625	1250	3981	500	1625	250	300	450
	WB	3	2	4	9	109 - F	88 - F	10 - B	52 - D		-	25	25	234	25	25	-	25	25
	NB	487	779	6	1272	54 - D	30 - C	12 - B	40 - D		200	325	400	839	375	775	200	25	100
	SB	3	403	279	685	39 - D	98 - F	23 - C	68 - E		325	25	200	936	425	850	325	175	450
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	22 - C	-	-	-	-	-	-	-	-	-
	WB	-	-	17	17	-	-	38 - E	38 - E		-	25	75	-	-	-	-	25	75
	NB	-	1248	6	1254	-	6 - A	4 - A	6 - A		-	-	-	672	25	75	-	25	75
	SB	30	915	-	945	73 - F	42 - E	-	44 - E		-	400	875	839	400	875	-	-	-
TH 61 at 140th St N *Signalized*	EB	188	17	38	243	108 - F	116 - F	13 - B	94 - F	38 - D	-	250	475	2348	250	475	250	50	225
	WB	73	15	180	268	56 - E	49 - D	34 - C	41 - D		-	75	175	1290	75	175	575	125	225
	NB	30	898	85	1013	42 - D	38 - D	11 - B	36 - D		160	50	275	1442	400	850	325	75	450
	SB	205	596	103	904	67 - E	15 - B	4 - A	26 - C		325	175	375	672	175	425	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-	-
	WB	9	-	24	33	25 - D	-	12 - B	15 - C		-	25	75	-	-	-	-	25	75
	NB	-	952	15	967	-	4 - A	2 - A	4 - A		-	-	-	-	-	-	-	-	-
	SB	34	650	-	684	14 - B	4 - A	-	5 - A		150	25	75	-	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-	-
	WB	5	-	4	9	20 - C	-	8 - A	14 - B		-	25	50	-	-	-	-	25	50
	NB	-	959	20	979	-	4 - A	3 - A	4 - A		-	-	-	-	-	-	-	-	-
	SB	8	680	-	688	6 - A	2 - A	-	3 - A		175	25	50	-	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	40	16	128	184	64 - E	68 - E	14 - B	30 - C	13 - B	275	50	150	1917	25	100	150	75	125
	WB	68	7	47	122	66 - E	60 - E	14 - B	46 - D		250	75	150	2941	25	75	175	25	75
	NB	83	881	80	1044	13 - B	9 - A	4 - A	9 - A		250	50	75	2575	75	250	250	25	50
	SB	72	593	16	681	21 - C	8 - A	3 - A	10 - B		275	50	75	2061	75	175	325	0	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	8	2	6	16	46 - E	33 - D	10 - B	27 - D	9 - A	-	25	50	988	25	50	-	25	50
	WB	32	1	3	36	53 - F	68 - F	40 - E	53 - F		-	50	125	1765	50	125	-	50	125
	NB	3	1093	44	1140	14 - B	9 - A	8 - A	9 - A		-	25	50	2606	25	50	-	-	-
	SB	5	743	6	754	12 - B	5 - A	5 - A	6 - A		-	25	150	2575	25	150	-	-	-
TH 61 at 120th St N *Signalized*	EB	14	23	48	85	73 - E	78 - E	15 - B	41 - D	30 - C	-	50	125	2156	50	125	125	25	100
	WB	103	19	114	236	76 - E	79 - E	37 - D	57 - E		-	125	275	3292	125	275	150	75	200
	NB	56	920	92	1068	72 - E	29 - C	11 - B	30 - C		300	75	225	4053	300	725	300	25	50
	SB	86	687	17	790	87 - F	14 - B	4 - A	22 - C		250	75	200	2606	150	300	350	25	25

Appendix C – Public Engagement Summary

Washington County

Highway 61 Visioning Study
Open House Summary

ABOUT 110 ATTENDEES

MAJORITY LIVE LESS THAN A QUARTER MILE OF AREA

109 ONLINE SURVEY RESPONSES

INTERACTIVE INPUTiD MAP

OPEN HOUSE OVERVIEW

The April 5 open house did not include a formal presentation. Project representatives were present, along with large displays highlighting traffic patterns, existing conditions and future land use projections. Attendees made notes and comments on the study area map, shared community characteristics, and wrote corridor and roadway improvement ideas on display boards. Comments were also collected on printed comment cards. The open house was promoted on Facebook, Nextdoor, Twitter, the project website and 245 mailers were sent via USPS.

ONLINE ENGAGEMENT

Washington County created a project website and an online story map. Both sites shared project goals, existing conditions and promoted public involvement opportunities. Two social media posts promoted the open house and directed users to the project website to review project material. Posts made to Facebook received the most traffic, reaching nearly 18,000 users.

An interactive comment map (INPUTiD) was launched, allowing users to identify concerns, make suggestions and post general comments.

Following the open house, an online public survey was available for two weeks. Survey participants (109) shared their travel habits, described the community, and commented on the look, feel and function of the corridor.

COMMON THEMES AND TAKEAWAYS

Common themes and takeaways from the online survey, open house feedback and interactive map include:

- **PEDESTRIAN AND BICYCLE SAFETY:** Improved pedestrian and bicycle facilities, sand clearly marked crosswalks for increased safety.
- **REDUCED SPEED LIMIT:** Slower traffic speeds are desired to make crossing the highway easier and minimize road noise.
- **LACK OF TURN LANES:** Turning on and off Hwy 61 is a safety concern and disrupts the flow of traffic.
- Hugo is described as a safe and growing community with a "small town feel." Parks and natural resources are key features in the area.
- Motor vehicles are the most common form of travel along the corridor, followed by recreational use (walking, biking and rolling).

COMMUNITY DESIRES

Survey participants were asked to share key words or phrases describing how they would like to see the Hwy 61 corridor look, feel and function in the future.

crosswalks
traffic control
safe highway crossings
traffic flow
growing community
safe
multilane
trails
medians
turn lanes
walkability
walking paths
bicycle safety
stop lights
accessible
left turns
roundabouts
bike trails
safety
sidewalks
slower speeds
small town feel
pedestrians

Washington County | Minnesota Department of Transportation | City of Hugo | Bolton & Menk

Final Report Appendix C – Existing and Future Traffic Conditions Memorandum

Highway 61 Visioning and Jurisdictional Transfer Study

Existing and Future Traffic Conditions Memorandum

Washington County

Contents

Introduction 3
Existing Traffic Conditions 3
- Turning Movement Counts 3
- Existing Traffic Operations 4
- Traffic Safety and Crash History 7
- Pedestrian/Bicycle Facilities and Needs 13
- Transit Facilities and Needs 14

Future Traffic Conditions 16
- Traffic Projections 16
- Future No Build Traffic Operations 19

Sensitivity Analysis 23
- Potential Future I-35E Interchange 23
- Potential Development 24

Planning Level Capacity Analysis 24
Turn Lane Considerations 28
- Unsignalized Intersections 28
- Signalized Intersections 29

Detailed Peak Hour Operational Analysis 32

Appendices

Appendix A – Traffic Counts
Appendix B – Traffic Operations
Appendix C – Crash History

Introduction

A long-term vision is being developed for Highway 61 as a part of the Highway 61 Visioning and Jurisdictional Transfer Study. Washington County is partnering with the City of Hugo to define a vision for Highway 61 within the city limits to support City and County priorities while ensuring safety, mobility, economic vitality, and resiliency with consideration to all modes of travel.

The purpose of this memorandum is to document existing and future traffic conditions along Highway 61 within the study area.

Existing Traffic Conditions

Turning Movement Counts

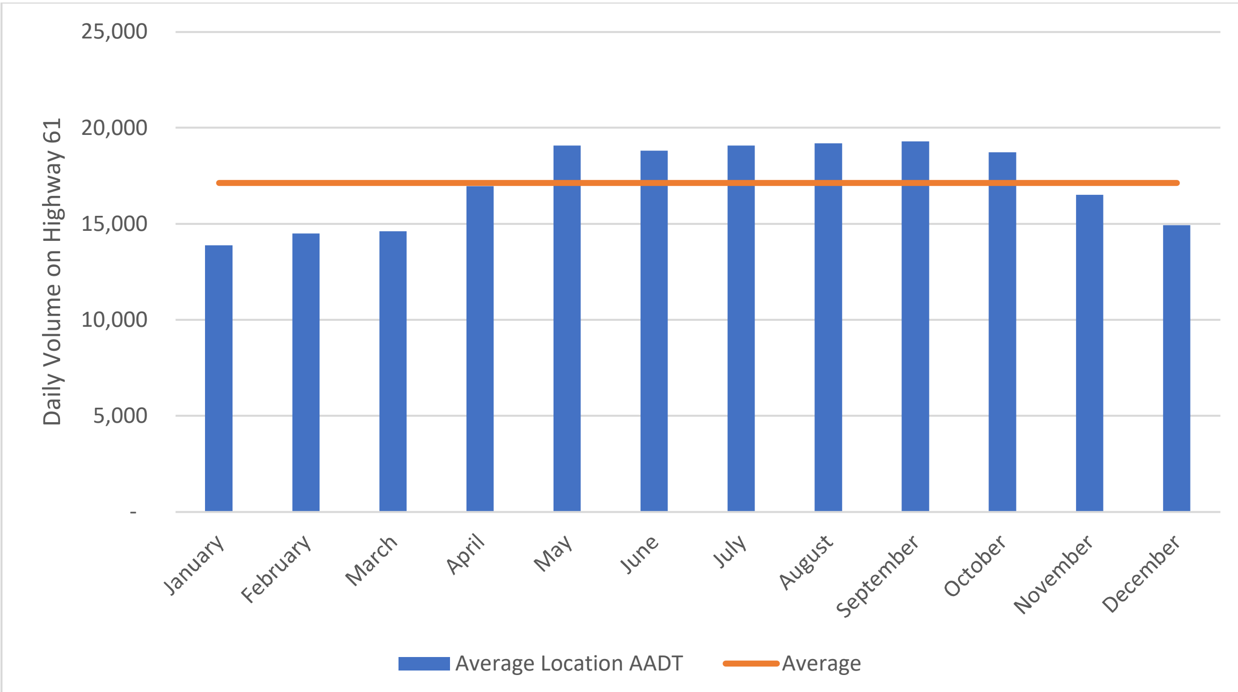
Turning movement count data was collected at the following intersections:

- 175th St N at Highway 61
- 170th St N at Highway 61
- 165th St N at Highway 61
- 159th St N at Highway 61
- 152nd St N at Highway 61
- 150th St N at Highway 61
- 148th St N at Highway 61
- 147th St N at Highway 61
- 146th St N at Highway 61
- 145th St N at Highway 61
- CSAH 8 (Frenchman Rd) at Highway 61
- CSAH 8 (141st St N) at Highway 61
- 140th St N at Highway 61
- 137th St N at Highway 61
- 134th St N at Highway 61
- 130th St N at Highway 61
- 125th St N at Highway 61
- 120th St N at Highway 61

Data was collected at all project intersections in June 2022 when school was in session. Additionally, the intersections of Highway 61 at 152nd Street N, 147th Street N, and Frenchman Road were collected again in January 2023 (also when school was in session) to account for potential changes in traffic patterns at 147th Street N and Frenchman Road related to the new school, North Star Elementary School, which opened in the Fall of 2022 and the extension of 147th St N to Oneka Pkwy N west of Highway 61. The turning movement count data included vehicular traffic, pedestrians and bicycles using the intersection crosswalks, and in road bicyclists. Figures are included in ***Appendix A*** which show the counts by intersection of each traffic mode.

The counts from January 2023 were found to be substantially lower than the counts from June 2022. A StreetLight analysis was completed to compare traffic volumes by month. Volumes in 2019 were compared along Highway 61 at Frenchman Road. 2019 volumes were analyzed to visualize trends for one overall calendar year. Data was available for 2020 and 2021, however these years were not analyzed since traffic patterns and volumes were impacted during these years due to the pandemic. Data for all months of 2022 was not available at the time of the analysis. The results of the StreetLight analysis are shown in ***Exhibit 1.***

Exhibit 1. Average Daily 2019 Volumes by Month on Highway 61 at Frenchman Road



The StreetLight analysis indicated that volumes in June are approximately 10% higher than the average daily volume throughout the year. Comparing June to January, volumes in June are approximately 35% higher than in January. This helps explain the lower count data when comparing the field collected January counts to the June counts. The StreetLight analysis also shows how volumes in June are in line with volumes in May through October and how volumes during May through October are higher than in November through March.

For the operational analysis, the January 2023 counts were increased proportionally to match the June 2022 counts so that volumes were consistent along the corridor.

Existing Traffic Operations

An existing level of service (LOS) analysis of the peak hours was completed in Synchro/SimTraffic Version 11. All signalized and stop controlled intersections were analyzed in SimTraffic and the two roundabouts were analyzed in Synchro using the Highway Capacity Manual (HCM) 6th Edition methodology. The LOS results are based on the average delay per vehicle as calculated by the HCM 6th Edition, which defines the level of service, based on control delay. Control delay is the delay experienced by vehicles slowing down as they are approaching the intersection, the wait time at the intersection, and the time for the vehicle to speed up through the intersection and enter into the traffic stream. The average intersection control delay is a volume weighted average of delay experienced by all motorists entering the intersection on all intersection approaches. Intersections and each intersection approach are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS A through D is generally perceived to be acceptable to drivers. LOS E indicates that an intersection is operating at, or very near, its capacity and that drivers experience considerable delays. LOS F indicates an intersection where demand exceeds capacity and drivers experience substantial delays.

The existing AM and PM peak hour traffic volumes were analyzed with the current geometry and signal timing. Operational results are summarized in ***Table 1***.

Table 1. Existing (2022) Operational Analysis

Intersection	Peak Hour	Intersection (Delay[1] - LOS)	Approach (Delay[1] - LOS)			
			EB	WB	NB	SB
TH 61 at Forest Rd/175th St N	AM	4 - A	5 - A	18 - C	2 - A	5 - A
Side Street Stop Controlled	PM	3 - A	13 - B	14 - B	4 - A	4 - A
TH 61 at 170th St N	AM	7 - A	6 - A	7 - A	5 - A	7 - A
Single Lane Roundabout	PM	75 - F	7 - A	16 - C	80 - F	7 - A
TH 61 at 165th St N	AM	3 - A	5 - A	8 - A	5 - A	3 - A
Side Street Stop Controlled	PM	12 - B	48 - E	55 - F	13 - B	5 - A
TH 61 at 159th St N	AM	6 - A	6 - A	-	5 - A	7 - A
Single Lane Roundabout	PM	18 - C	5 - A	-	24 - C	6 - A
TH 61 at 152nd St N	AM	2 - A	4 - A	111 - F	2 - A	3 - A
Signalized	PM	4 - A	83 - F	70 - E	5 - A	2 - A
TH 61 at 150th St N	AM	2 - A	7 - A	7 - A	2 - A	2 - A
Side Street Stop Controlled	PM	4 - A	9 - A	-	5 - A	2 - A
TH 61 at 148th St N	AM	3 - A	-	17 - C	2 - A	3 - A
Side Street Stop Controlled	PM	8 - A	-	64 - F	4 - A	8 - A
TH 61 at 147th St N	AM	17 - B	31 - C	58 - E	4 - A	6 - A
Signalized	PM	17 - B	42 - D	75 - E	11 - B	11 - B
TH 61 at 146th St N	AM	2 - A	6 - A	-	1 - A	2 - A
Side Street Stop Controlled	PM	7 - A	31 - D	71 - F	2 - A	18 - C
TH 61 at 145th St N	AM	1 - A	6 - A	-	3 - A	1 - A
Side Street Stop Controlled	PM	6 - A	39 - E	-	4 - A	8 - A
TH 61 at Frenchman Rd/Mueller Dr	AM	22 - C	39 - D	64 - E	18 - B	13 - B
Signalized	PM	72 - E	117 - F	52 - D	40 - D	68 - E
TH 61 at 141st St N	AM	2 - A	-	7 - A	2 - A	3 - A
Side Street Stop Controlled	PM	22 - C	-	38 - E	6 - A	44 - E
TH 61 at 140th St N	AM	12 - B	48 - D	27 - C	6 - A	6 - A
Signalized	PM	38 - D	94 - F	41 - D	36 - D	26 - C
TH 61 at 137th St N	AM	3 - A	-	8 - A	2 - A	4 - A
Side Street Stop Controlled	PM	4 - A	-	15 - C	4 - A	5 - A
TH 61 at 134th St N	AM	2 - A	-	10 - B	3 - A	3 - A
Side Street Stop Controlled	PM	4 - A	-	14 - B	4 - A	3 - A
TH 61 at 130th St N	AM	14 - B	25 - C	48 - D	8 - A	9 - A
Signalized	PM	13 - B	30 - C	46 - D	9 - A	10 - B
TH 61 at 125th St N	AM	6 - A	14 - B	19 - C	4 - A	7 - A
Side Street Stop Controlled	PM	9 - A	27 - D	53 - F	9 - A	6 - A
TH 61 at 120th St N	AM	23 - C	39 - D	55 - E	14 - B	19 - B
Signalized	PM	30 - C	41 - D	57 - E	30 - C	22 - C

1. Delay in seconds per vehicle

Existing AM Peak Hour

All intersections operate with overall LOS C or better during the AM peak hour.

The following intersections have approaches that operate with LOS E:

- 147th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS F:

- 152nd St N at Highway 61 (westbound approach)

Existing PM Peak Hour

All intersections operate with overall LOS D or better during the PM peak hour except the signal at Frenchman Road and Highway 61, which operates with LOS E and the roundabout at 170th St N and Highway 61 which operates with LOS F. The eastbound approach fails at the signal at Frenchman Road and Highway 61 with vehicles waiting on average for about two minutes. The average eastbound queue extends 500 feet and the maximum eastbound queue extends 1,625 feet. Additionally, the southbound through movement fails with vehicles waiting on average for about 1.5 minutes at the signal. The 170th St N roundabout shows failing LOS due to backups on the northbound approach. Video footage was reviewed from when the traffic volume data was collected in June 2022. The video footage shows the northbound approach backing up to about halfway between the intersections of 170th St N and 165th St N. Although, the operational analysis shows the roundabout operates with LOS F, the queue is a moving queue at a roundabout, not a stopped queue like at a signalized intersection, so drivers likely perceive this as more acceptable type of delay as they are constantly moving. Additionally, since the volume analysis shows that volumes are highest between May and October, it is likely that longer delays and queuing are only issues during these higher travel months.

The following intersections have approaches that operate with LOS E:

- 165th St N at Highway 61 (eastbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 147th St N at Highway 61 (westbound approach)
- 145th St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (southbound approach)
- 141st St N at Highway 61 (westbound and southbound approaches)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS F:

- 170th St N at Highway 61 (northbound approach)
- 165th St N at Highway 61 (westbound approach)
- 152nd St N at Highway 61 (eastbound approach)
- 148th St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (eastbound approach)
- 140th St N at Highway 61 (eastbound approach)
- 125th St N at Highway 61 (westbound approach)

Several of the approaches that operate with LOS E or F are signalized intersections. The cycle length of the signals in the project area is 160 seconds during both AM and PM peaks with most of the time for the mainline Highway 61 phases. Because of this, the side street delay is longer. The full operational results showing the individual movement delay and queue results are shown in ***Appendix B****.* Also included in ***Appendix B*** are figures which illustrate the operations along the corridor.

Traffic Safety and Crash History

Fatal Crash Analysis

A ten-year crash analysis (2013-2022) was completed for fatal crashes throughout the project area. Three fatal crashes occurred along Highway 61 within the project limits in the last ten years. Two of the fatal crashes occurred at the intersection of 159th St N at Highway 61 and the other fatal crash occurred along Highway 61 south of 130th St N. The intersection of 159th St N at Highway 61 was reconstructed this year (2023) to a single-lane roundabout. More details on the crashes are listed below:

159th St N at Highway 61:

- In June of 2015 there was a head on crash involving northbound and southbound vehicles along Highway 61. The weather was not listed as a factor in the crash.
- In September of 2021 there was a rear end crash involving two northbound vehicles along Highway 61. One vehicle was stopped waiting to turn left onto 159th St N which was struck by the second vehicle. There is a bypass lane at this location that was not used. The weather was not listed as a factor in the crash.

Highway 61 south of 130th St N:

- In January 2015 there was a head on crash involving northbound and southbound vehicles along Highway 61. The weather was listed as a factor for this crash as temperatures were sub-zero and there were areas of glare ice on Highway 61.

Pedestrian and Bicycle Crash Analysis

A ten-year crash analysis (2013-2022) was also completed for pedestrian and bicycle crashes throughout the project area. There were two crashes involving a pedestrian and five crashes involving a bicycle in the last ten years.

Pedestrian Crashes:

- In January 2018 an officer was hit when on the scene of a vehicle-to-vehicle crash along Highway 61 just south of 130th St N. The crash resulted in possible injuries.
- In October 2018 a pedestrian was hit while crossing the road midblock near 145th St N. The crash resulted in minor injuries.

Bicycle Crashes:

- In May 2013 and June 2016 vehicle-bicyclist crashes occurred at the intersection of 159th St N and Highway 61. Both crashes noted that the bicyclists struck the side of vehicles waiting to turn onto Highway 61 from 159th St N. Both crashes resulted in minor injuries.
- In June 2019 a bicyclist was hit by a northbound left turning vehicle while crossing the west leg of the intersection at Frenchman Rd and Highway 61. The crash resulted in minor injuries.

- In June 2013 a bicyclist was hit by a southbound vehicle along Highway 61 that was noted to be swerving in and out of the travel lane. The crash occurred near 130th St N. The crash resulted in minor injuries.
- In August 2022 a bicyclist was hit by a vehicle turning from eastbound 130th St N onto Highway 61. The bicyclist was traveling along southbound Highway 61 on the shoulder. The eastbound right turning vehicle failed to yield to the cyclist. The crash resulted in minor injuries.

Intersection Crash Analysis

A five-year (2017-2021) crash analysis was completed for the intersections throughout the project area. Crash data was pulled from MnCMAT2. MnDOT uses a comparison of the crash rate and the critical rate when determining if there is a safety issue at an intersection. The crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside of the expected, normal range. The critical index reports the magnitude of this difference. A critical index of less than one indicates that the intersection is operating within the normal range and a critical index of greater than one indicates that the intersection is operating outside the normal range. ***Table 2*** provides a crash summary for each intersection.

Table 2. Intersection Crash Rate Summary

Intersection	Total Crashes	Observed Intersection Crash Rate	Statewide Average Crash Rate	Critical Index
175th St N at Highway 61	2	0.096	0.128	0.27
170th St N at Highway 61	13	0.522	0.942	0.35
165th St N at Highway 61	1	0.052	0.128	0.14
159th St N at Highway 61	10	0.501	0.128	**1.39**
152nd St N at Highway 61	0	0	0.508	0
150th St N at Highway 61	3	0.11	0.128	0.34
148th St N at Highway 61	1	0.035	0.128	0.11
147th St N at Highway 61	4	0.166	0.508	0.18
146th St N at Highway 61	0	0	0.128	0
145th St N at Highway 61	1	0.038	0.128	0.12
Frenchman Rd at Highway 61	41	0.916	0.508	**1.16**
141st St N at Highway 61	2	0.104	0.128	0.29
140th St N at Highway 61	13	0.363	0.508	0.44
137th St N at Highway 61	1	0.033	0.128	0.11
134th St N at Highway 61	1	0.035	0.128	0.11
130th St N at Highway 61	7	0.227	0.508	0.27
125th St N at Highway 61	4	0.113	0.128	0.38
120th St N at Highway 61	13	0.414	0.128	**1.34**

Table 2 shows that the intersections of 159th St N, Frenchman Rd, and 120th St N at Highway 61 have critical indices greater than one indicating that the intersections operate outside the expected, normal

range. These three intersections were further analyzed to understand the crash trends. The crash rate worksheets are included in ***Appendix C***.

159th Street N and Highway 61

The breakdown of crash severity at the intersection of 159th St N and Highway 61 is shown in ***Table 3*** and the crash type breakdown is shown in ***Table 4***.

Table 3. Crash Severity - 159th St N at Highway 61

Crash Severity	Frequency
Fatal	1
Serious Injury	0
Minor Injury	0
Possible Injury	4
Property Damage Only	5

Table 4. Crash Type - 159th St N at Highway 61

Crash Type	Frequency
Rear End	7
Right Angle	1
Sideswipe Same Direction	1
Other	1

There were ten crashes between 2017 and 2021 at the intersection of 159th St N and Highway 61. Of the ten crashes, there was one fatal crash, four possible injury crashes, and five property damage only crashes. Most of the crashes were rear end crashes, which accounted for seven of the ten crashes. There was also one right angle crash, one sideswipe same direction crash, and one crash type listed as other. The other crash involved two vehicles along southbound Highway 61. One of the vehicles made a U-turn from the shoulder and hit the other vehicle. The intersection of 159th St N at Highway 61 was reconstructed this year (2023) to a single-lane roundabout.

Frenchman Road and Highway 61

The breakdown of crash severity at the intersection of Frenchman Rd and Highway 61 is shown in ***Table 5*** and the crash type breakdown is shown in ***Table 6***.

Table 5. Crash Severity – Frenchman Rd at Highway 61

Crash Severity	Frequency
Fatal	0
Serious Injury	1
Minor Injury	3
Possible Injury	6
Property Damage Only	31

Table 6. Crash Type - Frenchman Rd at Highway 61

Crash Type	Frequency
Rear End	23
Left Turn	5
Head On	4
Sideswipe Same Direction	4
Right Angle	2
Single Vehicle Run off Road	1
Other	1
Bicycle	1

There were 41 crashes between 2017 and 2021 at the intersection of Frenchman Rd and Highway 61. Of the 41 crashes, there was one serious injury crash, three minor injury crashes, six possible injury crashes, and 31 property damage only crashes. Most of the crashes were rear end crashes which accounted for 23 of the 41 crashes. There were also five left turn crashes, four head on crashes, four sideswipe same direction crashes, two right angle crashes, one crash involving a bicyclist, one single vehicle ran off road crash, and one crash type listed as other. The other crash involved a vehicle waiting to make a northbound left onto Frenchman Blvd that had crept out into the intersection but was unable to make the turn before the light turned red. The vehicle then backed up to clear the intersection and struck the vehicle in the turn lane behind them.

120th Street N and Highway 61

The breakdown of crash severity at the intersection of 120th St N and Highway 61 is shown in ***Table 7*** and the crash type breakdown is shown in ***Table 8***.

Table 7. Crash Severity - 120th St N at Highway 61

Crash Severity	Frequency
Fatal	0
Serious Injury	0
Minor Injury	1
Possible Injury	3
Property Damage Only	9

Table 8. Crash Type - 120th St N at Highway 61

Crash Type	Frequency
Rear End	10
Single Vehicle Run Off Road	2
Right Angle	1

There were 13 crashes between 2017 and 2021 at the intersection of 120th St N and Highway 61. Of the 13 crashes, there was one minor injury crash, three possible injury crashes, and nine property damage only crashes. Most of the crashes were rear end crashes which accounted for 10 of the 13 crashes. There were also two single-vehicle run-off road crashes and one right angle crash.

Segment Crash Analysis

A five-year (2017-2021) segment crash analysis was also completed for the entire project corridor. The segment crash analysis was completed with and without crashes at the intersections included. ***Table 9*** summarizes the key crash findings along the segment.

Figure 1 summarizes the crash density of the corridor. This indicates the intersection of Frenchman Rd at Highway 61 stands out as a crash hot spot along the corridor.

With intersection crashes included, there were a total of 148 crashes within the project area. One of the crashes resulted in a fatality, one resulted in serious injury, fourteen resulted in minor injury, 35 resulted in possible injury, and 97 resulted in property damage only. The most common crash type was rear end crashes accounting for 89 of the 148 crashes. The next most common crash types were single vehicle run off road crashes and right-angle crashes with 12 crashes each.

Table 9. Segment Crash Rate Summary

Option	Total Crashes	Observed Intersection Crash Rate	Statewide Average Crash Rate	Critical Index
Segment Crash Analysis with Intersection Crashes	148	1.204	1.305	0.77
Segment Crash Analysis without Intersection Crashes	32	0.26	0.477	0.41

Without the intersection crashes included, there were a total of 32 crashes within the project area. Four of the crashes resulted in minor injury, 11 resulted in possible injury, and 17 resulted in property damage only. Rear end crashes were also the most common, accounting for 18 of the 32 crashes. ***Figure 2*** summarizes the crash analysis of the corridor.

Figure 1. Crash Density

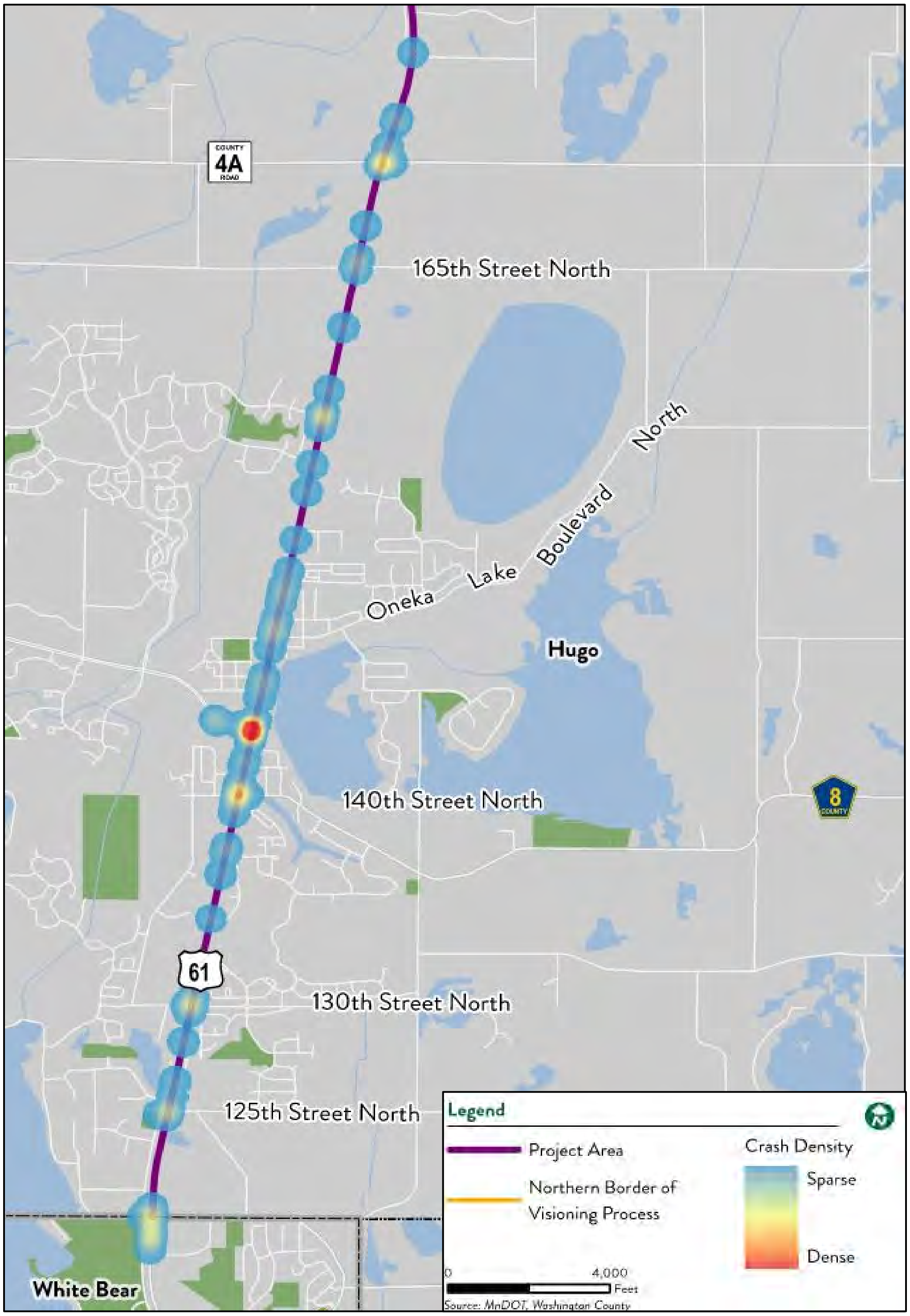
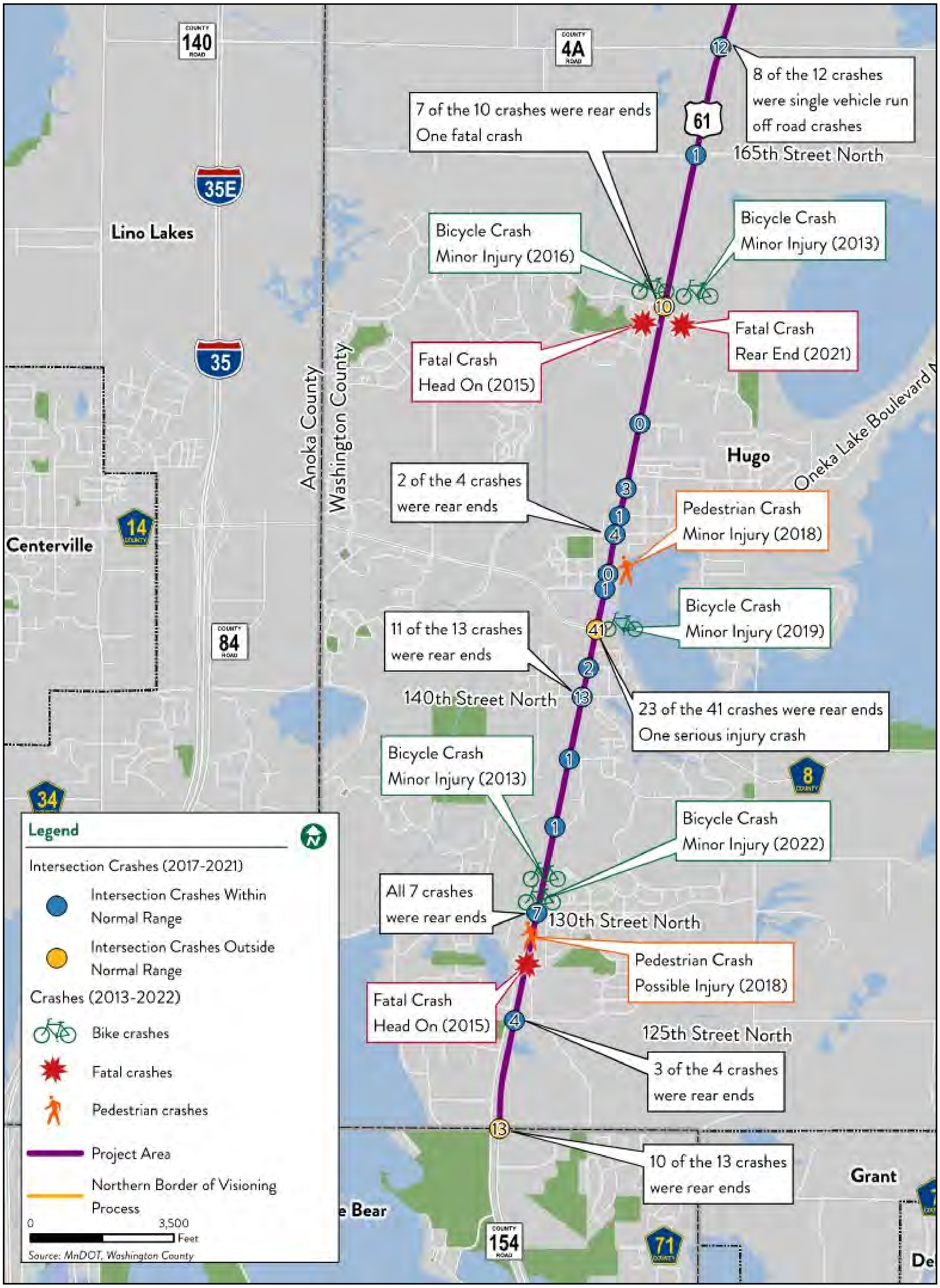


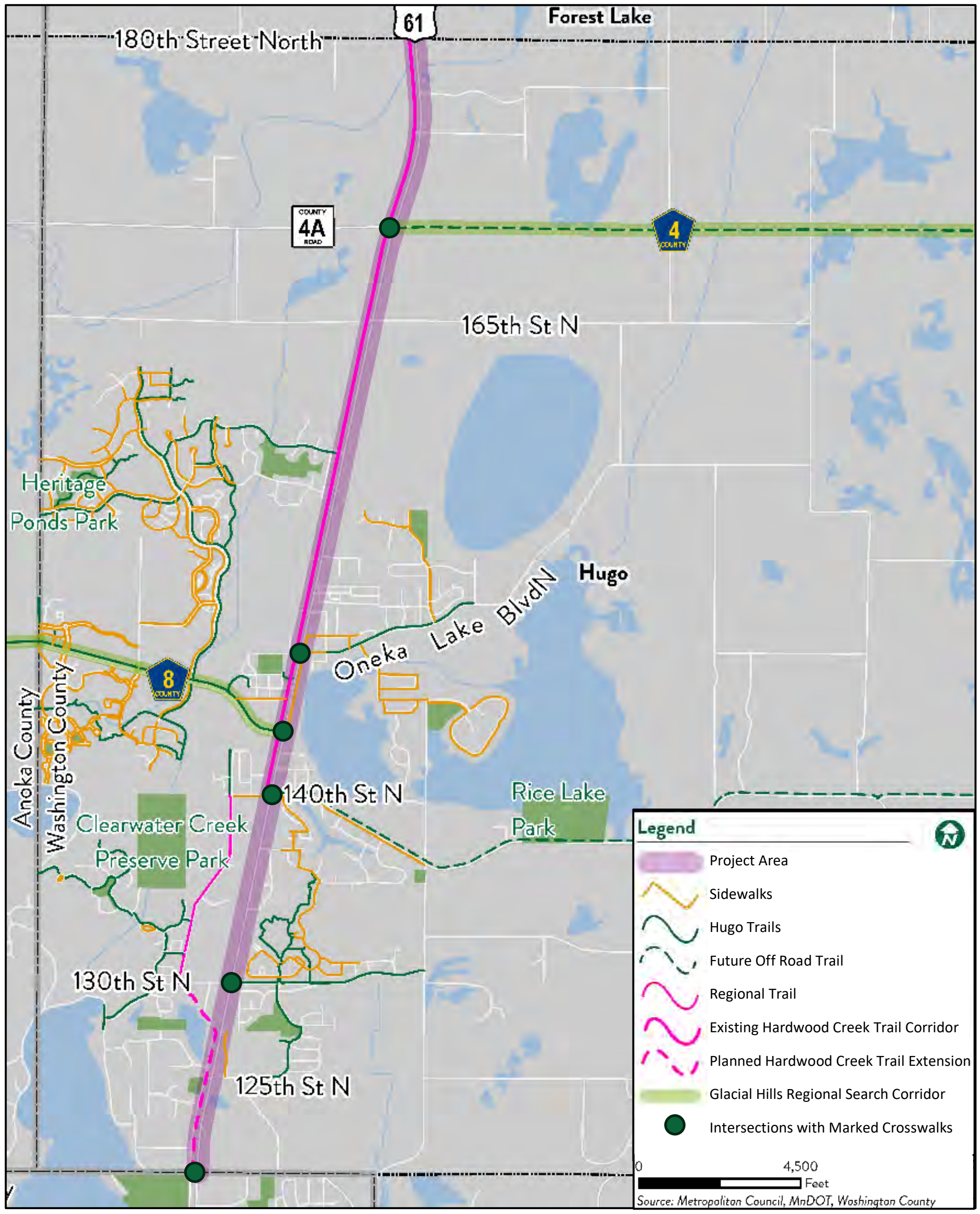
Figure 2. Crash History



Pedestrian/Bicycle Facilities and Needs

The existing and proposed bicycle and pedestrian facilities around the Highway 61 corridor are shown in ***Figure 3***. The Hardwood Creek Regional Trail – a 9.5-mile multiple-use trail, runs along the western side of Highway 61 located on a former Burlington Northern Railroad grade.

Figure 3. Pedestrian and Bicycle Facilities



The Hardwood Creek Regional Trail consists of two parallel trails, with one being paved and the other being mowed turf. The paved trail, which is not groomed in the winter, is open to biking, hiking, in-line skating, snowshoeing, and cross-country skiing. The turf trail is open to horseback riding in the summer and snowmobiling (without studs/metal traction devices) in the winter. The Hardwood Creek Trail has received several upgrades since 2015, including resurfacing, the addition of wayfinding signage and maps, and new kiosks and benches that were installed at four locations along the trail.

The trail travels through Hugo and Forest Lake, with the south terminus at 140th Street N in Hugo. The Hardwood Creek Regional Trail Master Plan shows the trail connecting to the Bruce Vento Regional Trail in south White Bear Lake, providing access to many other metro area trails. Plans are being developed to extend the trail south to 120th Street using 140th St N to Fenway Blvd where it would use an existing city trail along the west side of Fenway Blvd. At 130th St N the trail will be constructed on a new alignment south to Falcon Court. Upon connecting to Falcon Court, the trail will utilize the roadway shoulder and connect to Falcon Ave and continue south to 120th Street N.

To the north, the Hardwood Creek Trail connects to the Sunrise Prairie Trail in Chisago County, which currently extends to the City of Harris with future proposed trail connections to the Pine County line.

At the time of this plan, Washington County is concurrently developing the Glacial Hills Regional Trail Long-Range Plan which will identify an east-west connection between Lino Lakes in Anoka County, to William O'Brien State Park and Trunk Highway 95 on the eastern border of the County. The search corridor, from west to east, includes a potential alignment along CSAH 8 (Frenchman Road), utilizing the existing Hardwood Creek Trail Corridor north to CSAH 4, and following CSAH 4 east.

Pedestrian facilities, such as sidewalks, are not present throughout most of the study area. There are marked crosswalks at primary intersections along the corridor (120th Street N/County Line Road, 130th Street N, 140th Street N, Frenchman Road, 147th Street N, and 170th Street N). A segment of sidewalk runs along the east side of Highway 61 from Frenchman Road (CSAH 8) to 148th Street N.

Public engagement and data review/analysis indicated several corridor-wide issues related to pedestrian and bicycle safety. The perception is there are limited locations to safely and/or comfortably cross Highway 61. The safety analysis identified pedestrian/bicycle crashes near the intersection of TH 61 at 159th Street N, 145th/146th Street N, CSAH 8 (Frenchman Road), and 130th Street N.

Input collected during the Visioning Study engagement activities (open house meeting, survey, INPUTiD, etc.) indicated the need for increased pedestrian connectivity, especially through the Hugo downtown area (CSAH 8/140th St. to 152nd St) where sidewalk on the east side of Highway 61 extends only between Frenchman Road on the south and 148th Street N on the north. Specific desired sidewalk connections were noted from 148th St. to 152nd St. and from 140th St. to 130th St. Public comments relating to connectivity also included sidewalk condition, useable width, and ADA compliant facilities. Public comments indicated the desire for additional crossing opportunities in desirable locations and even consideration of a grade-separated option (overpass) in downtown Hugo.

Public engagement indicated the Hardwood Creek Trail corridor is an important asset for the community, but the lack of a continuous system to the south and connecting facilities to the east/west of Highway 61 are a barrier to bicycle use and potentially suppressing increased multimodal use of the corridor and throughout the community. Also, consideration for separating pedestrians and bicycles along the Hardwood Creek trail (separate walking path/bike path) is desirable to reduce conflicts.

This visioning study recommends expanding sidewalk and/or trail facilities on the east side of Highway 61 throughout the study area. Furthermore, improved crossings (markings, lighting, etc.) in the downtown area will be considered with future highway improvements and development proposals.

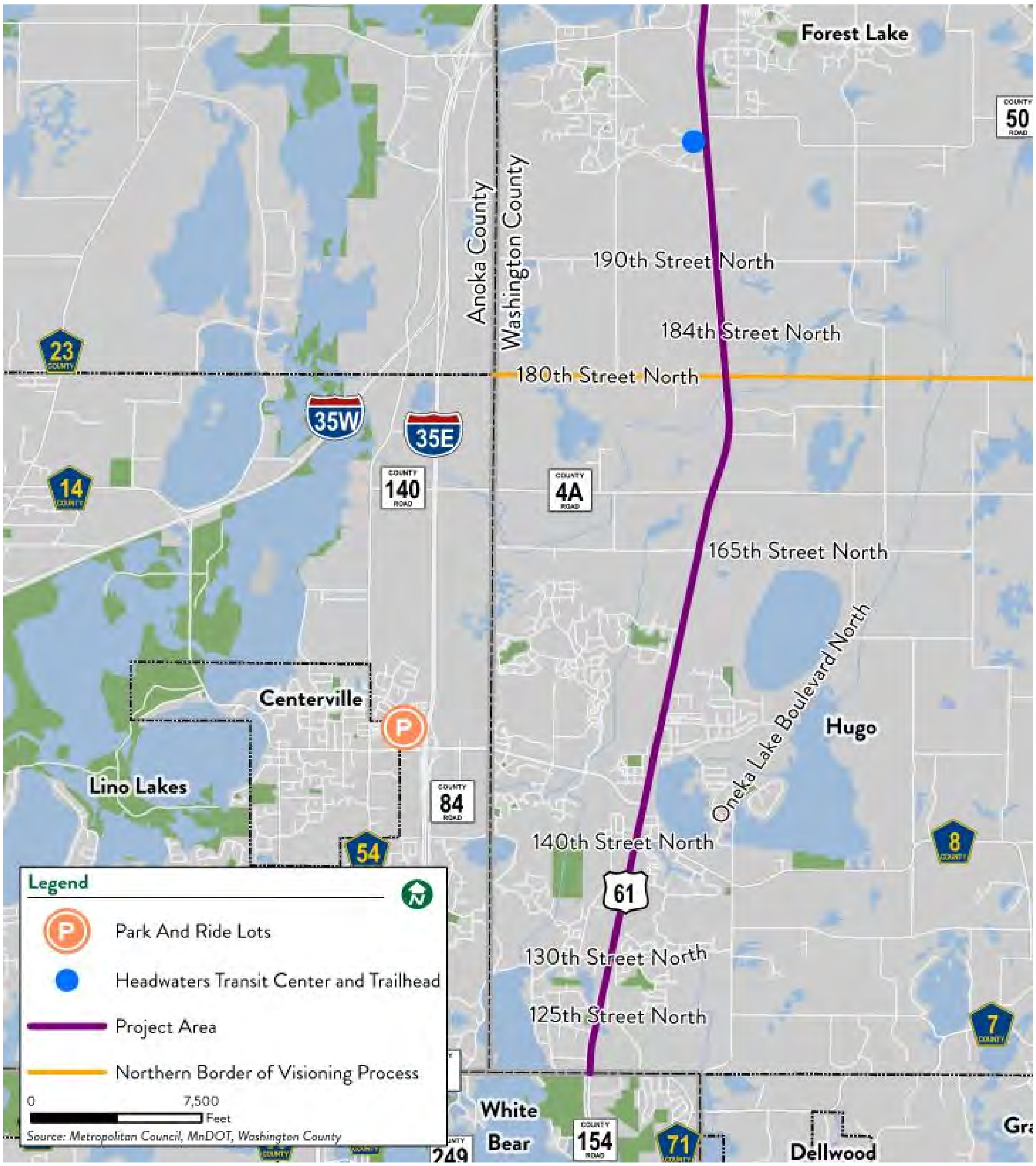
Transit Facilities and Needs

The City of Hugo is not in the Metropolitan Council Transit Capital Levy District with fixed-line transit routes served by Metro Transit. The city is within the service area for Transit Link Dial-a-Ride, a shared-ride service which must be reserved in advance.

The Headwaters Transit Center and Trailhead is located along the Highway 61 corridor, near Headwaters Parkway in Forest Lake. While Forest Lake does participate in the Transit Capital Levy, Metro Transit does not currently operate any fixed-route bus services along the Highway 61 corridor. Metro Transit Routes 288 and 275 previously served the transit center, connecting residents to downtown

Minneapolis and St. Paul. Neither route currently operates. ***Figure 4*** demonstrates the location of the Headwaters Transit Center and Trailhead as well as a nearby Metro Transit Park & Ride Lot located adjacent to I-35E in Lino Lakes.

Figure 4. Transit Facilities



Highway 61 through Washington County is part of the Rush Line Transit Corridor. The Rush Line Transit Corridor is an 80-mile transit vision extending from Downtown St. Paul in the south to Hinkley in the north. The Regional Rail Property along the west side of Highway 61 from 140th St in Hugo to the northern county line was purchased by the Washington County Regional Rail Authority in support of this vision.

A 2017 Locally Preferred Alternative (LPA) Report – the most recent transit study for the corridor – identified Bus Rapid Transit (BRT) from St. Paul to White Bear Lake with connector bus service north to Hugo and Forest Lake as the preferred transit alternative in this area. In 2021, the Metropolitan Council transitioned the BRT portion of the LPA recommendation into the future Metro Purple Line, with an identified route generally along Robert Street, Jackson Street, Phalen Boulevard, Ramsey County Regional Railroad Authority right-of-way (co-located with the Bruce Vento Regional Trail) and Highway 61.

After a 2022 resolution from the White Bear Lake City Council opposing BRT in their community, the Purple Line began a Route Modification Study (RMS) to determine an alternative end point to the line. Additionally, at the time of this study, the Purple Line project team is evaluating whether the bus could run along White Bear Avenue rather than the current alignment along the Ramsey County Regional Rail property which includes the Bruce Vento Regional Trail Corridor.

The Metropolitan Council's current Transportation Policy Plan does not show any transit investments planned for the Highway 61 corridor through Hugo and Forest Lake.

As part of the Highway 61 Visioning Study, several coordination meetings were held with Metropolitan Council staff, the cities of Hugo and Forest Lake, Washington County, and the Rush Line Task Force to revisit long-term transit planning for the Rush Line/Purple Line corridor north of White Bear Lake. Specifically, discussions focused on the future use and allocation of space of the Regional Rail Property and parallel highway right-of-way. **The conclusion of this coordination was an openness to treat the parallel tracts of land as a unified transportation corridor, allocating appropriate space for the regional trail, transit service in support of the Rush Line Transit Corridor Vision, and highway needs.**

Future Traffic Conditions

Traffic Projections

Recommended traffic forecasts were developed based on a review of travel demand model results from both the Washington County model and Metropolitan Council's regional activity-based model. Differences between future year (2040) and base year (2014/2015) model results were applied to existing (2022 and 2023) traffic count data, taking into consideration that some of that growth has already taken place between 2014/2015 and the time of this study. The average growth rate of all locations in the project area was found to be 1.5% per year. The average growth rate along TH 61 within the project limits was found to be 1.1% per year. ***Figure 5*** shows the existing and forecasted volumes for the roadways included in the travel demand models and ***Figure 6*** shows the annual growth rates.

For roadways not included in the travel demand model, the anticipated growth was determined based on growth of the nearby or adjacent roadways.

Figure 5. Existing and Forecasted Daily Volumes

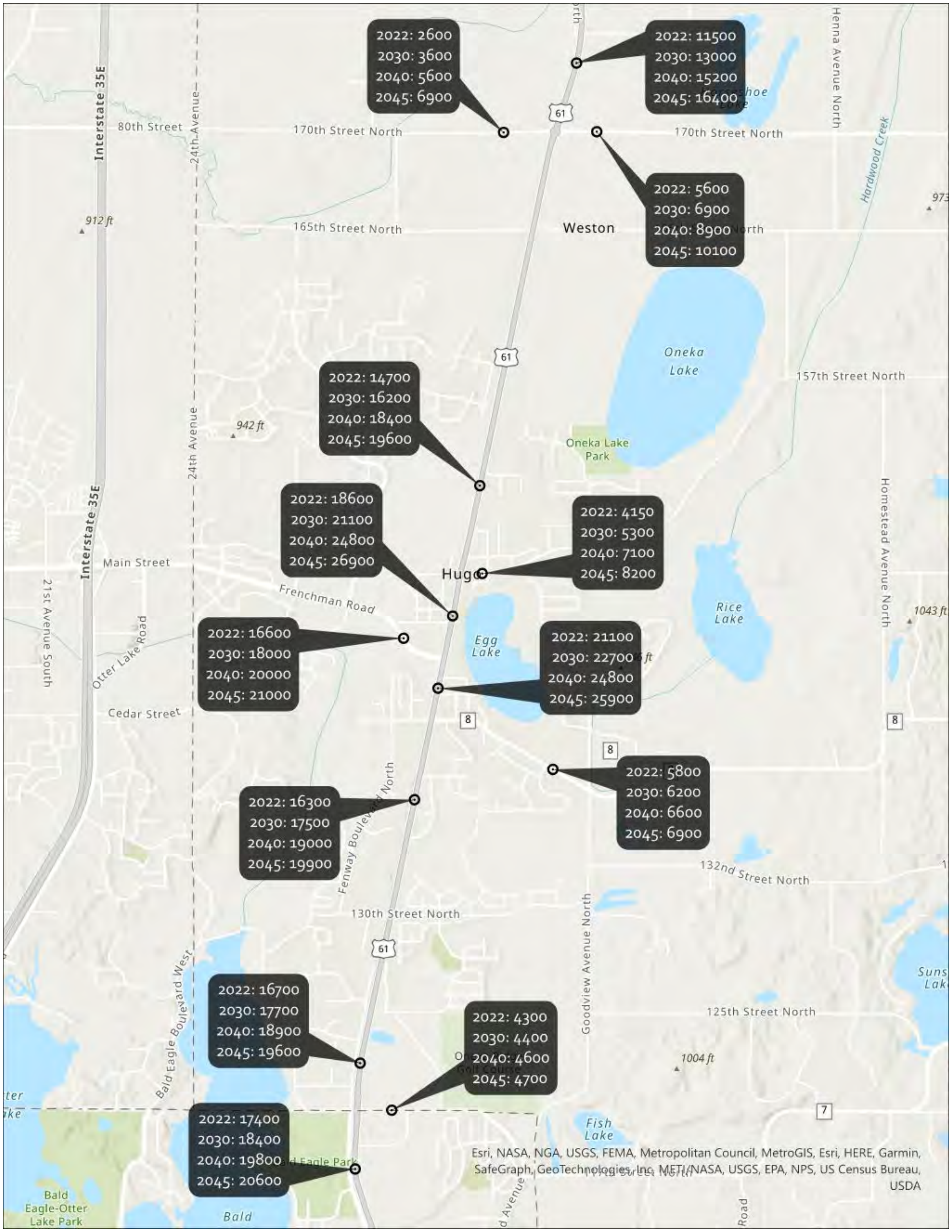
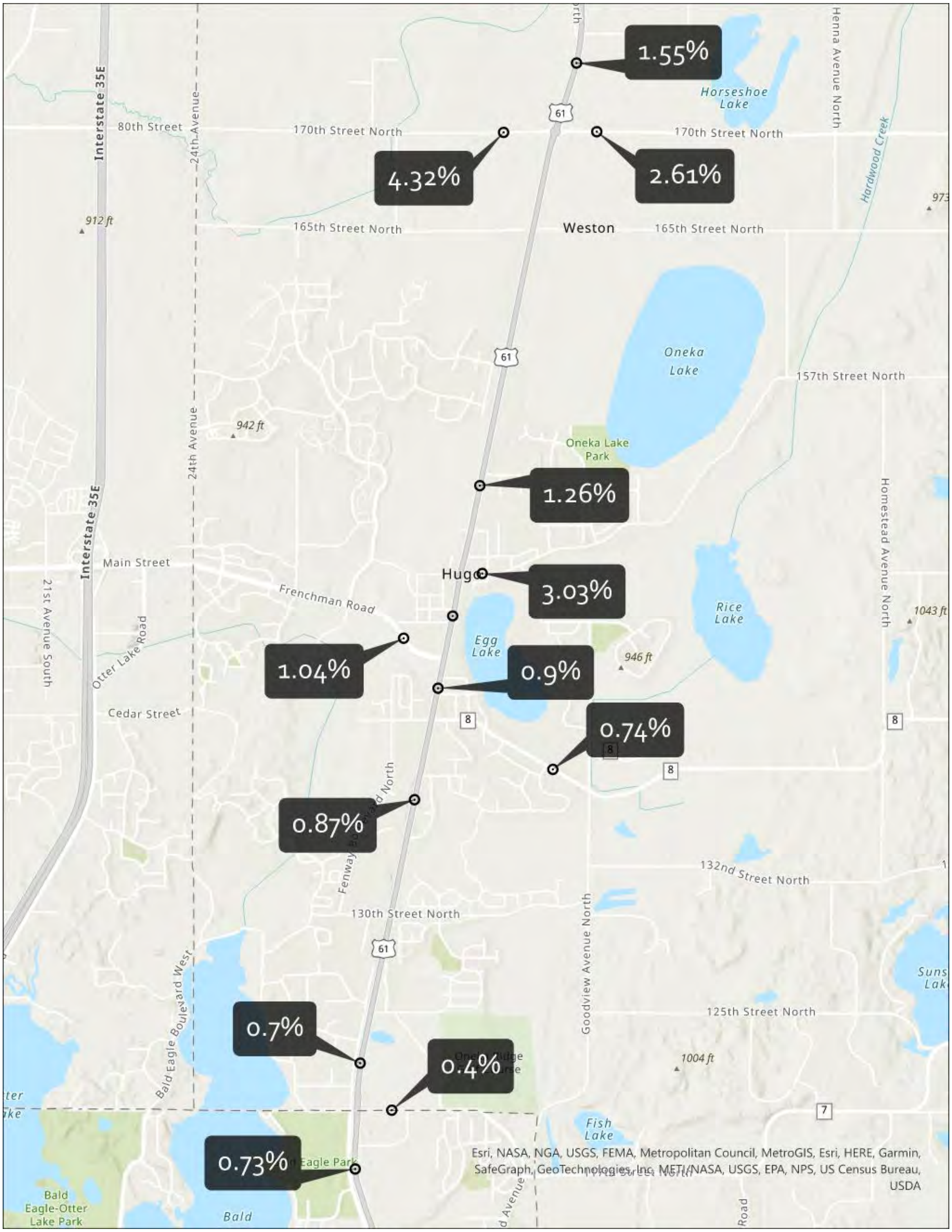


Figure 6. Annual Growth Rates



Future No Build Traffic Operations

2035 and 2045 No Build traffic operations were analyzed in Synchro/SimTraffic Version 11 with the current geometry and optimized signal timing. All signalized and stop controlled intersections were analyzed in SimTraffic and the two roundabouts were analyzed in Synchro using the HCM 6th Edition methodology. Operational results are summarized in ***Tables 10*** and ***11***. With the optimized signal timing delay is reduced from the existing condition for some movements.

Table 10. 2035 No Build Operational Analysis

Intersection	Peak Hour	Intersection (Delay[1] - LOS)	Approach (Delay[1] - LOS)			
			EB	WB	NB	SB
TH 61 at Forest Rd/175th St N	AM	3 - A	5 - A	8 - A	6 - A	1 - A
Side Street Stop Controlled	PM	7 - A	13 - B	18 - C	9 - A	1 - A
TH 61 at 170th St N	AM	7 - A	6 - A	7 - A	5 - A	7 - A
Single Lane Roundabout	PM	125 - F	11 - B	50 - F	289 - F	9 - A
TH 61 at 165th St N	AM	5 - A	9 - A	8 - A	6 - A	5 - A
Side Street Stop Controlled	PM	11 - B	26 - D	34 - D	12 - B	7 - A
TH 61 at 159th St N	AM	7 - A	8 - A	-	6 - A	8 - A
Single Lane Roundabout	PM	103 - F	7 - A	-	71 - F	7 - A
TH 61 at 152nd St N	AM	6 - A	10 - B	65 - E	2 - A	9 - A
Signalized	PM	6 - A	70 - E	80 - F	4 - A	8 - A
TH 61 at 150th St N	AM	3 - A	8 - A	6 - A	3 - A	3 - A
Side Street Stop Controlled	PM	5 - A	16 - C	-	6 - A	4 - A
TH 61 at 148th St N	AM	5 - A	-	30 - D	2 - A	4 - A
Side Street Stop Controlled	PM	21 - C	-	244 - F	4 - A	19 - C
TH 61 at 147th St N	AM	21 - C	33 - C	53 - D	9 - A	13 - B
Signalized	PM	25 - C	51 - D	105 - F	12 - B	23 - C
TH 61 at 146th St N	AM	2 - A	11 - B	-	1 - A	3 - A
Side Street Stop Controlled	PM	19 - C	206 - F	447 - F	2 - A	39 - E
TH 61 at 145th St N	AM	1 - A	11 - B	-	3 - A	1 - A
Side Street Stop Controlled	PM	14 - B	215 - F	-	5 - A	22 - C
TH 61 at Frenchman Rd/Mueller Dr	AM	30 - C	60 - E	82 - F	21 - C	15 - B
Signalized	PM	88 - F	81 - F	57 - E	80 - F	111 - F
TH 61 at 141st St N	AM	3 - A	-	21 - C	2 - A	4 - A
Side Street Stop Controlled	PM	40 - E	-	197 - F	32 - D	48 - E
TH 61 at 140th St N	AM	14 - B	54 - D	27 - C	8 - A	7 - A
Signalized	PM	86 - F	175 - F	44 - D	134 - F	24 - C
TH 61 at 137th St N	AM	3 - A	-	12 - B	2 - A	4 - A
Side Street Stop Controlled	PM	67 - F	-	244 - F	107 - F	4 - A
TH 61 at 134th St N	AM	3 - A	-	9 - A	4 - A	3 - A
Side Street Stop Controlled	PM	32 - D	-	125 - F	53 - F	3 - A
TH 61 at 130th St N	AM	18 - B	28 - C	48 - D	18 - B	10 - B
Signalized	PM	18 - B	31 - C	54 - D	17 - B	12 - B
TH 61 at 125th St N	AM	7 - A	21 - C	26 - D	5 - A	7 - A
Side Street Stop Controlled	PM	11 - B	53 - F	79 - F	11 - B	6 - A
TH 61 at 120th St N	AM	27 - C	42 - D	92 - F	15 - B	18 - B
Signalized	PM	37 - D	41 - D	98 - F	37 - D	20 - C

1. Delay in seconds per vehicle

2035 AM Peak Hour (No Build)

All intersections operate with overall LOS C or better during the AM peak hour.

The following intersections have approaches that operate with LOS F:

- Frenchman Rd at Highway 61 (westbound approach)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS E:

- Frenchman Rd at Highway 61 (eastbound approach)
- 152nd St N at Highway 61 (westbound approach)

2035 PM Peak Hour (No Build)

During the PM peak hour with 2035 volumes, several intersections are anticipated to operate with overall LOS F. These intersections are listed below:

- 170th St N at Highway 61
- 159th St N at Highway 61
- Frenchman Rd at Highway 61
- 140th St N at Highway 61
- 137th St N at Highway 61

The intersection of 141st St N at Highway 61 is anticipated to operate with LOS E. All other intersections operate with LOS D or better.

Additionally, the following intersections have approaches that operate with LOS F:

- 170th St N at Highway 61 (northbound and westbound approaches)
- 159th St N at Highway 61 (northbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 148th St N at Highway 61 (westbound approach)
- 147th St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (eastbound and westbound approaches)
- 145th St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (eastbound, northbound, and southbound approaches)
- 141st St N at Highway 61 (westbound approach)
- 140th St N at Highway 61 (eastbound and northbound approaches)
- 137th St N at Highway 61 (westbound and northbound approaches)
- 134th St N at Highway 61 (westbound and northbound approaches)
- 125th St N at Highway 61 (eastbound and westbound approaches)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS E:

- 152nd St N at Highway 61 (eastbound approach)
- 146th St N at Highway 61 (southbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 141st St N at Highway 61 (southbound approach)

Table 11. 2045 No Build Operational Analysis

Intersection	Peak Hour	Intersection (Delay[1] - LOS)	Approach (Delay[1] - LOS)			
			EB	WB	NB	SB
TH 61 at Forest Rd/175th St N	AM	4 - A	7 - A	11 - B	6 - A	1 - A
Side Street Stop Controlled	PM	9 - A	29 - D	23 - C	11 - B	2 - A
TH 61 at 170th St N	AM	7 - A	6 - A	7 - A	5 - A	7 - A
Single Lane Roundabout	PM	287 - F	26 - D	184 - F	521 - F	13 - B
TH 61 at 165th St N	AM	7 - A	10 - B	14 - B	7 - A	6 - A
Side Street Stop Controlled	PM	27 - D	231 - F	143 - F	14 - B	10 - B
TH 61 at 159th St N	AM	9 - A	10 - B	-	7 - A	9 - A
Single Lane Roundabout	PM	91 - F	9 - A	-	139 - F	8 - A
TH 61 at 152nd St N	AM	7 - A	20 - C	86 - F	3 - A	10 - B
Signalized	PM	7 - A	76 - E	81 - F	6 - A	9 - A
TH 61 at 150th St N	AM	4 - A	15 - C	6 - A	3 - A	4 - A
Side Street Stop Controlled	PM	7 - A	32 - D	-	7 - A	5 - A
TH 61 at 148th St N	AM	16 - C	-	138 - F	2 - A	7 - A
Side Street Stop Controlled	PM	33 - D	-	397 - F	4 - A	22 - C
TH 61 at 147th St N	AM	23 - C	30 - C	58 - E	9 - A	16 - B
Signalized	PM	48 - D	48 - D	245 - F	16 - B	28 - C
TH 61 at 146th St N	AM	3 - A	11 - B	-	1 - A	3 - A
Side Street Stop Controlled	PM	33 - D	407 - F	418 - F	2 - A	55 - F
TH 61 at 145th St N	AM	2 - A	13 - B	-	3 - A	1 - A
Side Street Stop Controlled	PM	22 - C	436 - F	-	5 - A	27 - D
TH 61 at Frenchman Rd/Mueller Dr	AM	45 - D	89 - F	78 - E	25 - C	24 - C
Signalized	PM	125 - F	165 - F	58 - E	89 - F	113 - F
TH 61 at 141st St N	AM	4 - A	-	14 - B	2 - A	5 - A
Side Street Stop Controlled	PM	50 - F	-	476 - F	39 - E	51 - F
TH 61 at 140th St N	AM	15 - B	61 - E	27 - C	10 - B	8 - A
Signalized	PM	127 - F	419 - F	44 - D	165 - F	23 - C
TH 61 at 137th St N	AM	3 - A	-	12 - B	2 - A	4 - A
Side Street Stop Controlled	PM	75 - F	-	104 - F	131 - F	5 - A
TH 61 at 134th St N	AM	3 - A	-	14 - B	4 - A	3 - A
Side Street Stop Controlled	PM	61 - F	-	48 - E	105 - F	3 - A
TH 61 at 130th St N	AM	22 - C	37 - D	47 - D	21 - C	15 - B
Signalized	PM	49 - D	34 - C	54 - D	74 - E	12 - B
TH 61 at 125th St N	AM	10 - B	28 - D	47 - E	5 - A	10 - B
Side Street Stop Controlled	PM	25 - D	141 - F	283 - F	22 - C	12 - B
TH 61 at 120th St N	AM	43 - D	45 - D	177 - F	17 - B	26 - C
Signalized	PM	45 - D	43 - D	97 - F	43 - D	34 - C

1. Delay in seconds per vehicle

2045 AM Peak Hour (No Build)

The intersections of Frenchman Rd at Highway 61 and 120th St N at Highway 61 operate with LOS D overall. All other intersections operate with LOS C or better.

The following intersections have approaches that operate with LOS F:

- 152nd St N at Highway 61 (westbound approach)
- 148th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (eastbound approach)

- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS E:
- 147th St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 140th St N at Highway 61 (eastbound approach)
- 125th St N at Highway 61 (westbound approach)

2045 PM Peak Hour (No Build)

During the PM peak hour with 2045 volumes, several intersections are anticipated to operate with overall LOS F. These intersections are listed below:
- 170th St N at Highway 61
- 159th St N at Highway 61
- Frenchman Rd at Highway 61
- 141st St N at Highway 61
- 140th St N at Highway 61
- 137th St N at Highway 61
- 134th St N at Highway 61

All other study area intersections indicate operations with LOS D or better.

The following intersections have approaches that operate with LOS F:
- 170th St N at Highway 61 (northbound and westbound approaches)
- 165th St N at Highway 61 (eastbound and westbound approaches)
- 159th St N at Highway 61 (northbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 148th St N at Highway 61 (westbound approach)
- 147th St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (eastbound, westbound, and southbound approaches)
- 145th St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (eastbound, northbound, and southbound approaches)
- 141st St N at Highway 61 (westbound and southbound approaches)
- 140th St N at Highway 61 (eastbound and northbound approaches)
- 137th St N at Highway 61 (westbound and northbound approaches)
- 134th St N at Highway 61 (northbound approach)
- 125th St N at Highway 61 (eastbound and westbound approaches)
- 120th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS E:
- 152nd St N at Highway 61 (eastbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 141st St N at Highway 61 (northbound approach)
- 134th St N at Highway 61 (westbound approach)
- 130th St N at Highway 61 (northbound approach)

The full operational results showing the individual movement delay and queue results are shown in ***Appendix B***. Also included in ***Appendix B*** are figures which illustrate the operations along the corridor.

Sensitivity Analysis

In addition to the traffic volumes projected based on the travel demand modeling as previously described, a sensitivity analysis was completed to analyze a modified volume set if improvements were made near the project area that would alter traffic patterns. The previously analyzed volumes based on the travel demand model were used as a base for the sensitivity analysis and then edited to show the altered travel patterns with the two improvements considered below. The two improvements considered include a potential future I-35E interchange north of the existing interchange at Anoka County Highway 14 and development of the southeast quadrant of the intersection of Frenchman Rd and Highway 61.

Potential Future I-35E Interchange

StreetLight was used to determine how much traffic may re-route with a potential future I-35E interchange north of the existing interchange at Anoka County Highway 14. StreetLight data shows about 400 trips on Highway 61 north of 159th Street are destined for southbound I-35E and 500 trips on northbound I-35E are destined for TH 61 north of 159th Street. This travel pattern is shown in ***Exhibit 2*** below. StreetLight also shows that about 40 trips along Highway 61 north of 159th St and are destined for northbound I-35E and about 40 vehicles along southbound I-35E are destined for TH 61 north of 159th St. This travel pattern is shown in ***Exhibit 3*** below.

Exhibit 2. StreetLight Analysis Zones for Vehicles between I-35E south of Anoka County Highway 14 and TH 61 north of 159th St

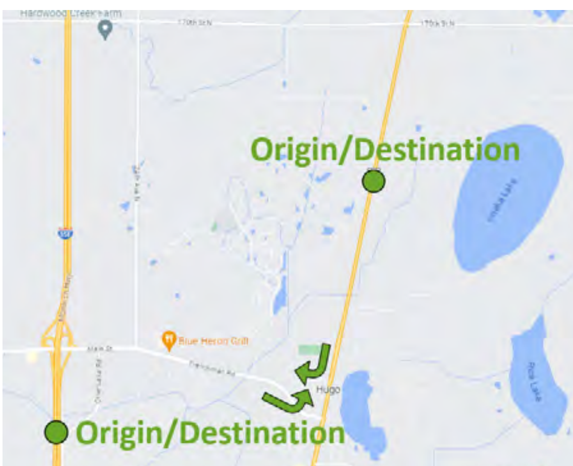
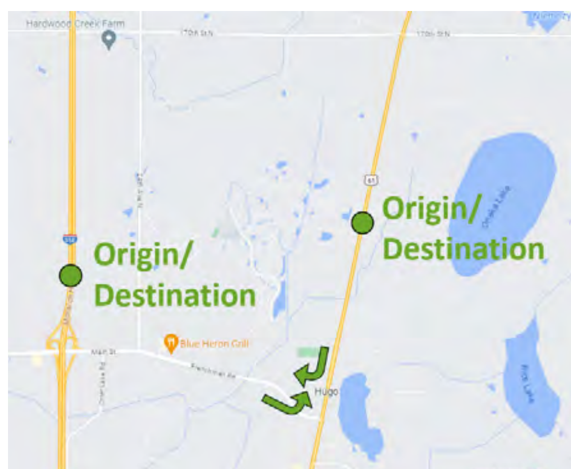


Exhibit 3. StreetLight Analysis Zones for Vehicles between I-35E north of Anoka County Highway 14 and TH 61 south of 159th St



The daily volumes were converted to peak hour volumes and forecasted out to 2035 and 2045. This is shown in ***Table 13*** below.

Table 13. Rerouted Daily Volume with Future I-35E Interchange

Peak Hour	Movement	2022	2035	2045
AM	Southbound Right	26	33	42
	Eastbound Left	12	15	19
PM	Southbound Right	23	29	35
	Eastbound Left	63	80	97

The volumes in ***Table 13*** were removed from the intersection of Highway 61 at Frenchman Rd for this sensitivity analysis as they were assumed to use the new interchange if one were to be constructed along I-35E north of the existing interchange at Anoka County Highway 14.

Potential Development

The sensitivity analysis also assumed development near the Highway 61 at Frenchman Rd intersection. North-south roadway connections were assumed to a potential future signal approximately one-quarter mile west of Highway 61. These new connections would allow vehicles destined for Frenchman Rd that currently need to get onto Highway 61 at 146th St N, 145th St N, and 140th St N to get directly onto Frenchman Rd without using Highway 61. The total number of trips that currently take use 146th St N, 145th St N, and 140th St N that are destined for Frenchman Rd were estimated. A total of between ~70-130 vehicles during the 2035 and 2045 peak hours were assumed to reroute and were removed from Highway 61 for the sensitivity analysis.

Traffic Operations

An operational analysis with the lower sensitivity analysis volumes was completed. Operations were determined to be similar during the 2035 and 2045 AM peak hours. Operations were improved during the 2035 PM peak hour with only one intersection anticipated to operate with LOS F with the lower traffic volumes compared to five intersections with the original volumes. Operations were also slightly improved during the 2045 PM peak hour with four intersections operating with LOS F with the lower traffic volumes compared to seven intersections with the original volumes. The full operational results showing the individual movement delay and queue results are shown in ***Appendix B.*** Also included in ***Appendix B*** are figures which illustrate the operations along the corridor.

Planning Level Capacity Analysis

A preliminary check of the existing and forecasted AADTs were compared to planning level roadway capacities using guidance from Chapter 6 of the Washington County 2040 Comprehensive Plan. ***Table 14*** below shows the planning level roadway capacity by facility type.

Table 14. Planning Level Roadway Capacity by Facility Type

Roadway Type[1]	Planning Level Daily Capacity[2] (ADT)	Approaching Capacity (85% ADT)
Two-lane undivided urban	10,000	8,500
Two-lane undivided rural	12,000	10,200
Three-lane (two-lane with turn lanes)	22,500	19,125
Four-lane undivided urban	20,000	17,000
Five-lane urban (four-lane with turn lanes)	32,000	27,200
Four-lane divided rural	38,000	32,300
Four-lane expressway (no signals)	60,000	51,000
Four-lane freeway	80,000	68,000
Six-lane freeway	120,000	102,000

This chart is intended for use as an approximation for planning purposes.
[1]The terms urban and rural describe typical section design (e.g., curb and gutter for urban and ditch drainage for rural), not geographical areas.
[2]Turn lanes may be needed for high speeds at 7,000 ADT.

Figures 7 and ***8*** show the roadway type recommended comparing the existing and forecasted volumes to the planning level capacities.

Figure 7. Recommended Roadway Type Based on Existing (2022) Daily Volumes

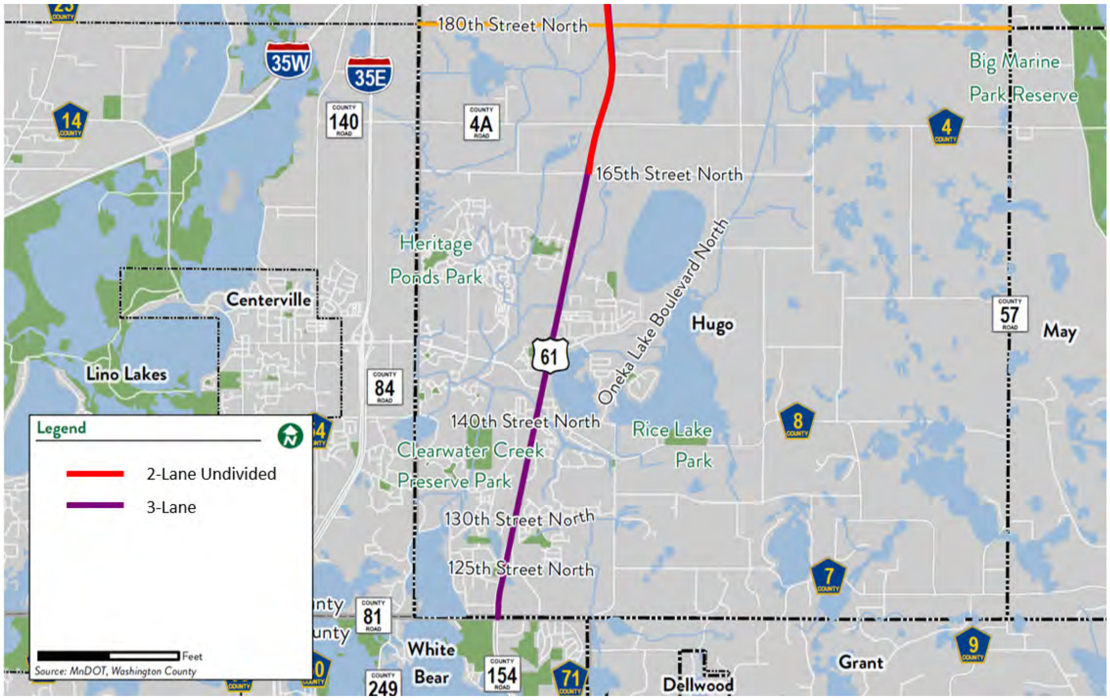
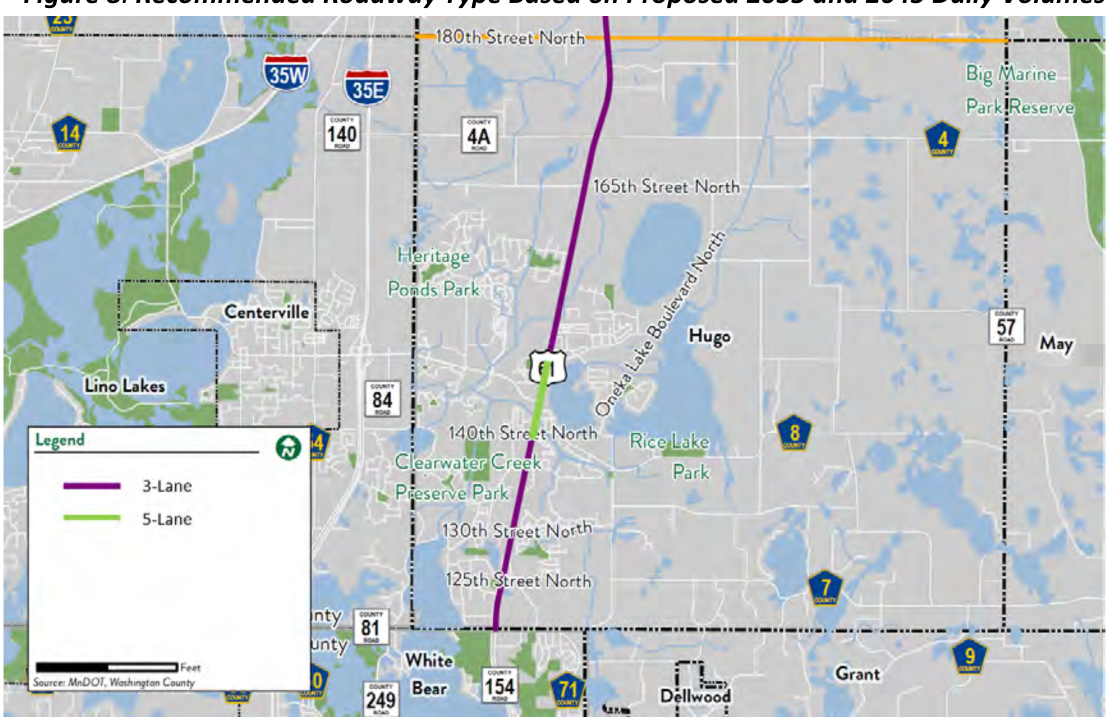


Figure 7 indicates that existing Highway 61 volumes south of 165th St N are within the planning level capacity for a three-lane roadway (two-lane with turn lanes). With turn lanes along TH 61 at most intersections, the corridor today operates with similar capacity to a three-lane roadway. The existing volumes north of 165th St N are within the planning level capacity for a two-lane undivided roadway.

Figure 8. Recommended Roadway Type Based on Proposed 2035 and 2045 Daily Volumes



The recommended roadway types were found to be the same with both 2035 and 2045 volumes. ***Figure 8*** indicates that 2035 and 2045 Highway 61 volumes are within the planning level capacity for a three-lane roadway (two-lane with turn lanes) along most of Highway 61 except between 147th St N and 140th St N where a five-lane (four-lane with turn lanes) is needed.

Planning level capacity thresholds from the National Cooperative Highway Research Program (NCHRP) Report 1036: Roadway Cross-Section Reallocation, were also referenced to analyze hourly traffic volumes throughout the day. Volumes at three locations along the Highway 61 corridor were analyzed to see volume trends on the north end, south end, and in the middle near Frenchman Rd.

Exhibit 4 shows the existing, 2035, and 2045 volumes at Highway 61 south of the intersection at 130th St N. The volumes shown are at the specific location referenced, not averaged over a segment. This analysis shows how the existing volumes are within the capacity of a three-lane section. 2035 volumes are at capacity of a three-lane section during the AM peak hour and below capacity of a three-lane section during the PM peak hour. 2045 volumes are just over the capacity of a three-lane section during the AM peak hour and nearing capacity during the PM peak hour.

Exhibit 4. All Day Volume Assessment: Highway 61 South of 130th St N Intersection

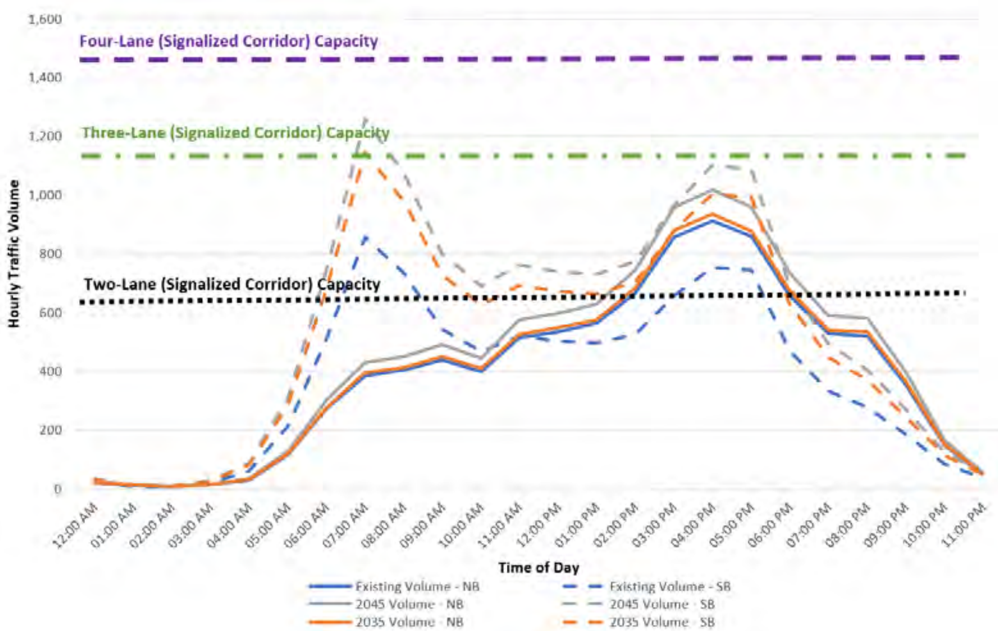


Exhibit 5 shows the existing, 2035, and 2045 volumes along Highway 61 south of Frenchman Rd. The analysis shows the existing volumes are near capacity of a three-lane section during the PM peak hour, but below capacity of a three-lane section during the AM peak hour. 2035 volumes are over the capacity of a three-lane section during the PM peak hour but remain below capacity of a three-lane section during the AM peak hour. 2045 volumes are nearing capacity of a four-lane section during the PM peak hour but remain below capacity of a three-lane section during the AM peak hour.

Exhibit 5. All Day Volume Assessment: Highway 61 South of Frenchman Rd Intersection

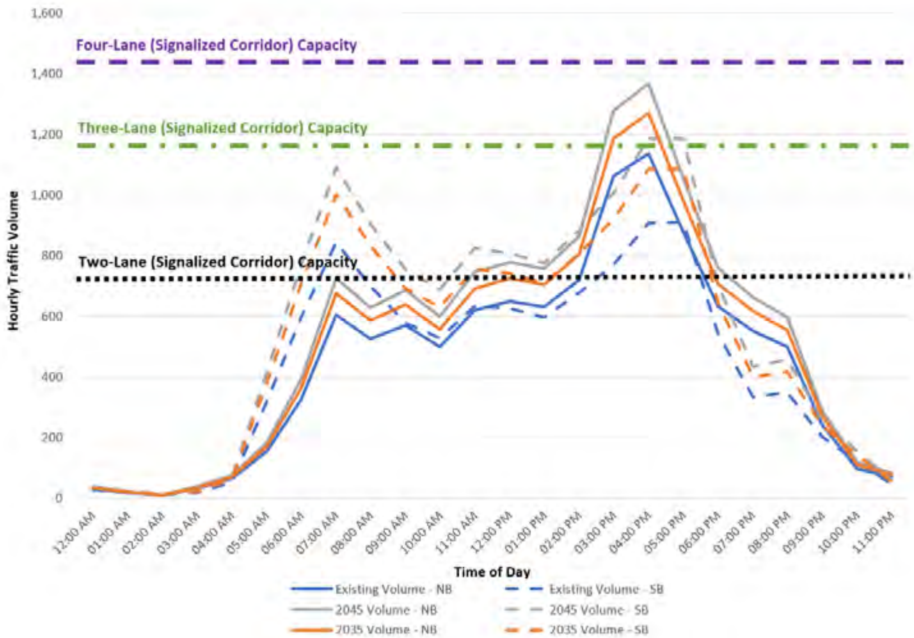
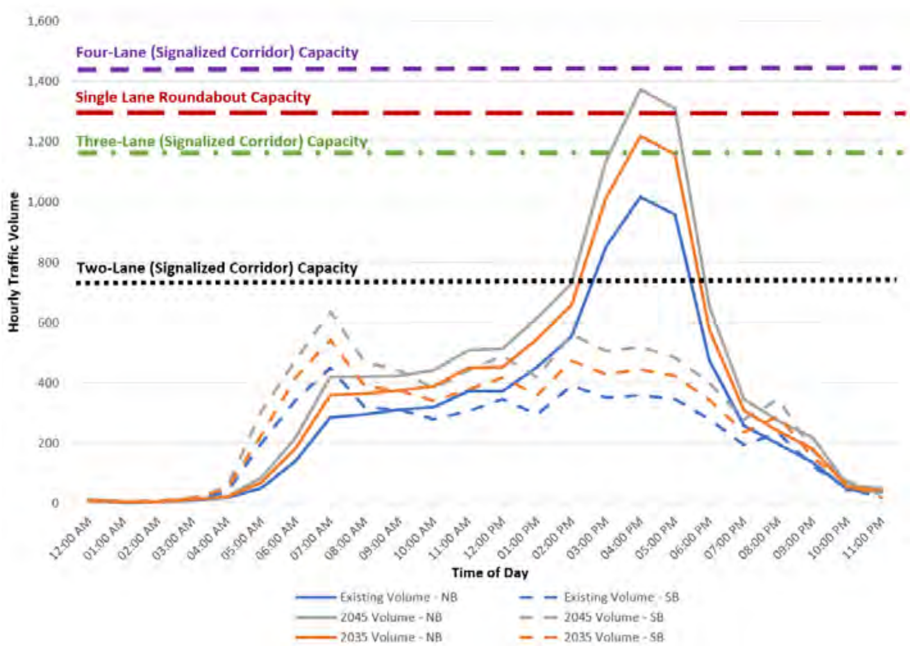


Exhibit 6 shows the existing, 2035, and 2045 volumes along Highway 61 north of 165th St N. The analysis shows how the AM peak hour volumes are within the capacity for a two-lane roadway with existing, 2035, and 2045 volumes. The existing PM peak hour volumes are within the capacity of a three-lane section. 2035 PM peak hour volumes are just over capacity of a three-lane section but below the capacity of a single lane roundabout corridor. 2045 PM peak hour volumes are just over capacity of a single lane roundabout corridor during the PM peak hour.

Exhibit 6. All Day Volume Assessment: Highway 61 North of 165th St N Intersection



Overall, the full day assessment indicates that only one or two hours are expected to operate over the planning level capacity with a three-lane section throughout the entire project corridor.

Turn Lane Considerations

Turn lanes along Highway 61 were analyzed to determine where left and right-turn lanes are justified based on the forecasted 2045 traffic counts.

Unsignalized Intersections

The Minnesota Department of Transportation (MnDOT) Access Management Manual provides guidance for when left and right-turn lanes are warranted where speed limits are 45 MPH or greater. Highway 61 has a speed limit of 45 MPH or greater throughout the project area, except between 142nd St N and 148th St N where the speed limit is 35 MPH. The figures below are from the MnDOT Access Manual. These figures show the recommended mainline and cross street daily volumes that warrant turn lanes.

Figure 3.40: Warrant 9 for Left-Turn Lanes

2-Lane Highway AADT	4-Lane Highway AADT	Cross Street or Driveway ADT	Turn Lane Requirement
1500 to 2999	3000 to 5999	> 1500	Left-turn lane warranted
3000 to 3999	6000 to 7999	> 1200	Left-turn lane warranted
4000 to 4999	8000 to 9999	> 1000	Left-turn lane warranted
5000 to 6499	10,000 to 12,999	> 800	Left-turn lane warranted
≥ 6500 AADT	≥ 13,000 AADT	101 to 400 > 400	Left-turn lane or bypass lane Left-turn lane warranted

Highway AADT one year after opening
Posted speed 45 mph or greater

Figure 3.41: Warrant 9 for Right-Turn Lanes

2-Lane Highway AADT	4-Lane Highway AADT	Cross Street or Driveway ADT	Turn Lane Requirement
≥ 1500 AADT	≥ 3000 AADT	> 100	Right-turn lane warranted

Highway AADT one year after opening
Posted speed 45 mph or greater

The existing AADT along Highway 61 ranges from 11,500 to 21,100 and forecasted 2045 AADT is anticipated to range from 16,400 to 25,900. With higher volumes along Highway 61, the cross streets only need to have volumes greater than 100 to justify turn lanes. All cross streets counted have >100 ADT today except 150th St N east of Highway 61, which only serves 80 vehicles per day according to the existing traffic count. The 2045 forecasted volume is anticipated to be just over 100 vehicles per day.

For the unsignalized intersections between 142nd St N and 148th St N where the speed limit along Highway 61 is 35 MPH, Figures 2-5 and 2-6 from the NCHRP 457[1] were referenced to determine if left and right turn lanes are recommended. These figures provide guidance and thresholds for mainline turn lane warrants based on speed, advancing volume and opposing volume in a peak hour of traffic flow. Volumes at the intersections of 145th St N, 146th St N, and 148th St N were analyzed. The 142nd St N

[1] esg.pdf (trb.org)

intersection could not be analyzed as traffic counts were not collected at that location. The analysis is summarized below by intersection:

- **145th St N:**
  - Northbound left turn lane is warranted (turn lane exists today)
  - Southbound left turn lane is not warranted (turn lane exists today)
- **146th St N:**
  - Northbound left, northbound right, and southbound left turn lanes are warranted (turn lanes exist today)
  - Southbound right turn lane is not warranted (turn lane exists today)
- **148th St N:**
  - Northbound right and southbound left turn lanes are warranted (no turn lanes exist today)

Signalized Intersections

The Highway Capacity Manual indicates exclusive left turn lanes at signalized intersections should be installed where exclusive left turn phasing is provided and where left turn volumes exceed 100 vehicles/hour. Dual left turn lanes should be considered where left turn volumes exceed 300 vehicles/hour. Right turn lanes should be considered when turn lanes volumes exceed 300 vehicles/hour. Based on these thresholds the following turn lanes are justified.

- **Frenchman Rd:** Dual northbound left turn, a dual eastbound left turn, an eastbound right turn, and a southbound right turn lane are justified.
- **147th St N:** A northbound right and a westbound left turn lane are justified
- **140th St N:** Southbound and eastbound left turn lanes are justified
- **120th St N:** Westbound left turn lane is justified

No turn lanes are justified based on HCM recommendations at the intersections of 152nd St N and 130th St N with Highway 61.

Figures 9-10 show the warranted and unwarranted but recommended turn lanes. The figures also show the locations of signalized intersections and roundabouts along the project corridor.

Remainder of Page Intentionally Left Blank

Figure 9. Turn Lane Considerations – 175th St N through 147th St N

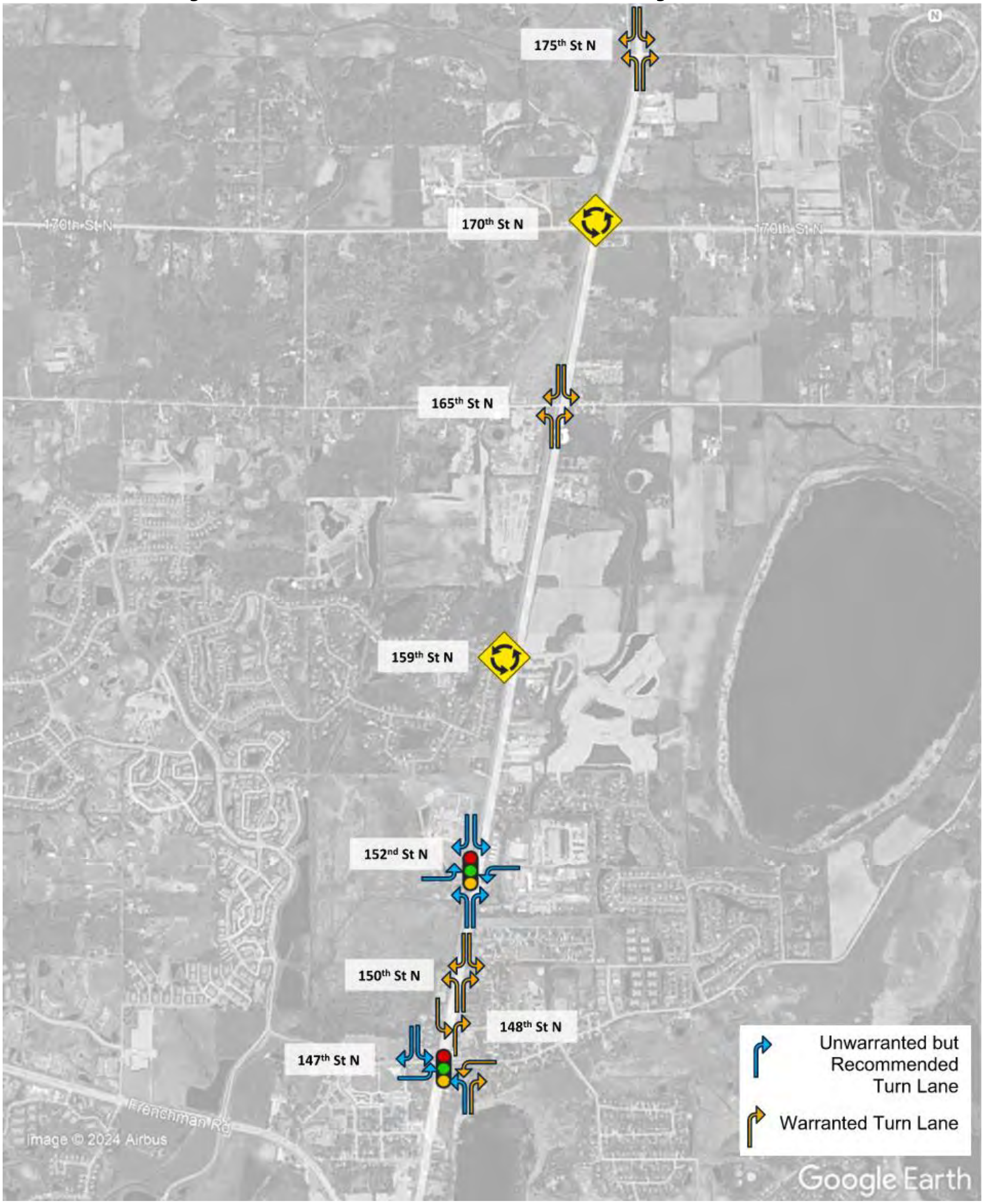
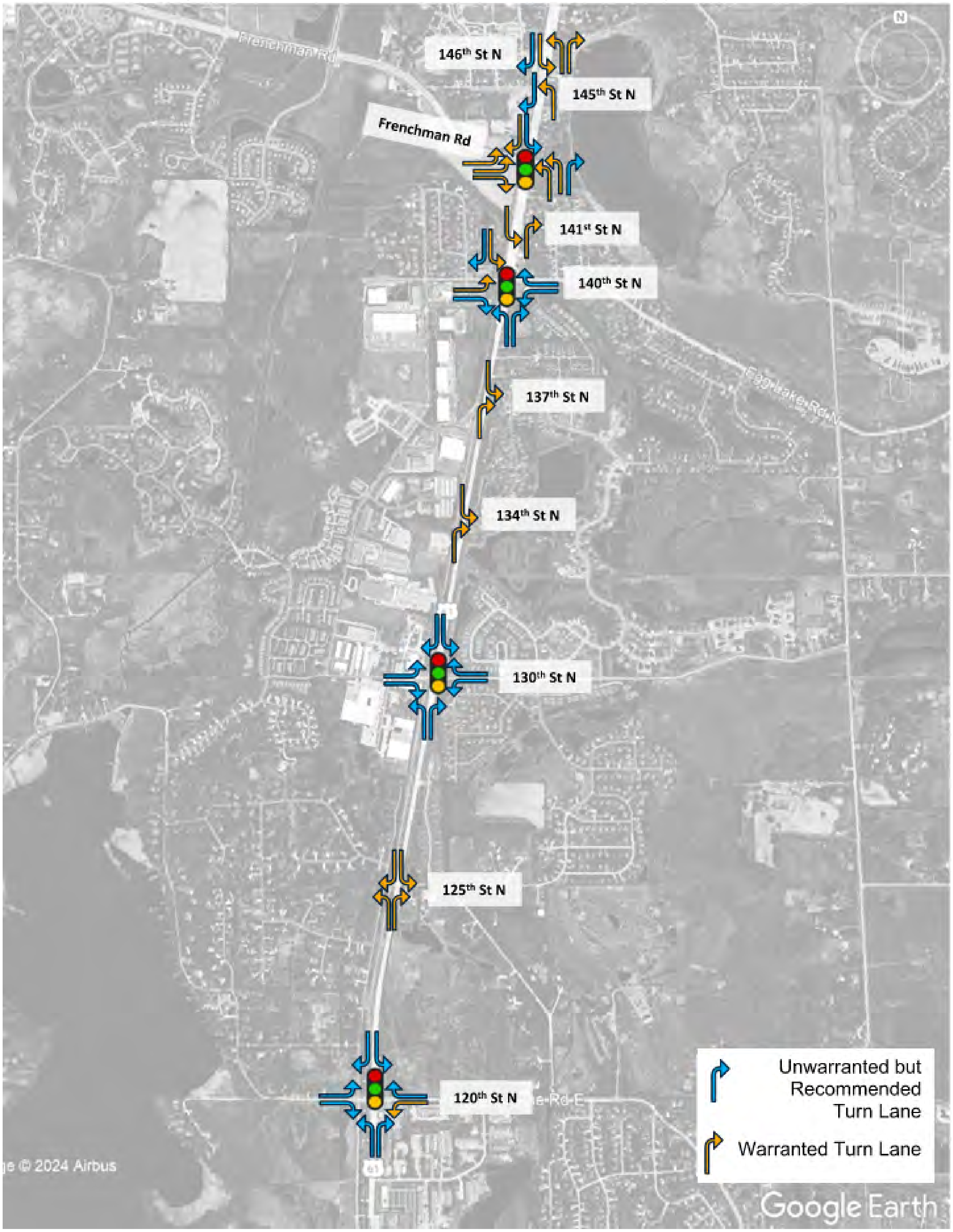


Figure 10. Turn Lane Considerations – 146th St N through 120th St N



Most of the unwarranted but recommended turn lanes are at the signalized intersections. Several of the turn lanes exist today and are recommended to remain in the future.

Detailed Peak Hour Operational Analysis

A detailed 2045 peak hour analysis was completed in Synchro/SimTraffic which assumed a three-lane section for the north and south segments, a four-lane section with turn lanes from south of 140th St N to north of 152nd St N, and recommended and warranted turn lanes as show on ***Figures 9-10.*** The one exception was that no northbound right turn lane was analyzed at 150th St N. Although the cross-street volume is anticipated to be over 100 in 2045, only one vehicle is estimated to make the northbound right turn in the 2045 peak hours. The traffic modeling assumed a three-lane section for the north and south segments as planning level capacity analysis indicated that could be sufficient. A four-lane section would provide more capacity and more gaps in traffic to improve side street delay. The layout created for this project was shown with a four-lane section throughout the corridor for right-of-way planning purposes.

The 2045 Build peak hour operational results are summarized in ***Table 15***.

Remainder of Page Intentionally Left Blank

Table 15. 2045 Build Operational Analysis

Intersection	Peak Hour	Intersection (Delay[1] - LOS)	Approach (Delay[1] - LOS)			
			EB	WB	NB	SB
TH 61 at Forest Rd/175th St N	AM	4 - A	11 - B	20 - C	5 - A	1 - A
Side Street Stop Controlled	PM	14 - B	127 - F	44 - E	11 - B	1 - A
TH 61 at 170th St N	AM	7 - A	6 - A	7 - A	5 - A	7 - A
Single Lane Roundabout	PM	287 - F	26 - D	184 - F	521 - F	13 - B
TH 61 at 165th St N	AM	7 - A	18 - B	20 - C	5 - A	6 - A
Side Street Stop Controlled	PM	42 - E	534 - F	272 - F	10 - B	6 - A
TH 61 at 159th St N	AM	9 - A	10 - B	-	7 - A	9 - A
Single Lane Roundabout	PM	91 - F	9 - A	-	139 - F	8 - A
TH 61 at 152nd St N	AM	2 - A	18 - B	63 - E	3 - A	2 - A
Signalized	PM	6 - A	58 - E	83 - F	7 - A	2 - A
TH 61 at 150th St N	AM	2 - A	10 - B	8 - A	1 - A	2 - A
Side Street Stop Controlled	PM	3 - A	12 - B	-	3 - A	2 - A
TH 61 at 148th St N	AM	3 - A	-	19 - C	2 - A	2 - A
Side Street Stop Controlled	PM	4 - A	-	29 - D	4 - A	3 - A
TH 61 at 147th St N	AM	18 - B	38 - D	41 - D	10 - B	12 - B
Signalized	PM	19 - B	48 - D	45 - D	16 - B	12 - B
TH 61 at 146th St N	AM	2 - A	9 - A	-	1 - A	2 - A
Side Street Stop Controlled	PM	2 - A	26 - D	121 - F	2 - A	3 - A
TH 61 at 145th St N	AM	1 - A	9 - A	-	3 - A	0 - A
Side Street Stop Controlled	PM	2 - A	7 - A	-	4 - A	0 - A
TH 61 at Frenchman Rd/Mueller Dr	AM	21 - C	31 - C	70 - E	17 - B	18 - B
Signalized	PM	34 - C	31 - C	46 - D	39 - D	30 - C
TH 61 at 141st St N	AM	2 - A	-	9 - A	2 - A	4 - A
Side Street Stop Controlled	PM	4 - A	-	15 - B	4 - A	5 - A
TH 61 at 140th St N	AM	15 - B	39 - D	27 - C	13 - B	10 - B
Signalized	PM	27 - C	54 - D	34 - C	25 - C	21 - C
TH 61 at 137th St N	AM	3 - A	-	15 - C	4 - A	3 - A
Side Street Stop Controlled	PM	4 - A	-	27 - D	4 - A	2 - A
TH 61 at 134th St N	AM	3 - A	-	19 - C	3 - A	3 - A
Side Street Stop Controlled	PM	6 - A	-	35 - E	8 - A	3 - A
TH 61 at 130th St N	AM	23 - C	34 - C	46 - D	16 - B	22 - C
Signalized	PM	30 - C	30 - C	50 - D	33 - C	23 - C
TH 61 at 125th St N	AM	10 - B	31 - D	69 - F	5 - A	8 - A
Side Street Stop Controlled	PM	19 - C	110 - F	341 - F	13 - B	8 - A
TH 61 at 120th St N	AM	35 - D	44 - D	56 - E	16 - B	38 - D
Signalized	PM	54 - D	39 - D	63 - E	78 - E	22 - C

1. Delay in seconds per vehicle

2045 AM Peak Hour (Build)

The intersection of 120th St N at Highway 61 operates with overall LOS D. All other intersections operate with LOS C or better.

The following intersections have approaches that operate with LOS F:

- 125th St N at Highway 61 (westbound approach)

The following intersections have approaches that operate with LOS E:

- 152nd St N at Highway 61 (westbound approach)
- Frenchman Rd at Highway 61 (westbound approach)
- 120th St N at Highway 61 (westbound approach)

2045 PM Peak Hour (Build)

During the PM peak hour with 2045 volumes, the single lane roundabouts at 170th St N and 159th St N at Highway 61 are anticipated to operate overall with LOS F. The intersection of 165th St N at Highway 61 operates with LOS E overall and the intersection of 120th St N at Highway 61 operates with LOS D overall. All other intersections operate with LOS C or better.

The following intersections have approaches that operate with LOS F:

- 175th St N at Highway 61 (eastbound approach)
- 170th St N at Highway 61 (northbound and westbound approaches)
- 165th St N at Highway 61 (eastbound and westbound approaches)
- 159th St N at Highway 61 (northbound approach)
- 152nd St N at Highway 61 (westbound approach)
- 146th St N at Highway 61 (westbound approach)
- 125th St N at Highway 61 (eastbound and westbound approaches)

The following intersections have approaches that operate with LOS E:

- 175th St N at Highway 61 (westbound approach)
- 152nd St N at Highway 61 (eastbound approach)
- 134th St N at Highway 61 (westbound approach)
- 120th St N at Highway 61 (northbound and westbound approaches)

The detailed peak hour operations of a three-lane in the north and south segments and a four-lane with turn lanes in the downtown segment shows acceptable operations during the AM peak hour.

During the PM peak hour, the roundabouts (170th St N and 159th St N) in the north segment are anticipated to fail based on a high level HCM capacity analysis. An additional through lane along Highway 61 at the roundabouts (2x1 roundabouts) would significantly improve operations. 159th St N at Highway 61 would operate with LOS A or B for all movements with a 2x1 roundabout. All movements at 170th St N and Highway 61 would operate with 73 seconds of delay or less with a 2x1 roundabout.

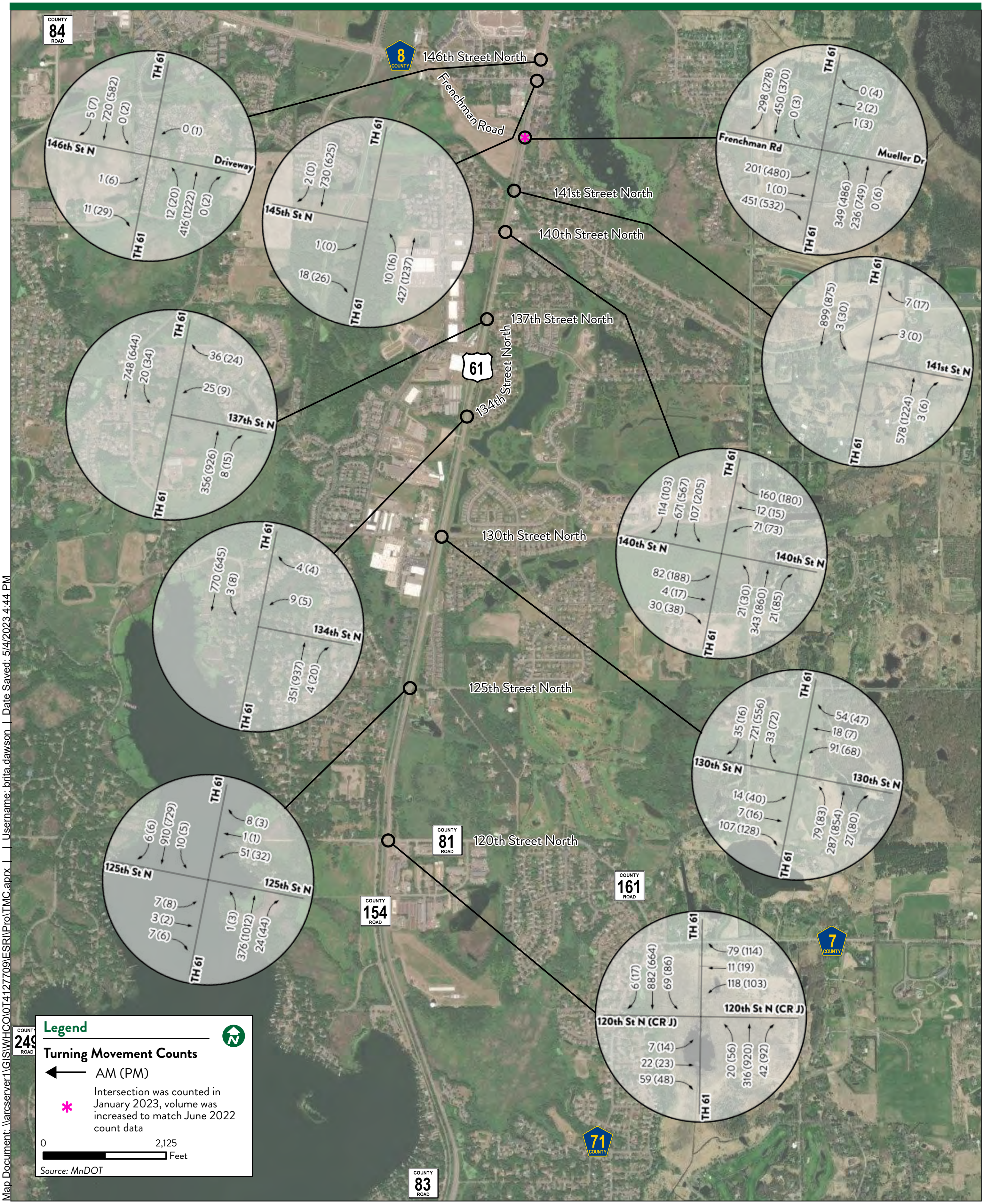
Additionally, the operational analysis indicates that further intersection improvements are needed to mitigate side street delay but overall, a three-lane is anticipated to provide acceptable LOS in both the north and south segments. For example, at 165th St N and Highway 61 restrictions could be needed such as converting the intersection to Right-In/Right-Out or a 3/4 access to reduce the side street delay.

The full operational results showing the individual movement delay and queue results are shown in ***Appendix B.*** Also included in ***Appendix B*** are figures which illustrate the operations along the corridor.

Appendix A:
Traffic Counts

Washington County

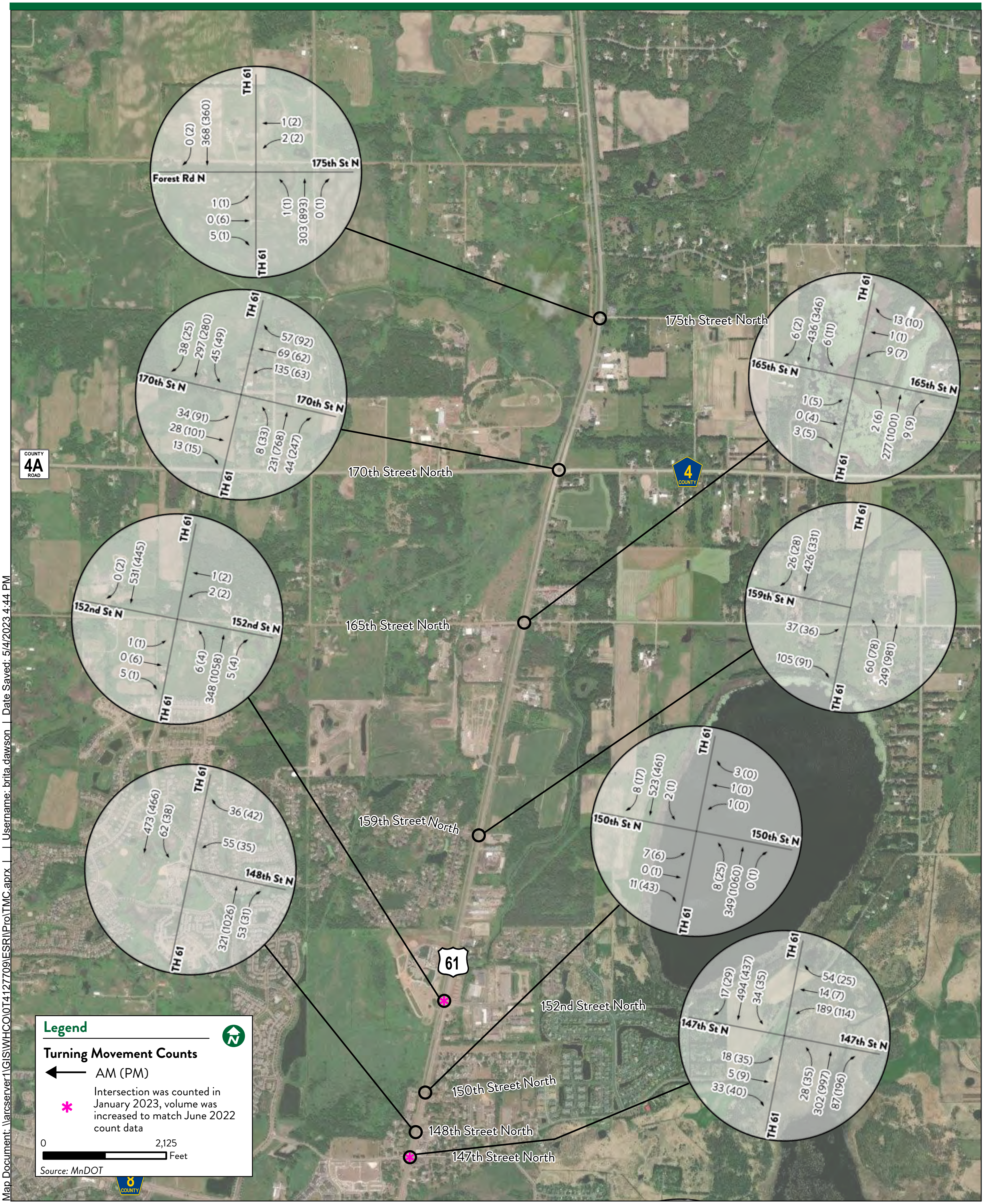
Existing Peak Hour Turning Movement Counts



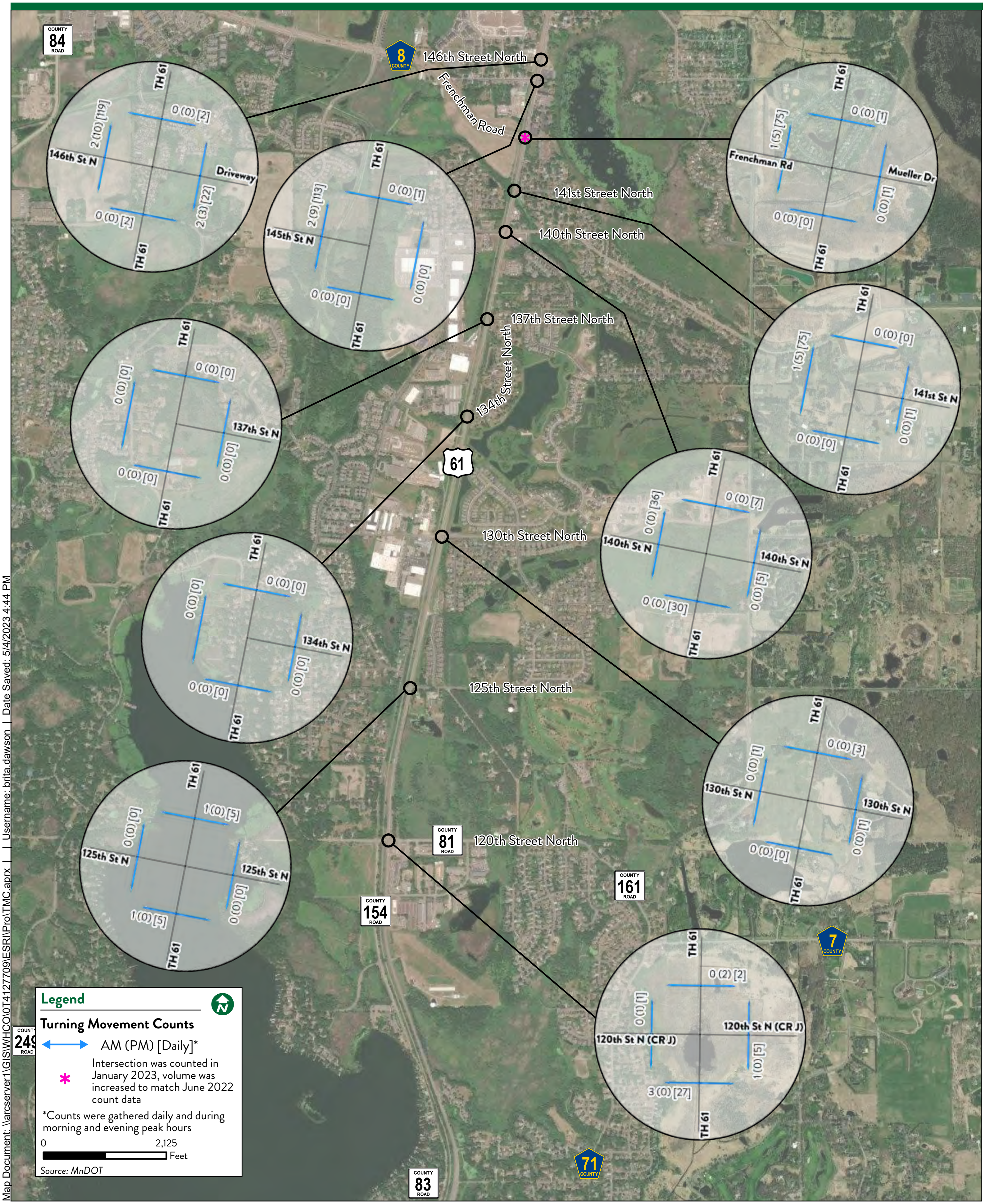
Existing Peak Hour Turning Movement Counts

May 2023

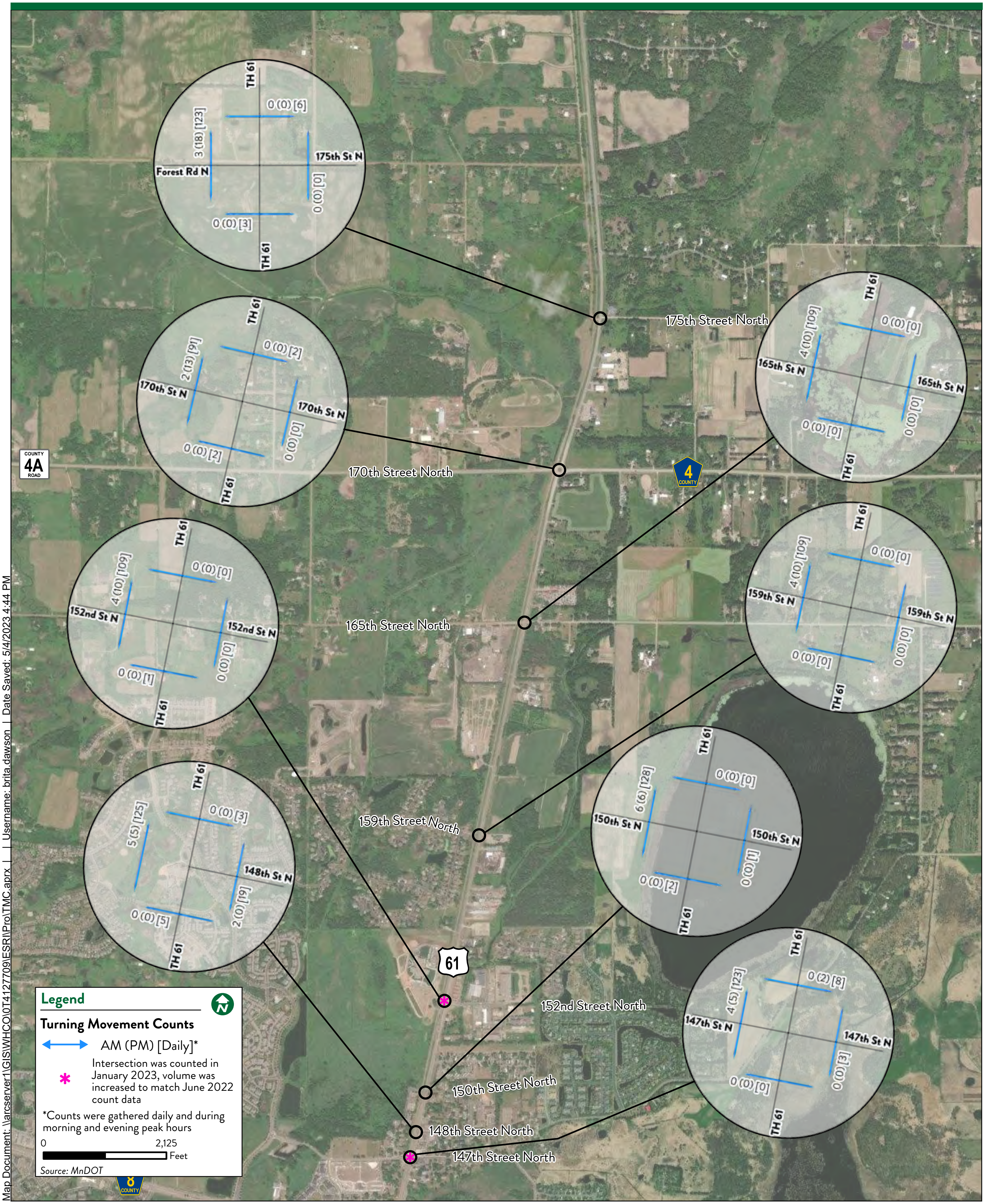
BOLTON & MENK

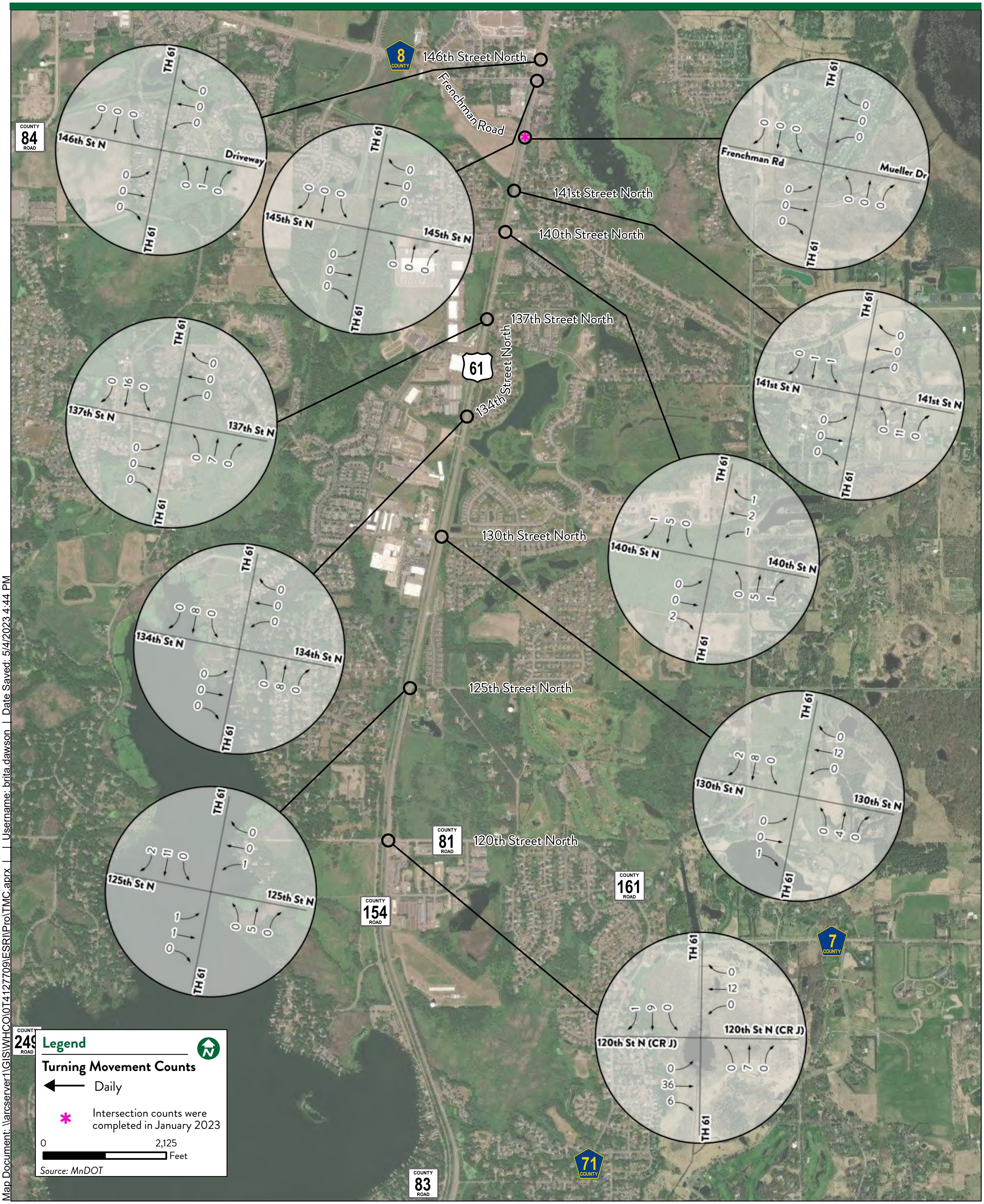


Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM

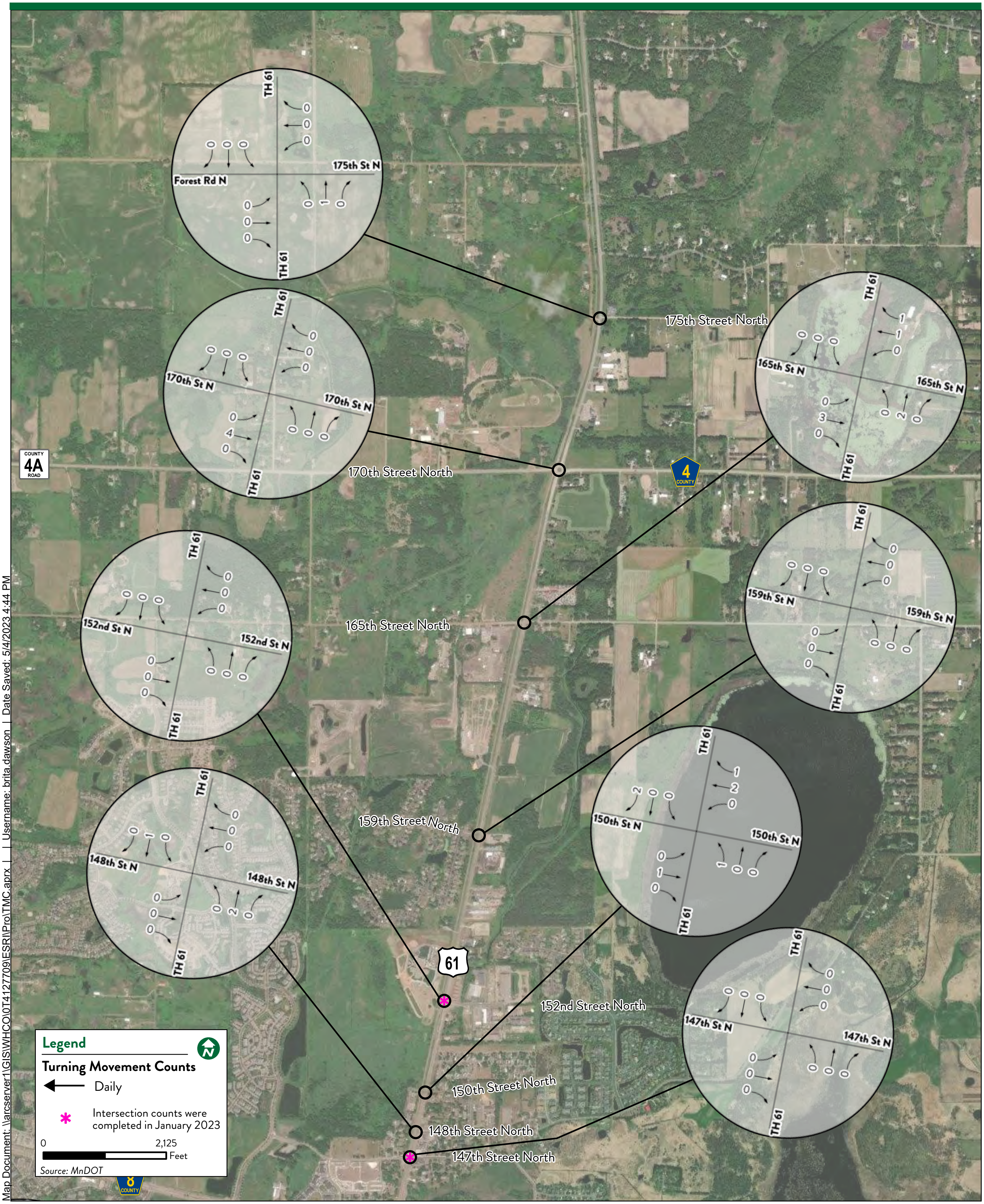


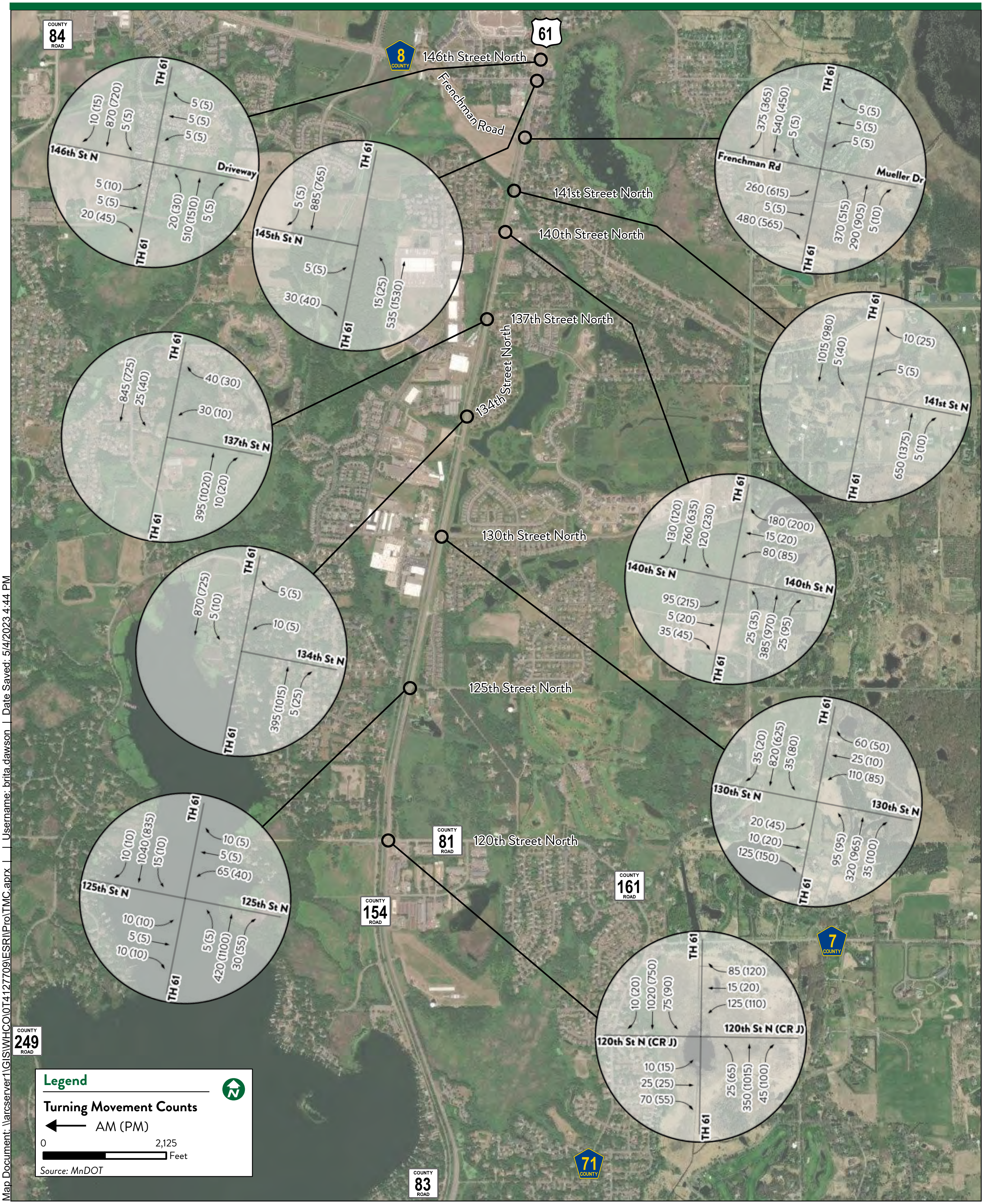
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM


TH 61
0 (0) [6]
3 (18) [123]
175th St N
Forest Rd N
0 (0) [0]
0 (0) [3]
TH 61
175th Street North
TH 61
0 (0) [2]
2 (13) [91]
170th St N
170th St N
0 (0) [0]
0 (0) [2]
TH 61
170th Street North
TH 61
0 (0) [0]
4 (10) [109]
165th St N
165th St N
0 (0) [0]
0 (0) [0]
TH 61
165th Street North
TH 61
0 (0) [0]
4 (10) [109]
152nd St N
152nd St N
0 (0) [0]
0 (0) [1]
TH 61
TH 61
0 (0) [0]
4 (10) [109]
159th St N
159th St N
0 (0) [0]
0 (0) [0]
TH 61
159th Street North
TH 61
0 (0) [0]
6 (6) [128]
150th St N
150th St N
0 (0) [1]
0 (0) [2]
TH 61
TH 61
0 (0) [3]
5 (5) [125]
148th St N
2 (0) [19]
0 (0) [5]
TH 61
61
152nd Street North
TH 61
0 (2) [8]
4 (5) [123]
147th St N
147th St N
0 (0) [3]
0 (0) [0]
TH 61
150th Street North
148th Street North
147th Street North
COUNTY 4A ROAD
4 COUNTY
8 COUNTY
Legend
Turning Movement Counts
AM (PM) [Daily]*
Intersection was counted in January 2023, volume was increased to match June 2022 count data
*Counts were gathered daily and during morning and evening peak hours
0
2,125
Feet
Source: MnDOT

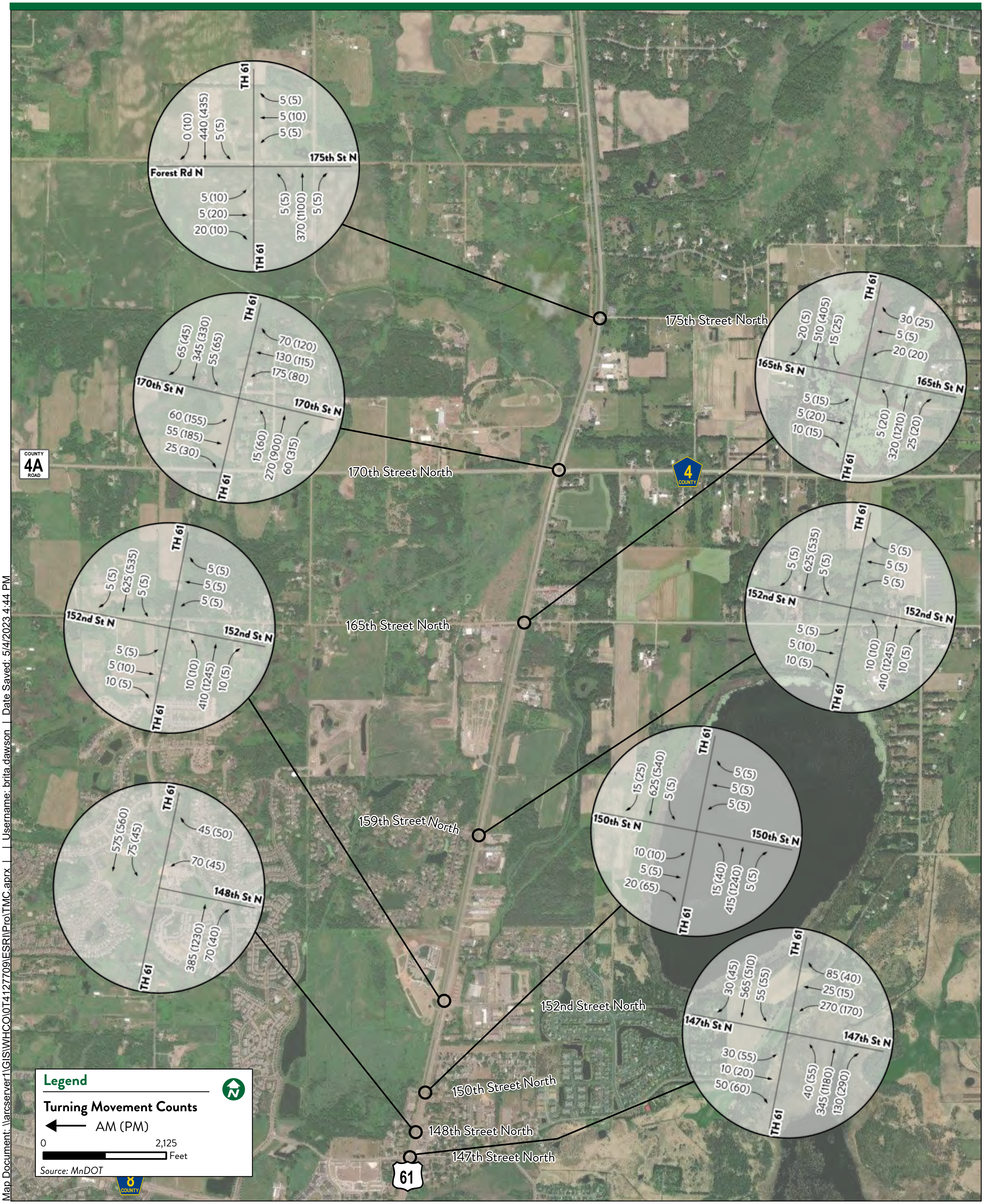


Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM

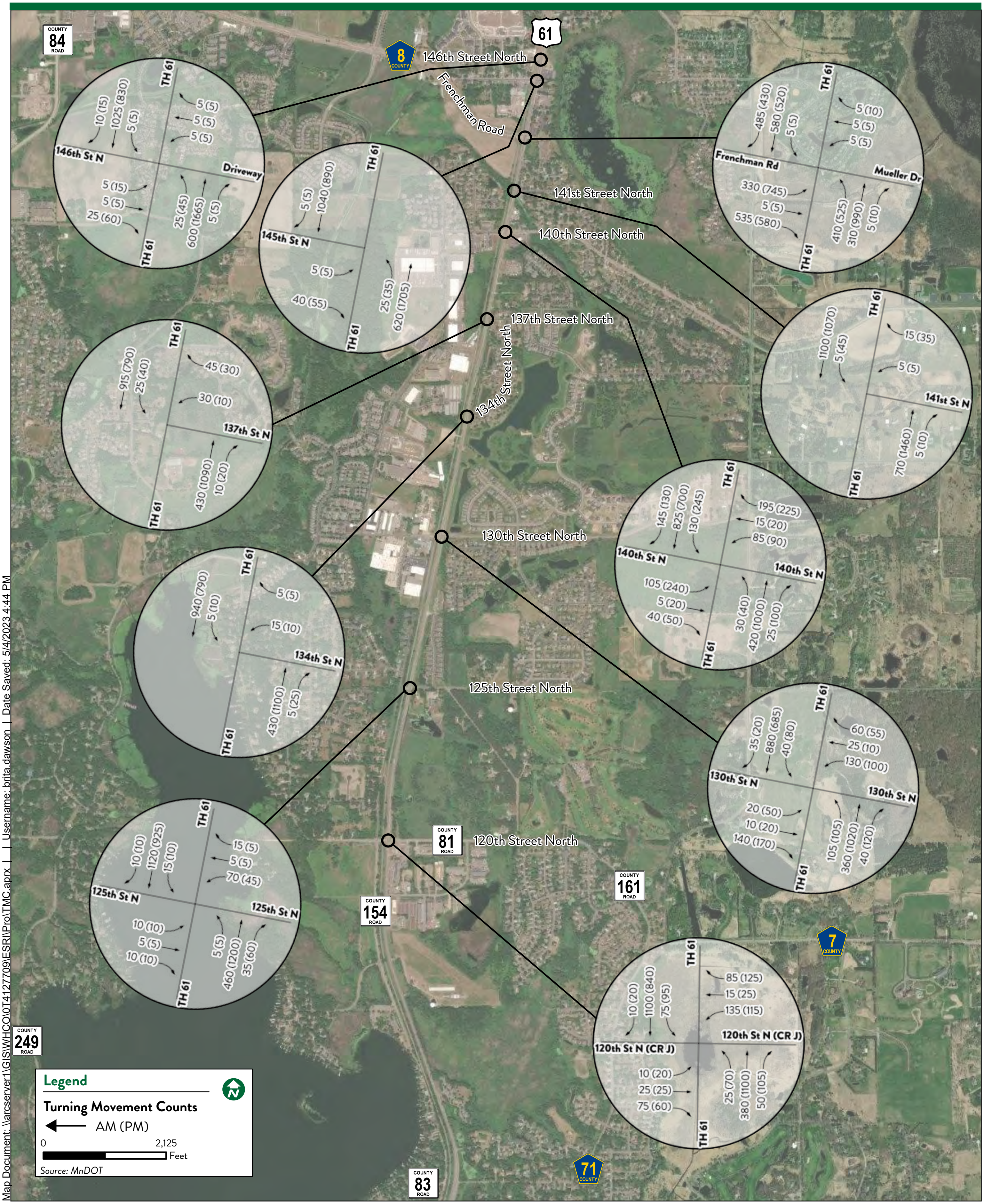

175th Street North
170th Street North
165th Street North
159th Street North
152nd Street North
150th Street North
148th Street North
147th Street North
Forest Rd N
175th St N
170th St N
165th St N
159th St N
152nd St N
150th St N
148th St N
147th St N
TH 61
Legend
Turning Movement Counts
Daily
Intersection counts were completed in January 2023
0
2,125
Feet
Source: MnDOT
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM



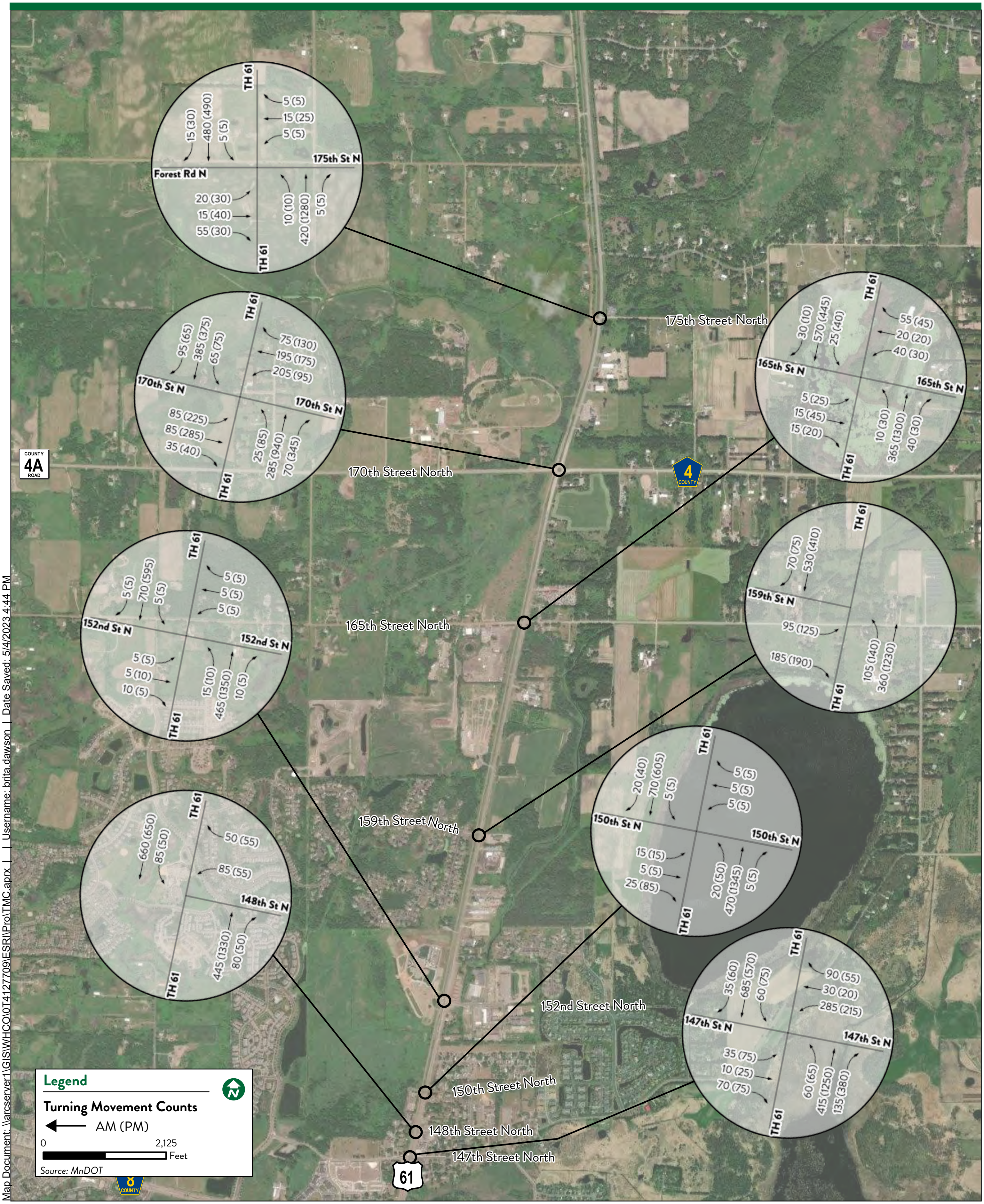
Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM



Map Document: \\arcserver1\GIS\WHCO\0T4127709\ESRI\Pro\TMC.aprx | | Username: brita.dawson | Date Saved: 5/4/2023 4:44 PM


TH 61
5 (5)
15 (25)
5 (5)
15 (30)
480 (490)
5 (5)
175th St N
Forest Rd N
20 (30)
15 (40)
55 (30)
10 (10)
420 (1280)
5 (5)
TH 61
175th Street North
TH 61
95 (65)
385 (375)
65 (75)
75 (130)
195 (175)
205 (95)
170th St N
170th St N
85 (225)
85 (285)
35 (40)
25 (85)
285 (940)
70 (345)
TH 61
170th Street North
COUNTY 4A ROAD
4 COUNTY
TH 61
30 (10)
570 (445)
25 (40)
55 (45)
20 (20)
40 (30)
165th St N
165th St N
5 (25)
15 (45)
15 (20)
10 (30)
365 (1300)
40 (30)
TH 61
TH 61
5 (5)
710 (595)
5 (5)
5 (5)
5 (5)
5 (5)
152nd St N
152nd St N
5 (5)
5 (10)
10 (5)
15 (10)
465 (1350)
10 (5)
TH 61
165th Street North
TH 61
70 (75)
530 (410)
159th St N
95 (125)
185 (190)
105 (140)
360 (1230)
TH 61
159th Street North
TH 61
20 (40)
710 (605)
5 (5)
5 (5)
5 (5)
5 (5)
150th St N
150th St N
15 (15)
5 (5)
25 (85)
20 (50)
470 (1345)
5 (5)
TH 61
TH 61
660 (650)
85 (50)
50 (55)
85 (55)
148th St N
445 (1330)
80 (50)
TH 61
TH 61
35 (60)
685 (570)
60 (75)
90 (55)
30 (20)
285 (215)
147th St N
147th St N
35 (75)
10 (25)
70 (75)
60 (65)
415 (1250)
135 (380)
TH 61
152nd Street North
150th Street North
148th Street North
147th Street North
61
8 COUNTY
Legend
Turning Movement Counts
AM (PM)
0
2,125
Feet
Source: MnDOT

Appendix B:
Traffic Operations

Washington County

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Existing Condition

Intersection	Approach	AM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
		Demand Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	1	-	5	6	8 - A	-	4 - A	5 - A	4 - A	-	25	50	25	50	-	25	50
	WB	2	1	-	3	18 - C	16 - C	-	18 - C		-	25	50	25	50	-	25	50
	NB	1	321	-	322	-	2 - A	-	2 - A		-	0	25	0	25	-	0	25
	SB	-	368	-	368	-	5 - A	-	5 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	34	28	13	75	6 - A	6 - A	6 - A	6 - A	7 - A	-	-	-	-	-	-	-	-
	WB	135	69	57	261	7 - A	7 - A	7 - A	7 - A		-	-	25	-	25	-	-	25
	NB	8	239	44	291	5 - A	5 - A	5 - A	5 - A		-	-	25	-	25	-	-	25
	SB	45	305	38	388	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	1	-	3	4	5 - A	-	4 - A	5 - A	3 - A	-	25	50	25	50	-	25	50
	WB	9	1	13	23	12 - B	7 - A	4 - A	8 - A		-	25	50	25	50	-	25	50
	NB	2	280	9	291	2 - A	5 - A	1 - A	5 - A		-	0	25	0	25	-	-	-
	SB	6	446	6	458	3 - A	2 - A	2 - A	3 - A		-	25	50	25	50	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	37	-	105	142	6 - A	-	6 - A	6 - A	6 - A	-	-	25	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	60	289	-	349	5 - A	5 - A	-	5 - A		200		25		25	200		25
	SB	-	434	26	460	-	7 - A	7 - A	7 - A		1150	-	50	-	50	1150	-	50
TH 61 at 152nd St N *Signalized*	EB	1	-	5	6	-	-	4 - A	4 - A	2 - A	-	0	25	25	25	-	25	25
	WB	2	1	-	3	98 - F	136 - F	-	111 - F		-	25	25	25	25	-	25	25
	NB	6	362	-	368	2 - A	1 - A	-	2 - A		250	25	25	25	75	-	-	-
	SB	-	562	-	562	-	3 - A	-	3 - A		-	-	-	25	75	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	7	-	11	18	11 - B	-	4 - A	7 - A	2 - A	-	25	50	25	50	-	25	50
	WB	1	1	3	5	8 - A	15 - C	4 - A	7 - A		-	25	50	25	50	-	25	50
	NB	8	358	-	366	4 - A	1 - A	-	2 - A		-	25	75	25	75	-	25	75
	SB	2	560	8	570	5 - A	2 - A	1 - A	2 - A		-	0	25	0	25	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	55	-	36	91	20 - C	-	10 - B	17 - C		-	50	150	-	-	-	50	150
	NB	-	360	53	413	-	2 - A	1 - A	2 - A		-	-	-	25	50	-	25	50
	SB	62	484	-	546	5 - A	2 - A	-	3 - A		75	50	125	50	125	-	-	-
TH 61 at 147th St N *Signalized*	EB	18	5	33	56	63 - E	60 - E	11 - B	31 - C	17 - B	135	25	75	50	100	-	50	100
	WB	189	14	54	257	70 - E	60 - E	19 - B	58 - E		175	175	325	75	400	-	75	400
	NB	29	321	87	437	8 - A	4 - A	2 - A	4 - A		275	25	50	50	150	250	25	50
	SB	34	524	17	575	8 - A	6 - A	1 - A	6 - A		250	25	50	100	250	250	25	25
TH 61 at 146th St N *Side Street Stop Controlled*	EB	1	-	11	12	-	-	6 - A	6 - A	2 - A	-	25	50	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	12	418	-	430	8 - A	0 - A	-	1 - A		150	25	50	-	-	-	-	-
	SB	-	745	5	750	-	2 - A	2 - A	2 - A		-	-	-	-	-	-	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	18	19	6 - A	-	5 - A	6 - A	1 - A	-	25	50	-	-	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	10	450	-	460	6 - A	2 - A	-	3 - A		250	25	50	-	-	-	-	-
	SB	-	731	2	733	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	201	1	451	653	57 - E	53 - D	30 - C	39 - D	22 - C	-	175	300	25	175	250	200	400
	WB	1	2	-	3	48 - D	80 - F	-	64 - E		-	25	25	25	25	-	25	25
	NB	349	257	0	606	25 - C	7 - A	-	18 - B		200	150	325	50	250	-	-	-
	SB	-	469	298	767	-	18 - B	4 - A	13 - B		-	-	-	150	400	325	50	100
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	2 - A	-	-	-	-	-	-	-	-
	WB	3	-	7	10	14 - B	-	4 - A	7 - A		-	25	50	-	-	-	25	50
	NB	-	585	3	588	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	3	917	-	920	4 - A	2 - A	-	3 - A		-	25	25	25	25	-	-	-
TH 61 at 140th St N *Signalized*	EB	82	4	30	116	64 - E	58 - E	9 - A	48 - D	12 - B	-	75	175	75	175	250	25	75
	WB	71	12	160	243	64 - E	70 - E	7 - A	27 - C		-	75	175	75	175	575	50	100
	NB	21	353	21	395	11 - B	5 - A	1 - A	6 - A		160	25	50	50	125	325	25	25
	SB	107	690	114	911	8 - A	6 - A	1 - A	6 - A		325	50	100	100	250	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	25	-	36	61	12 - B	-	5 - A	8 - A		-	50	75	-	-	-	50	75
	NB	-	360	8	368	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	20	759	-	779	4 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	2 - A	-	-	-	-	-	-	-	-
	WB	9	-	4	13	13 - B	-	3 - A	10 - B		-	25	50	-	-	-	25	50
	NB	-	361	4	365	-	3 - A	3 - A	3 - A		-	-	-	-	-	-	-	-
	SB	3	776	-	779	3 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	14	7	107	128	68 - E	71 - E	16 - B	25 - C	14 - B	275	25	75	25	75	150	50	150
	WB	91	18	54	163	70 - E	66 - E	5 - A	48 - D		250	100	175	25	75	175	25	75
	NB	79	301	27	407	15 - B	6 - A	2 - A	8 - A		250	50	100	50	150	250	25	25
	SB	33	726	35	794	8 - A	9 - A	3 - A	9 - A		275	25	50	100	300	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	3	7	17	17 - C	15 - C	9 - A	14 - B	6 - A	-	25	50	25	50	-	25	50
	WB	51	1	8	60	21 - C	-	7 - A	19 - C		-	50	100	50	100	-	50	100
	NB	1	389	24	414	-	4 - A	4 - A	4 - A		-	25	50	25	50	-	-	-
	SB	10	913	6	929	7 - A	6 - A	6 - A	7 - A		-	25	75	25	75	-	-	-
TH 61 at 120th St N *Signalized*	EB	7	22	59	88	76 - E	78 - E	23 - C	39 - D	23 - C	-	25	100	25	100	125	50	100
	WB	118	11	79	208	80 - F	98 - F	13 - B	55 - E		-	150	325	150	325	150	50	175
	NB	20	316	42	378	76 - E	11 - B	2 - A	14 - B		300	25	100	75	175	300	25	25
	SB	69	916	6	991	78 - E	14 - B	5 - A	19 - B		250	75	175	175	450	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Existing Condition

		PM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Demand Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	1	6	1	8	14 - B	13 - B	5 - A	13 - B	3 - A	-	25	50	25	50	-	25	50
	WB	2	2	-	4	13 - B	14 - B	-	14 - B		-	25	50	25	50	-	25	50
	NB	1	949	1	951	4 - A	3 - A	-	4 - A		-	0	25	0	25	-	0	25
	SB	-	360	2	362	-	4 - A	0 - A	4 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	91	101	15	207	7 - A	7 - A	7 - A	7 - A	50 - F	-	-	25	-	25	-	-	25
	WB	63	62	92	217	16 - C	16 - C	16 - C	16 - C		-	-	75	-	75	-	-	75
	NB	33	772	247	1052	80 - F	80 - F	80 - F	80 - F		-	-	725	-	725	-	-	725
	SB	49	294	25	368	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	5	4	5	14	86 - F	26 - D	12 - B	48 - E	12 - B	-	25	75	25	75	-	25	75
	WB	7	1	10	18	62 - F	18 - C	52 - F	55 - F		-	25	100	25	100	-	25	100
	NB	6	1013	9	1028	6 - A	13 - B	5 - A	13 - B		-	50	525	50	525	250	25	200
	SB	11	351	2	364	16 - C	4 - A	1 - A	5 - A		-	25	150	25	150	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	36	-	91	127	5 - A	-	5 - A	5 - A	18 - C	-	-	25	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	78	1027	-	1105	24 - C	24 - C	-	24 - C		200	-	350	-	350	200	-	350
	SB	-	333	28	361	-	6 - A	6 - A	6 - A		1150	-	25	-	25	1150	-	25
TH 61 at 152nd St N *Signalized*	EB	1	6	1	8	113 - F	94 - F	5 - A	83 - F	4 - A	-	25	25	25	50	-	25	50
	WB	2	2	-	4	76 - E	68 - E	-	70 - E		-	25	25	25	25	-	25	25
	NB	4	1109	4	1117	7 - A	4 - A	3 - A	5 - A		250	25	50	25	175	-	-	-
	SB	-	456	2	458	-	2 - A	1 - A	2 - A		-	-	-	25	50	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	6	1	43	50	32 - D	31 - D	5 - A	9 - A	4 - A	-	25	75	25	75	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	25	1060	1	1086	6 - A	4 - A	3 - A	5 - A		-	25	175	25	175	-	25	175
	SB	1	472	17	490	2 - A	2 - A	2 - A	2 - A		-	0	25	0	25	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	8 - A	-	-	-	-	-	-	-	-
	WB	35	-	42	77	84 - F	-	44 - E	64 - F		-	75	175	-	-	-	75	175
	NB	-	1060	31	1091	-	4 - A	2 - A	4 - A		-	-	-	25	25	-	25	25
	SB	38	470	-	508	21 - C	7 - A	-	8 - A		75	100	375	100	375	-	-	-
TH 61 at 147th St N *Signalized*	EB	36	9	40	85	65 - E	64 - E	18 - B	42 - D	17 - B	135	50	125	50	100	-	50	100
	WB	114	7	25	146	85 - F	54 - D	32 - C	75 - E		175	125	225	50	175	-	50	175
	NB	35	1031	196	1262	10 - B	12 - B	5 - A	11 - B		275	25	125	225	550	250	50	375
	SB	35	452	29	516	28 - C	10 - B	2 - A	11 - B		250	50	150	100	300	250	25	100
TH 61 at 146th St N *Side Street Stop Controlled*	EB	6	-	29	35	44 - E	-	28 - D	31 - D	7 - A	-	50	100	50	100	-	50	100
	WB	1	-	-	1	71 - F	-	-	71 - F		-	25	25	25	25	-	25	25
	NB	20	1227	2	1249	6 - A	1 - A	0 - A	2 - A		150	25	50	-	-	-	-	-
	SB	2	611	7	620	8 - A	18 - C	12 - B	18 - C		200	25	25	100	225	200	25	75
TH 61 at 145th St N *Side Street Stop Controlled*	EB	0	-	26	26	-	-	39 - E	39 - E	6 - A	-	25	75	-	-	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	16	1255	-	1271	10 - B	3 - A	-	4 - A		250	25	50	-	-	-	-	-
	SB	-	626	0	626	-	8 - A	-	8 - A		-	-	-	50	200	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	480	-	533	1013	92 - F	-	140 - F	117 - F	72 - E	-	625	1250	500	1625	250	300	450
	WB	3	2	4	9	109 - F	88 - F	10 - B	52 - D		-	25	25	25	25	-	25	25
	NB	487	779	6	1272	54 - D	30 - C	12 - B	40 - D		200	325	400	375	775	200	25	100
	SB	3	403	279	685	39 - D	98 - F	23 - C	68 - E		325	25	200	425	850	325	175	450
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	22 - C	-	-	-	-	-	-	-	-
	WB	-	-	17	17	-	-	38 - E	38 - E		-	25	75	-	-	-	25	75
	NB	-	1248	6	1254	-	6 - A	4 - A	6 - A		-	-	-	25	75	-	25	75
	SB	30	915	-	945	73 - F	42 - E	-	44 - E		-	400	875	400	875	-	-	-
TH 61 at 140th St N *Signalized*	EB	188	17	38	243	108 - F	116 - F	13 - B	94 - F	38 - D	-	250	475	250	475	250	50	225
	WB	73	15	180	268	56 - E	49 - D	34 - C	41 - D		-	75	175	75	175	575	125	225
	NB	30	898	85	1013	42 - D	38 - D	11 - B	36 - D		160	50	275	400	850	325	75	450
	SB	205	596	103	904	67 - E	15 - B	4 - A	26 - C		325	175	375	175	425	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	9	-	24	33	25 - D	-	12 - B	15 - C		-	25	75	-	-	-	25	75
	NB	-	952	15	967	-	4 - A	2 - A	4 - A		-	-	-	-	-	-	-	-
	SB	34	650	-	684	14 - B	4 - A	-	5 - A		150	25	75	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	5	-	4	9	20 - C	-	8 - A	14 - B		-	25	50	-	-	-	25	50
	NB	-	959	20	979	-	4 - A	3 - A	4 - A		-	-	-	-	-	-	-	-
	SB	8	680	-	688	6 - A	2 - A	-	3 - A		175	25	50	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	40	16	128	184	64 - E	68 - E	14 - B	30 - C	13 - B	275	50	150	25	100	150	75	125
	WB	68	7	47	122	66 - E	60 - E	14 - B	46 - D		250	75	150	25	75	175	25	75
	NB	83	881	80	1044	13 - B	9 - A	4 - A	9 - A		250	50	75	75	250	250	25	50
	SB	72	593	16	681	21 - C	8 - A	3 - A	10 - B		275	50	75	75	175	325	0	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	8	2	6	16	46 - E	33 - D	10 - B	27 - D	9 - A	-	25	50	25	50	-	25	50
	WB	32	1	3	36	53 - F	68 - F	40 - E	53 - F		-	50	125	50	125	-	50	125
	NB	3	1093	44	1140	14 - B	9 - A	8 - A	9 - A		-	25	50	25	50	-	-	-
	SB	5	743	6	754	12 - B	5 - A	5 - A	6 - A		-	25	150	25	150	-	-	-
TH 61 at 120th St N *Signalized*	EB	14	23	48	85	73 - E	78 - E	15 - B	41 - D	30 - C	-	50	125	50	125	125	25	100
	WB	103	19	114	236	76 - E	79 - E	37 - D	57 - E		-	125	275	125	275	150	75	200
	NB	56	920	92	1068	72 - E	29 - C	11 - B	30 - C		300	75	225	300	725	300	25	50
	SB	86	687	17	790	87 - F	14 - B	4 - A	22 - C		250	75	200	150	300	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2035 No Build

Intersection	Approach	2035 AM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
		Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	3	-	22	25	6 - A	-	4 - A	5 - A	3 - A	-	25	50	25	50	-	25	50
	WB	3	7	-	10	10 - B	7 - A	-	8 - A		-	25	50	25	50	-	25	50
	NB	2	354	-	356	8 - A	5 - A	-	6 - A		-	25	25	25	25	-	25	25
	SB	-	433	-	433	-	1 - A	-	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	55	57	23	135	6 - A	6 - A	6 - A	6 - A	7 - A	-		0		0	-	50	0
	WB	170	120	68	358	7 - A	7 - A	7 - A	7 - A		-		25		25	-	75	25
	NB	12	283	49	344	5 - A	5 - A	5 - A	5 - A		-		25		25	-	50	25
	SB	53	364	71	488	7 - A	7 - A	7 - A	7 - A		-		50		50	-	100	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	4	-	6	10	13 - B	-	5 - A	9 - A	5 - A	-	25	50	25	50	-	25	50
	WB	21	4	25	50	10 - B	14 - B	4 - A	8 - A		-	50	75	50	75	-	50	75
	NB	4	367	21	392	7 - A	5 - A	5 - A	6 - A		-	25	25	25	25	-	-	-
	SB	9	514	19	542	4 - A	5 - A	3 - A	5 - A		-	25	50	25	50	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	63	-	134	197	8 - A	-	8 - A	8 - A	7 - A	-	-	25	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	84	340	-	424	6 - A	6 - A	-	6 - A		-	-	25	-	25	-	-	25
	SB	-	493	49	542	-	8 - A	8 - A	8 - A		-	-	75	-	75	-	-	75
TH 61 at 152nd St N *Signalized*	EB	1	-	8	9	41 - D	-	6 - A	10 - B	6 - A	-	25	25	25	25	-	25	25
	WB	1	1	-	2	78 - E	52 - D	-	65 - E		-	25	25	0	25	-	0	25
	NB	8	418	-	426	3 - A	1 - A	-	2 - A		250	25	50	25	50	-	-	-
	SB	-	627	-	627	-	9 - A	-	9 - A		-	-	-	25	75	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	12	-	18	30	11 - B	-	5 - A	8 - A	3 - A	-	25	50	25	50	-	25	50
	WB	1	1	3	5	6 - A	10 - B	4 - A	6 - A		-	25	50	25	50	-	25	50
	NB	13	411	-	424	5 - A	2 - A	-	3 - A		-	25	125	25	125	-	25	125
	SB	2	649	14	665	5 - A	3 - A	2 - A	3 - A		-	25	25	25	25	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	5 - A	-	-	-	-	-	-	-	-
	WB	69	-	43	112	36 - E	-	19 - C	30 - D		-	75	200	-	-	-	75	200
	NB	-	419	71	490	-	2 - A	2 - A	2 - A		-	-	-	25	25	-	25	25
	SB	67	573	-	640	6 - A	3 - A	-	4 - A		75	50	175	50	175	-	-	-
TH 61 at 147th St N *Signalized*	EB	25	16	54	95	60 - E	51 - D	15 - B	33 - C	21 - C	135	25	100	50	125	-	50	125
	WB	268	25	88	381	64 - E	51 - D	18 - B	53 - D		175	225	350	125	475	-	125	475
	NB	37	363	121	521	22 - C	9 - A	2 - A	9 - A		275	25	100	75	250	250	25	50
	SB	54	596	27	677	18 - B	12 - B	2 - A	13 - B		250	50	200	150	375	250	25	100
TH 61 at 146th St N *Side Street Stop Controlled*	EB	2	-	17	19	28 - D	-	9 - A	11 - B	2 - A	-	25	50	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	20	501	-	521	9 - A	0 - A	-	1 - A		150	25	75	-	-	-	-	-
	SB	-	899	8	907	-	3 - A	2 - A	3 - A		-	-	-	-	-	200	0	25
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	32	33	22 - C	-	10 - B	11 - B	1 - A	-	25	75	-	-	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	18	543	-	561	8 - A	2 - A	-	3 - A		250	25	50	-	-	-	-	-
	SB	-	873	4	877	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	245	1	477	723	90 - F	59 - E	44 - D	60 - E	30 - C	-	250	500	50	525	250	225	450
	WB	1	4	-	5	114 - F	73 - E	-	82 - F		-	25	25	25	50	-	25	50
	NB	382	325	0	707	32 - C	6 - A	-	21 - C		200	175	400	50	375	-	-	-
	SB	-	548	375	923	-	20 - C	6 - A	15 - B		-	-	-	200	475	325	75	225
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	3	-	11	14	50 - F	-	12 - B	21 - C		-	25	50	-	-	-	25	50
	NB	-	684	3	687	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	2	985	-	987	7 - A	3 - A	-	4 - A		-	25	75	25	75	-	-	-
TH 61 at 140th St N *Signalized*	EB	101	8	37	146	68 - E	58 - E	11 - B	54 - D	14 - B	-	125	250	125	250	250	25	75
	WB	78	15	189	282	62 - E	55 - E	10 - B	27 - C		-	100	200	100	200	575	75	125
	NB	20	396	26	442	14 - B	7 - A	2 - A	8 - A		160	25	75	50	200	325	25	25
	SB	111	752	119	982	11 - B	7 - A	2 - A	7 - A		325	50	75	125	300	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	25	-	41	66	18 - C	-	8 - A	12 - B		-	50	100	-	-	-	50	100
	NB	-	399	10	409	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	24	829	-	853	5 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	10	-	6	16	12 - B	-	3 - A	9 - A		-	25	50	-	-	-	25	50
	NB	-	404	5	409	-	4 - A	3 - A	4 - A		-	-	-	-	-	-	-	-
	SB	4	835	-	839	4 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	14	8	119	141	64 - E	68 - E	21 - C	28 - C	18 - B	275	25	75	25	100	150	75	150
	WB	110	20	58	188	64 - E	76 - E	6 - A	48 - D		250	100	225	25	100	175	50	75
	NB	102	340	32	474	40 - D	12 - B	3 - A	18 - B		250	75	175	100	250	250	25	50
	SB	29	777	38	844	9 - A	10 - B	3 - A	10 - B		275	25	50	100	250	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	3	7	17	21 - C	20 - C	20 - C	21 - C	7 - A	-	25	75	25	75	-	25	75
	WB	55	1	9	65	28 - D	7 - A	11 - B	26 - D		-	50	125	50	125	-	50	125
	NB	1	445	35	481	7 - A	4 - A	4 - A	5 - A		-	25	25	25	25	-	-	-
	SB	11	991	6	1008	6 - A	7 - A	6 - A	7 - A		-	25	50	25	50	-	-	-
TH 61 at 120th St N *Signalized*	EB	10	20	63	93	75 - E	81 - F	23 - C	42 - D	27 - C	-	50	100	50	100	125	50	100
	WB	121	9	89	219	130 - F	152 - F	32 - C	92 - F		-	200	450	200	450	150	75	200
	NB	22	363	48	433	74 - E	13 - B	2 - A	15 - B		300	25	75	100	250	300	25	50
	SB	72	991	6	1069	72 - E	14 - B	6 - A	18 - B		250	75	175	175	350	350	0	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2035 No Build

		2035 PM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N	EB	7	18	7	32	14 - B	14 - B	5 - A	13 - B	7 - A	-	25	75	25	75	-	25	75
Side Street Stop Controlled	WB	4	11	-	15	12 - B	19 - C	-	18 - C		-	25	50	25	50	-	25	50
	NB	5	1103	1	1109	8 - A	9 - A	1 - A	9 - A		-	25	75	25	75	-	25	75
	SB	-	447	8	455	-	1 - A	1 - A	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N	EB	154	182	28	364	11 - B	11 - B	11 - B	11 - B	164 - F	-	-	75		75	-	-	75
Single Lane Roundabout	WB	79	126	114	319	50 - F	50 - F	50 - F	50 - F		-	-	200		200	-	-	200
	NB	40	625	214	879	289 - F	289 - F	289 - F	289 - F		-	-	1775		1775	-	-	1775
	SB	61	338	42	441	9 - A	9 - A	9 - A	9 - A		-	-	50		50	-	-	50
TH 61 at 165th St N	EB	9	18	11	38	41 - E	26 - D	13 - B	26 - D	11 - B	-	50	75	50	75	-	50	75
Side Street Stop Controlled	WB	15	5	23	43	46 - E	34 - D	25 - D	34 - D		-	50	100	50	100	-	50	100
	NB	14	1109	15	1138	13 - B	12 - B	10 - B	12 - B		-	25	100	25	100	-	-	-
	SB	22	439	4	465	13 - B	6 - A	6 - A	7 - A		-	25	150	25	150	-	-	-
TH 61 at 159th St N	EB	63	-	126	189	7 - A	- A	7 - A	7 - A	50 - F	-	-	25	-	25	-	-	25
Single Lane Roundabout	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	93	998	-	1091	71 - F	71 - F	-	71 - F		-	-	775	-	775	-	-	775
	SB	-	384	51	435	-	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 152nd St N	EB	1	10	1	12	51 - D	78 - E	9 - A	70 - E	6 - A	-	25	25	25	75	-	25	75
Signalized	WB	2	2	-	4	52 - D	107 - F	-	80 - F		-	25	25	25	25	-	25	25
	NB	5	1165	6	1176	4 - A	4 - A	4 - A	4 - A		250	25	25	25	150	250	0	25
	SB	-	525	4	529	-	8 - A	6 - A	8 - A		-	-	-	25	125	200	0	25
TH 61 at 150th St N	EB	11	1	68	80	48 - E	33 - D	10 - B	16 - C	5 - A	-	50	100	50	100	-	50	100
Side Street Stop Controlled	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	31	1105	1	1137	7 - A	5 - A	5 - A	6 - A		-	50	300	50	300	-	50	300
	SB	1	536	27	564	16 - C	4 - A	2 - A	4 - A		-	25	100	25	100	-	-	-
TH 61 at 148th St N	EB	-	-	-	0	-	-	-	-	21 - C	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	51	-	47	98	302 - F	-	180 - F	244 - F		-	200	525	-	-	-	200	525
	NB	-	1123	33	1156	-	4 - A	3 - A	4 - A		-	-	-	25	25	-	25	25
	SB	41	553	-	594	33 - D	17 - C	-	19 - C		75	175	500	175	500	-	-	-
TH 61 at 147th St N	EB	53	16	56	125	67 - E	74 - E	29 - C	51 - D	25 - C	135	50	150	75	150	-	75	150
Signalized	WB	168	14	33	215	121 - F	67 - E	38 - D	105 - F		175	200	350	100	500	-	100	500
	NB	42	1082	260	1384	19 - B	13 - B	5 - A	12 - B		275	25	150	225	500	250	50	375
	SB	55	505	40	600	47 - D	21 - C	3 - A	23 - C		250	50	175	150	350	250	25	100
TH 61 at 146th St N	EB	10	-	44	54	272 - F	-	190 - F	206 - F	19 - C	-	100	325	100	325	-	100	325
Side Street Stop Controlled	WB	1	-	-	1	447 - F	-	-	447 - F		-	25	25	25	25	-	25	25
	NB	24	1341	2	1367	9 - A	1 - A	0 - A	2 - A		150	25	50	-	-	-	-	-
	SB	0	717	13	730	-	39 - E	34 - D	39 - E		200	0	25	275	700	200	50	275
TH 61 at 145th St N	EB	0	-	36	36	-	-	215 - F	215 - F	14 - B	-	75	200	-	-	-	75	200
Side Street Stop Controlled	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	21	1365	-	1386	14 - B	4 - A	-	5 - A		250	25	50	-	-	-	-	-
	SB	-	711	-	711	-	22 - C	-	22 - C		-	-	-	175	325	-	-	-
TH 61 at Frenchman Rd/Mueller Dr	EB	609	0	553	1162	61 - E	-	102 - F	81 - F	88 - F	-	475	875	400	1250	250	325	450
Signalized	WB	3	4	5	12	78 - E	63 - E	38 - D	57 - E		-	25	50	25	50	-	25	50
	NB	417	763	8	1188	104 - F	66 - E	31 - C	80 - F		200	375	400	725	875	200	25	25
	SB	3	443	326	772	159 - F	154 - F	52 - D	111 - F		325	25	150	725	975	325	375	525
TH 61 at 141st St N	EB	-	-	-	0	-	-	-	-	40 - E	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	-	-	19	19	-	-	197 - F	197 - F		-	50	125	-	-	-	50	125
	NB	-	1191	4	1195	-	32 - D	26 - D	32 - D		-	-	-	450	700	-	450	700
	SB	31	933	-	964	82 - F	46 - E	-	48 - E		-	475	875	475	875	-	-	-
TH 61 at 140th St N	EB	207	16	40	263	200 - F	214 - F	24 - C	175 - F	86 - F	-	425	725	425	725	250	125	450
Signalized	WB	83	18	205	306	51 - D	54 - D	39 - D	44 - D		-	75	175	75	175	575	125	275
	NB	28	834	70	932	128 - F	138 - F	83 - F	134 - F		160	75	325	1050	1475	325	225	525
	SB	182	607	111	900	66 - E	14 - B	5 - A	24 - C		325	150	450	150	500	325	25	150
TH 61 at 137th St N	EB	-	-	-	0	-	-	-	-	67 - F	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	8	-	30	38	211 - F	-	252 - F	244 - F		-	100	250	-	-	-	100	250
	NB	-	954	19	973	-	107 - F	62 - F	107 - F		-	-	-	800	1675	275	75	475
	SB	36	664	-	700	15 - C	3 - A	-	4 - A		150	25	75	-	-	-	-	-
TH 61 at 134th St N	EB	-	-	-	0	-	-	-	-	32 - D	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	5	-	6	11	139 - F	-	113 - F	125 - F		-	25	75	-	-	-	25	75
	NB	-	1049	19	1068	-	52 - F	70 - F	53 - F		-	-	-	400	1500	275	75	475
	SB	6	709	-	715	6 - A	2 - A	-	3 - A		175	25	50	-	-	-	-	-
TH 61 at 130th St N	EB	43	16	145	204	66 - E	71 - E	15 - B	31 - C	18 - B	275	50	150	25	100	150	75	150
Signalized	WB	86	9	47	142	68 - E	79 - E	21 - C	54 - D		250	100	175	25	75	175	50	100
	NB	102	974	103	1179	18 - B	17 - B	8 - A	17 - B		250	50	100	200	475	250	25	50
	SB	68	618	20	706	32 - C	10 - B	2 - A	12 - B		275	50	125	100	275	325	25	25
TH 61 at 125th St N	EB	9	2	8	19	78 - F	48 - E	24 - C	53 - F	11 - B	-	25	75	25	75	-	25	75
Side Street Stop Controlled	WB	39	1	2	42	79 - F	56 - F	81 - F	79 - F		-	50	125	50	125	-	50	125
	NB	2	1192	52	1246	14 - B	11 - B	9 - A	11 - B		-	25	75	25	75	-	-	-
	SB	5	811	8	824	9 - A	5 - A	5 - A	6 - A		-	25	75	25	75	-	-	-
TH 61 at 120th St N	EB	15	26	58	99	73 - E	76 - E	17 - B	41 - D	37 - D	-	50	125	50	125	125	50	100
Signalized	WB	105	21	128	254	140 - F	126 - F	58 - E	98 - F		-	200	475	200	475	150	125	200
	NB	60	1025	95	1180	88 - F	36 - D	13 - B	37 - D		300	75	325	375	950	300	50	500
	SB	80	760	17	857	80 - F	14 - B	5 - A	20 - C		250	75	200	150	325	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2045 No Build

		2045 AM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	17	-	57	74	13 - B	-	5 - A	7 - A	4 - A	-	50	100	50	100	-	50	100
	WB	4	12	-	16	13 - B	10 - B	-	11 - B		-	25	75	25	75	-	25	75
	NB	6	414	-	420	6 - A	6 - A	-	6 - A		-	25	50	25	50	-	25	50
	SB	-	477	-	477	-	1 - A	-	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	34	28	13	75	6 - A	6 - A	6 - A	6 - A	7 - A	-	-	0	-	0	-	-	0
	WB	135	69	57	261	7 - A	7 - A	7 - A	7 - A		-	-	25	-	25	-	-	25
	NB	8	231	44	283	5 - A	5 - A	5 - A	5 - A		-	-	25	-	25	-	-	25
	SB	38	297	45	380	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	4	-	13	17	16 - C	-	8 - A	10 - B	7 - A	-	25	75	25	75	-	25	75
	WB	43	16	49	108	16 - C	20 - C	9 - A	14 - B		-	50	125	50	125	-	50	125
	NB	9	408	36	453	10 - B	7 - A	6 - A	7 - A		-	25	100	25	100	250	0	25
	SB	21	568	28	617	6 - A	6 - A	5 - A	6 - A		-	25	100	25	100	275	0	25
TH 61 at 159th St N *Single Lane Roundabout*	EB	95	-	182	277	10 - B	-	10 - B	10 - B	9 - A	-	-	50	-	50	-	-	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	104	360	-	464	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	250	-	50
	SB	-	526	69	595	9 - A	9 - A	9 - A	9 - A		-	-	75	-	75	275	-	75
TH 61 at 152nd St N *Signalized*	EB	2	-	10	12	82 - F	-	7 - A	20 - C	7 - A	-	25	25	25	25	-	25	25
	WB	6	2	-	8	73 - E	122 - F	-	86 - F		-	25	50	25	25	-	25	25
	NB	10	478	-	488	4 - A	2 - A	-	3 - A		250	25	50	25	100	-	-	-
	SB	-	696	-	696	-	10 - B	-	10 - B		-	-	-	25	150	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	15	-	21	36	20 - C	-	10 - B	15 - C	4 - A	-	25	75	25	75	-	25	75
	WB	0	1	4	5	-	10 - B	4 - A	6 - A		-	25	50	25	50	-	25	50
	NB	16	476	-	492	7 - A	2 - A	-	3 - A		-	25	175	25	175	-	25	175
	SB	2	735	16	753	4 - A	4 - A	2 - A	4 - A		-	25	50	25	50	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	16 - C	-	-	-	-	-	-	-	-
	WB	74	-	50	124	142 - F	-	131 - F	138 - F		-	175	500	-	-	-	175	500
	NB	-	491	79	570	-	2 - A	2 - A	2 - A		-	-	-	25	50	-	25	50
	SB	81	652	-	733	10 - B	6 - A	-	7 - A		75	75	350	75	350	-	-	-
TH 61 at 147th St N *Signalized*	EB	30	12	69	111	53 - D	46 - D	17 - B	30 - C	23 - C	135	25	100	50	125	-	50	125
	WB	298	27	97	422	70 - E	43 - D	22 - C	58 - E		175	250	350	150	625	-	150	625
	NB	56	425	117	598	29 - C	8 - A	2 - A	9 - A		275	50	125	75	225	250	25	50
	SB	52	690	39	781	22 - C	16 - B	3 - A	16 - B		250	50	225	225	400	250	25	125
TH 61 at 146th St N *Side Street Stop Controlled*	EB	1	-	19	20	20 - C	-	10 - B	11 - B	3 - A	-	25	50	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	21	572	-	593	22 - C	0 - A	-	1 - A		150	25	100	-	-	-	-	-
	SB	-	1051	8	1059	-	3 - A	2 - A	3 - A		-	-	-	25	25	200	0	25
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	35	36	18 - C	-	12 - B	13 - B	2 - A	-	25	75	-	-	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	18	618	-	636	15 - C	2 - A	-	3 - A		250	25	75	-	-	-	-	-
	SB	-	1020	3	1023	-	1 - A	0 - A	1 - A		-	-	-	25	100	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	318	3	537	858	114 - F	86 - F	74 - E	89 - F	45 - D	-	375	725	225	975	250	325	450
	WB	1	5	-	6	64 - E	80 - F	-	78 - E		-	25	25	25	50	-	25	50
	NB	418	338	-	756	38 - D	8 - A	-	25 - C		200	225	400	100	475	-	-	-
	SB	-	602	469	1071	-	34 - C	11 - B	24 - C		-	-	-	350	800	325	150	525
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	3	-	13	16	42 - E	-	7 - A	14 - B		-	25	50	-	-	-	25	50
	NB	-	720	5	725	-	2 - A	2 - A	2 - A		-	-	-	-	-	-	-	-
	SB	5	1077	-	1082	11 - B	4 - A	-	5 - A		-	25	225	25	225	-	-	-
TH 61 at 140th St N *Signalized*	EB	109	5	41	155	78 - E	59 - E	16 - B	61 - E	15 - B	-	125	275	125	275	250	50	100
	WB	79	17	194	290	58 - E	57 - E	11 - B	27 - C		-	100	200	100	200	575	75	150
	NB	32	424	22	478	17 - B	9 - A	2 - A	10 - B		160	25	75	75	275	325	25	50
	SB	117	818	132	1067	10 - B	8 - A	2 - A	8 - A		325	50	100	150	325	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	24	-	47	71	19 - C	-	8 - A	12 - B		-	50	100	-	-	-	50	100
	NB	-	433	11	444	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	21	901	-	922	5 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	14	-	4	18	17 - C	-	3 - A	14 - B		-	25	50	-	-	-	25	50
	NB	-	441	4	445	-	4 - A	3 - A	4 - A		-	-	-	-	-	-	-	-
	SB	3	910	-	913	4 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	17	9	141	167	57 - E	68 - E	32 - C	37 - D	22 - C	275	25	75	25	175	150	100	200
	WB	126	23	59	208	62 - E	68 - E	6 - A	47 - D		250	125	200	25	125	175	25	75
	NB	99	370	38	507	55 - E	13 - B	3 - A	21 - C		250	75	175	100	275	250	25	50
	SB	32	846	37	915	13 - B	15 - B	5 - A	15 - B		275	25	75	150	450	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	8	4	9	21	33 - D	26 - D	23 - C	28 - D	10 - B	-	25	75	25	75	-	25	75
	WB	72	1	10	83	50 - F	13 - B	28 - D	47 - E		-	75	175	75	175	-	75	175
	NB	1	459	32	492	18 - C	5 - A	4 - A	5 - A		-	25	75	25	75	-	-	-
	SB	14	1086	6	1106	12 - B	9 - A	6 - A	10 - B		-	25	175	25	175	-	-	-
TH 61 at 120th St N *Signalized*	EB	6	23	74	103	77 - E	72 - E	34 - C	45 - D	43 - D	-	50	150	50	150	125	50	150
	WB	137	11	86	234	226 - F	202 - F	95 - F	177 - F		-	350	650	350	650	150	100	200
	NB	27	375	57	459	79 - E	14 - B	4 - A	17 - B		300	25	100	100	250	300	25	50
	SB	75	1095	6	1176	71 - E	23 - C	10 - B	26 - C		250	75	325	275	650	350	25	125

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2045 No Build

		2045 PM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N	EB	27	34	30	91	48 - E	34 - D	6 - A	29 - D	9 - A	-	50	175	50	175	-	50	175
Side Street Stop Controlled	WB	1	21	-	22	15 - C	23 - C	-	23 - C		-	25	75	25	75	-	25	75
	NB	9	1108	1	1118	12 - B	10 - B	12 - B	11 - B		-	25	75	25	75	-	25	75
	SB	-	486	30	516	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N	EB	225	282	38	545	26 - D	26 - D	26 - D	26 - D	287 - F	-	-	200	-	200	-	-	200
Single Lane Roundabout	WB	92	171	127	390	184 - F	184 - F	184 - F	184 - F		-	-	500	-	500	-	-	500
	NB	85	940	343	1368	521 - F	521 - F	521 - F	521 - F		-	-	2575	-	2575	250	-	2575
	SB	71	371	63	505	13 - B	13 - B	13 - B	13 - B		-	-	100	-	100	275	-	100
TH 61 at 165th St N	EB	21	39	19	79	294 - F	243 - F	134 - F	231 - F	27 - D	-	150	375	150	375	-	150	375
Side Street Stop Controlled	WB	24	18	41	83	177 - F	170 - F	111 - F	143 - F		-	125	350	125	350	-	125	350
	NB	28	1103	28	1159	16 - C	14 - B	10 - B	14 - B		-	25	200	25	200	-	-	-
	SB	40	486	12	538	17 - C	9 - A	4 - A	10 - B		-	50	275	50	275	-	-	-
TH 61 at 159th St N	EB	121	-	188	309	9 - A	-	9 - A	9 - A	91 - F	-	-	50	-	50	-	-	50
Single Lane Roundabout	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	139	1230	-	1369	139 - F	139 - F	139 - F	139 - F		-	-	1250	-	1250	250	-	1250
	SB	-	410	75	485	8 - A	8 - A	8 - A	8 - A		-	-	50	-	50	275	-	50
TH 61 at 152nd St N	EB	1	9	2	12	98 - F	88 - F	8 - A	76 - E	7 - A	-	25	25	25	75	-	25	75
Signalized	WB	3	4	-	7	91 - F	73 - E	-	81 - F		-	25	50	25	50	-	25	50
	NB	8	1177	5	1190	7 - A	5 - A	2 - A	6 - A		250	25	50	50	175	-	-	-
	SB	-	590	5	595	-	9 - A	8 - A	9 - A		-	-	-	25	125	-	-	-
TH 61 at 150th St N	EB	11	1	78	90	59 - F	31 - D	28 - D	32 - D	7 - A	-	50	200	50	200	-	50	200
Side Street Stop Controlled	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	36	1107	2	1145	7 - A	6 - A	4 - A	7 - A		-	50	325	50	325	-	50	325
	SB	-	603	41	644	-	5 - A	3 - A	5 - A		-	25	150	25	150	75	25	50
TH 61 at 148th St N	EB	-	-	-	0	-	-	-	-	33 - D	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	54	-	57	111	463 - F	-	333 - F	397 - F		-	325	725	-	-	-	325	725
	NB	-	1117	39	1156	-	4 - A	3 - A	4 - A		-	-	-	25	50	-	25	50
	SB	46	627	-	673	36 - E	20 - C	-	22 - C		75	200	575	200	575	-	-	-
TH 61 at 147th St N	EB	73	25	77	175	58 - E	58 - E	34 - C	48 - D	48 - D	135	75	200	75	200	-	75	200
Signalized	WB	220	18	56	294	278 - F	159 - F	142 - F	245 - F		175	275	350	475	1175	-	475	1175
	NB	46	1049	311	1406	25 - C	17 - B	8 - A	16 - B		275	50	225	300	650	250	75	425
	SB	64	546	53	663	47 - D	27 - C	3 - A	28 - C		250	75	225	200	400	250	25	325
TH 61 at 146th St N	EB	10	-	56	66	496 - F	-	391 - F	407 - F	33 - D	-	200	800	200	800	-	200	800
Side Street Stop Controlled	WB	1	-	-	1	418 - F	-	-	418 - F		-	25	50	25	50	-	25	50
	NB	30	1349	2	1381	10 - B	1 - A	0 - A	2 - A		150	25	50	25	25	-	-	-
	SB	3	794	12	809	54 - F	55 - F	41 - E	55 - F		200	25	100	425	950	200	50	325
TH 61 at 145th St N	EB	0	-	51	51	-	-	436 - F	436 - F	22 - C	-	175	500	-	-	-	175	500
Side Street Stop Controlled	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	29	1398	-	1427	11 - B	4 - A	-	5 - A		250	25	50	-	-	-	-	-
	SB	-	763	1	764	-	27 - D	0 - A	27 - D		-	-	-	200	325	-	-	-
TH 61 at Frenchman Rd/Mueller Dr	EB	746	0	591	1337	172 - F	-	156 - F	165 - F	125 - F	-	1200	2650	800	2525	250	350	450
Signalized	WB	2	3	6	11	102 - F	82 - F	30 - C	58 - E		-	25	50	25	50	-	25	50
	NB	386	746	6	1138	122 - F	71 - E	36 - D	89 - F		200	375	400	750	875	200	25	250
	SB	5	483	347	835	113 - F	153 - F	56 - E	113 - F		325	25	225	775	975	325	400	525
TH 61 at 141st St N	EB	-	-	-	0	-	-	-	-	50 - F	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	-	-	28	28	-	-	476 - F	476 - F		-	100	250	-	-	-	100	250
	NB	-	1132	2	1134	-	39 - E	30 - D	39 - E		-	-	-	500	700	-	500	700
	SB	39	961	-	1000	81 - F	49 - E	-	51 - F		-	525	875	525	875	-	-	-
TH 61 at 140th St N	EB	250	19	50	319	449 - F	422 - F	265 - F	419 - F	127 - F	-	1000	1600	1000	1600	250	250	450
Signalized	WB	91	19	224	334	50 - D	50 - D	41 - D	44 - D		-	100	225	100	225	575	150	275
	NB	25	764	63	852	170 - F	169 - F	111 - F	165 - F		160	100	325	1125	1475	325	250	525
	SB	199	627	113	939	55 - E	15 - B	5 - A	23 - C		325	150	400	150	500	325	25	150
TH 61 at 137th St N	EB	-	-	-	0	-	-	-	-	75 - F	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	8	-	30	38	90 - F	-	107 - F	104 - F		-	50	125	-	-	-	50	125
	NB	-	891	16	907	-	132 - F	71 - F	131 - F		-	-	-	900	1675	275	75	475
	SB	38	694	-	732	13 - B	4 - A	-	5 - A		150	25	75	-	-	-	-	-
TH 61 at 134th St N	EB	-	-	-	0	-	-	-	-	61 - F	-	-	-	-	-	-	-	-
Side Street Stop Controlled	WB	7	-	6	13	44 - E	-	52 - F	48 - E		-	25	75	-	-	-	25	75
	NB	-	1006	15	1021	-	104 - F	106 - F	105 - F		-	-	-	775	2075	275	75	475
	SB	10	733	-	743	4 - A	2 - A	-	3 - A		175	25	50	-	-	-	-	-
TH 61 at 130th St N	EB	52	19	170	241	67 - E	66 - E	20 - C	34 - C	49 - D	275	50	150	25	100	150	75	200
Signalized	WB	101	11	54	166	66 - E	55 - E	31 - C	54 - D		250	100	225	25	125	175	50	100
	NB	94	982	112	1188	67 - E	77 - E	53 - D	74 - E		250	150	500	700	2200	250	150	500
	SB	70	645	16	731	32 - C	10 - B	3 - A	12 - B		275	50	100	100	300	325	25	25
TH 61 at 125th St N	EB	9	4	8	21	235 - F	87 - F	62 - F	141 - F	25 - D	-	50	100	50	100	-	50	100
Side Street Stop Controlled	WB	46	1	3	50	278 - F	45 - E	424 - F	283 - F		-	125	325	125	325	-	125	325
	NB	2	1240	66	1308	40 - E	22 - C	16 - C	22 - C		-	100	1200	100	1200	300	25	225
	SB	7	875	8	890	39 - E	11 - B	8 - A	12 - B		-	75	575	75	575	-	-	-
TH 61 at 120th St N	EB	17	25	55	97	80 - F	71 - E	18 - B	43 - D	45 - D	-	50	125	50	125	125	50	100
Signalized	WB	110	20	131	261	128 - F	131 - F	65 - E	97 - F		-	200	425	200	425	150	125	200
	NB	68	1077	98	1243	84 - F	42 - D	20 - C	43 - D		300	100	425	450	1175	300	50	600
	SB	92	813	15	920	179 - F	18 - B	7 - A	34 - C		250	150	350	225	450	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2035 No Build - Sensitivity Analysis

		AM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	6	-	24	30	9 - A	-	3 - A	5 - A	3 - A	-	25	75	25	75	-	25	75
	WB	4	4	-	8	9 - A	9 - A	-	9 - A		-	25	50	25	50	-	25	50
	NB	2	351	-	353	7 - A	5 - A	-	6 - A		-	25	25	25	25	-	25	25
	SB	-	421	-	421	-	1 - A	-	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	55	57	23	135	5 - A	5 - A	5 - A	5 - A	6 - A	-		0		0	-	50	0
	WB	170	120	68	358	6 - A	6 - A	6 - A	6 - A		-		25		25	-	75	25
	NB	12	283	49	344	5 - A	5 - A	5 - A	5 - A		-		25		25	-	50	25
	SB	53	364	71	488	7 - A	7 - A	7 - A	7 - A		-		50		50	-	100	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	3	-	6	9	9 - A	-	4 - A	6 - A	5 - A	-	25	50	25	50	-	25	50
	WB	20	4	30	54	10 - B	10 - B	4 - A	7 - A		-	50	75	50	75	-	50	75
	NB	2	366	19	387	8 - A	5 - A	4 - A	5 - A		-	25	50	25	50	-	-	-
	SB	13	494	21	528	5 - A	5 - A	3 - A	5 - A		-	25	50	25	50	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	63	-	134	197	8 - A	-	8 - A	8 - A	7 - A	-	-	25	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	84	340	-	424	6 - A	6 - A	-	6 - A		-	-	25	-	25	-	-	25
	SB	-	493	49	542	-	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 152nd St N *Signalized*	EB	1	-	6	7	85 - F	-	6 - A	18 - B	6 - A	-	25	25	25	25	-	25	25
	WB	2	1	-	3	44 - D	66 - E	-	52 - D		-	25	25	0	25	-	0	25
	NB	9	416	-	425	4 - A	1 - A	-	2 - A		250	25	50	25	75	250	-	-
	SB	-	603	-	603	-	9 - A	-	9 - A		-	-	-	25	100	200	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	13	-	15	28	11 - B	-	7 - A	9 - A	3 - A	-	25	50	25	50	-	25	50
	WB	1	2	5	8	12 - B	9 - A	3 - A	6 - A		-	25	50	25	50	-	25	50
	NB	14	406	-	420	4 - A	2 - A	-	3 - A		-	25	75	25	75	-	25	75
	SB	2	628	14	644	4 - A	3 - A	2 - A	3 - A		-	25	50	25	50	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	6 - A	-	-	-	-	-	-	-	-
	WB	71	-	45	116	37 - E	-	25 - D	33 - D		-	75	225	-	-	-	75	225
	NB	-	414	70	484	-	2 - A	2 - A	2 - A		-	-	-	25	50	-	25	50
	SB	72	550	-	622	7 - A	4 - A	-	5 - A		75	50	275	50	275	-	-	-
TH 61 at 147th St N *Signalized*	EB	26	11	56	93	60 - E	62 - E	12 - B	32 - C	21 - C	135	25	100	50	100	-	50	100
	WB	265	25	88	378	65 - E	54 - D	22 - C	55 - E		175	225	350	125	450	-	125	450
	NB	32	358	129	519	23 - C	8 - A	2 - A	8 - A		275	25	75	75	250	250	25	50
	SB	49	573	30	652	15 - B	11 - B	2 - A	11 - B		250	25	75	150	375	250	25	100
TH 61 at 146th St N *Side Street Stop Controlled*	EB	1	-	10	11	7 - A	-	8 - A	8 - A	2 - A	-	25	50	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	19	500	-	519	11 - B	0 - A	-	1 - A		150	25	75	-	-	-	-	-
	SB	-	885	7	892	-	2 - A	2 - A	2 - A		200	-	-	-	-	200	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	15	16	17 - C	-	8 - A	9 - A	1 - A	-	25	50	-	-	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	16	540	-	556	9 - A	2 - A	-	3 - A		250	25	50	-	-	-	-	-
	SB	-	847	5	852	-	1 - A	0 - A	1 - A		-	-	-	0	25	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	244	8	471	723	117 - F	12 - B	74 - E	88 - F	38 - D	-	275	450	125	775	250	325	450
	WB	1	4	0	5	87 - F	82 - F	-	83 - F		-	25	25	25	50	-	25	50
	NB	311	311	0	622	26 - C	6 - A	-	16 - B		200	150	300	50	250	200	0	25
	SB	-	548	333	881	-	19 - B	5 - A	14 - B		325	-	-	200	500	325	50	200
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	3	-	10	13	20 - C	-	7 - A	10 - B		-	25	50	-	-	-	25	50
	NB	-	596	5	601	-	2 - A	2 - A	2 - A		-	-	-	-	-	-	-	-
	SB	2	993	-	995	4 - A	3 - A	-	4 - A		-	0	25	-	-	-	-	-
TH 61 at 140th St N *Signalized*	EB	42	4	35	81	61 - E	58 - E	11 - B	40 - D	11 - B	-	50	125	50	125	250	25	75
	WB	77	14	181	272	65 - E	62 - E	10 - B	29 - C		-	100	200	100	200	575	75	150
	NB	27	381	23	431	15 - B	8 - A	2 - A	9 - A		160	25	125	50	250	325	25	25
	SB	112	744	134	990	9 - A	6 - A	1 - A	6 - A		325	50	100	100	300	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	28	-	36	64	16 - C	-	7 - A	11 - B		-	50	100	-	-	-	50	100
	NB	-	395	10	405	-	2 - A	1 - A	2 - A		-	-	-	-	-	275	-	-
	SB	20	826	-	846	5 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	10	-	4	14	13 - B	-	4 - A	11 - B		-	25	50	-	-	-	25	50
	NB	-	402	4	406	-	4 - A	3 - A	4 - A		-	-	-	-	-	275	-	-
	SB	3	836	-	839	3 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	16	8	124	148	58 - E	79 - E	21 - C	29 - C	18 - B	275	25	100	25	100	150	75	175
	WB	111	19	58	188	64 - E	63 - E	6 - A	47 - D		250	100	250	25	100	175	50	75
	NB	86	328	39	453	44 - D	12 - B	3 - A	18 - B		250	75	175	100	225	250	25	50
	SB	32	781	32	845	11 - B	11 - B	3 - A	11 - B		275	25	75	100	300	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	3	9	19	24 - C	34 - D	22 - C	25 - D	8 - A	-	25	75	25	75	-	25	75
	WB	65	0	8	73	38 - E	-	21 - C	37 - E		-	50	150	50	150	-	50	150
	NB	1	426	27	454	13 - B	4 - A	3 - A	4 - A		-	25	50	25	50	-	-	-
	SB	10	996	7	1013	9 - A	7 - A	5 - A	8 - A		-	25	100	25	100	-	-	-
TH 61 at 120th St N *Signalized*	EB	7	21	76	104	75 - E	72 - E	26 - C	39 - D	26 - C	-	50	125	50	125	125	50	125
	WB	115	9	88	212	112 - F	91 - F	16 - B	72 - E		-	175	350	175	350	150	75	200
	NB	22	339	54	415	88 - F	12 - B	3 - A	15 - B		300	25	100	75	200	300	25	50
	SB	67	1016	6	1089	71 - E	16 - B	8 - A	20 - C		250	75	150	200	450	350	0	25
Future Rd at Frenchman Rd *Signalized*	EB	6	566	70	642	28 - C	25 - C	8 - A	24 - C	21 - C	300	25	25	175	325	300	25	25
	WB	137	508	4	649	26 - C	16 - B	5 - A	19 - B		300	75	175	100	200	300	25	25
	NB	123	5	157	285	44 - D	29 - C	10 - B	26 - C		150	100	200	25	50	150	75	125
	SB	4	3	21	28	44 - D	60 - E	6 - A	18 - B		150	25	50	25	50	150	25	50

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2035 No Build - Sensitivity Analysis

Intersection	Approach	PM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
		Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	5	20	5	30	24 - C	15 - C	5 - A	15 - C	7 - A	-	25	100	25	100	-	25	100
	WB	5	11	-	16	19 - C	15 - C	-	17 - C		-	25	75	25	75	-	25	75
	NB	4	1049	0	1053	12 - B	8 - A	-	9 - A		-	25	50	25	50	-	25	50
	SB	-	420	8	428	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	154	182	28	364	11 - B	11 - B	11 - B	11 - B	136 - F	-	-	75		75	-	-	75
	WB	79	126	114	319	38 - E	38 - E	38 - E	38 - E		-	-	175		175	-	-	175
	NB	40	625	214	879	245 - F	245 - F	245 - F	245 - F		-	-	1525		1525	-	-	1525
	SB	61	338	42	441	8 - A	8 - A	8 - A	9 - A		-	-	50		50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	12	17	11	40	43 - E	39 - E	5 - A	31 - D	11 - B	-	50	100	50	100	-	50	100
	WB	18	3	21	42	29 - D	37 - E	16 - C	24 - C		-	50	75	50	75	-	50	75
	NB	12	1055	19	1086	9 - A	11 - B	9 - A	11 - B		-	25	75	25	75	-	-	-
	SB	24	409	6	439	17 - C	6 - A	4 - A	7 - A		-	50	200	50	200	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	63	-	126	189	6 - A	- A	6 - A	6 - A	35 - E	-	-	25	-	25	-	-	25
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	93	998	-	1091	49 - E	49 - E	-	49 - E		-	-	600	-	600	-	-	600
	SB	-	384	51	435	-	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 152nd St N *Signalized*	EB	1	9	1	11	67 - E	95 - F	11 - B	85 - F	6 - A	-	25	25	25	50	-	25	50
	WB	2	5	-	7	79 - E	80 - F	-	80 - F		-	25	25	25	50	-	25	50
	NB	4	1117	4	1125	6 - A	4 - A	2 - A	4 - A		250	25	50	25	125	250	-	-
	SB	-	510	4	514	-	8 - A	6 - A	8 - A		-	-	-	25	125	200	0	25
TH 61 at 150th St N *Side Street Stop Controlled*	EB	10	1	61	72	28 - D	17 - C	8 - A	11 - B	4 - A	-	50	100	50	100	-	50	100
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	32	1057	1	1090	6 - A	4 - A	1 - A	5 - A		-	50	150	50	150	-	50	150
	SB	1	522	27	550	3 - A	3 - A	2 - A	3 - A		-	25	25	25	25	-	0	25
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	12 - B	-	-	-	-	-	-	-	-
	WB	46	-	55	101	134 - F	-	92 - F	112 - F		-	125	325	-	-	-	125	325
	NB	-	1063	31	1094	-	3 - A	2 - A	3 - A		-	-	-	25	50	-	25	50
	SB	45	530	-	575	21 - C	8 - A	-	10 - B		75	100	450	100	450	-	-	-
TH 61 at 147th St N *Signalized*	EB	48	11	52	111	67 - E	55 - E	17 - B	43 - D	19 - B	135	50	150	50	175	-	50	175
	WB	163	11	40	214	98 - F	76 - E	36 - D	86 - F		175	175	325	100	325	-	100	325
	NB	41	1017	270	1328	15 - B	11 - B	4 - A	10 - B		275	25	75	200	525	250	50	375
	SB	57	485	39	581	36 - D	8 - A	2 - A	11 - B		250	50	125	100	300	250	25	50
TH 61 at 146th St N *Side Street Stop Controlled*	EB	9	-	24	33	64 - F	-	60 - F	62 - F	6 - A	-	50	125	50	125	-	50	125
	WB	1	-	-	1	313 - F	-	-	313 - F		-	25	25	25	25	-	25	25
	NB	24	1281	2	1307	6 - A	1 - A	0 - A	2 - A		150	25	50	-	-	-	-	-
	SB	2	697	12	711	21 - C	13 - B	8 - A	13 - B		200	25	25	75	200	200	25	75
TH 61 at 145th St N *Side Street Stop Controlled*	EB	0	-	20	20	-	-	121 - F	121 - F	7 - A	-	50	100	-	-	-	50	100
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	21	1312	-	1333	12 - B	4 - A	-	5 - A		250	25	50	-	-	-	-	-
	SB	-	685	0	685	-	8 - A	-	8 - A		-	-	-	50	250	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	532	12	574	1118	38 - D	4 - A	18 - B	28 - C	55 - E	-	325	550	0	25	250	175	400
	WB	2	5	7	14	72 - E	88 - F	31 - C	58 - E		-	25	25	25	50	-	25	50
	NB	379	804	6	1189	91 - F	62 - E	34 - C	72 - E		200	350	400	700	875	200	25	25
	SB	5	459	272	736	55 - E	96 - F	24 - C	70 - E		325	25	150	500	950	325	250	525
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	19 - C	-	-	-	-	-	-	-	-
	WB	-	-	23	23	-	-	178 - F	178 - F		-	50	150	-	-	-	50	150
	NB	-	1177	3	1180	-	27 - D	18 - C	27 - D		-	-	-	350	675	-	350	675
	SB	35	997	-	1032	40 - E	5 - A	-	7 - A		-	25	75	25	350	-	-	-
TH 61 at 140th St N *Signalized*	EB	127	19	43	189	86 - F	88 - F	11 - B	70 - E	59 - E	-	150	325	150	325	250	25	75
	WB	76	18	195	289	56 - E	61 - E	42 - D	47 - D		-	100	200	100	200	575	125	275
	NB	30	911	81	1022	74 - E	92 - F	56 - E	89 - F		160	75	325	825	1450	325	150	525
	SB	217	654	107	978	83 - F	15 - B	3 - A	29 - C		325	200	450	225	400	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	34 - D	-	-	-	-	-	-	-	-
	WB	14	-	27	41	46 - E	-	73 - F	64 - F		-	50	150	-	-	-	50	150
	NB	-	1011	19	1030	-	54 - F	24 - C	54 - F		-	-	-	450	1300	275	50	400
	SB	40	698	-	738	19 - C	4 - A	-	5 - A		150	25	100	25	75	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	7 - A	-	-	-	-	-	-	-	-
	WB	6	-	4	10	61 - F	-	21 - C	45 - E		-	25	50	-	-	-	25	50
	NB	-	1055	21	1076	-	11 - B	6 - A	11 - B		-	-	-	50	200	275	25	100
	SB	10	732	-	742	17 - C	2 - A	-	3 - A		175	25	50	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	35	14	151	200	63 - E	66 - E	15 - B	27 - C	17 - B	275	50	125	25	75	150	75	150
	WB	87	10	48	145	64 - E	58 - E	16 - B	48 - D		250	100	200	25	100	175	25	75
	NB	90	972	102	1164	16 - B	16 - B	6 - A	16 - B		250	50	100	200	425	250	25	50
	SB	70	639	19	728	31 - C	9 - A	2 - A	11 - B		275	50	125	100	250	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	4	8	19	68 - F	33 - D	11 - B	37 - E	11 - B	-	25	75	25	75	-	25	75
	WB	42	0	3	45	61 - F	-	33 - D	60 - F		-	50	125	50	125	-	50	125
	NB	3	1185	49	1237	19 - C	11 - B	10 - B	11 - B		-	25	150	25	150	-	-	-
	SB	9	817	9	835	13 - B	6 - A	4 - A	7 - A		-	25	175	25	175	-	-	-
TH 61 at 120th St N *Signalized*	EB	14	26	54	94	68 - E	75 - E	16 - B	41 - D	37 - D	-	50	125	50	125	125	50	75
	WB	109	19	121	249	141 - F	126 - F	64 - E	103 - F		-	200	475	200	475	150	125	200
	NB	64	1019	86	1169	99 - F	33 - C	13 - B	36 - D		300	75	350	350	725	300	50	375
	SB	86	756	21	863	84 - F	14 - B	5 - A	21 - C		250	100	200	150	400	350	25	50

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2045 No Build - Sensitivity Analysis

		AM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	15	-	63	78	12 - B	-	5 - A	7 - A	4 - A	-	50	75	50	75	-	50	75
	WB	3	12	-	15	13 - B	12 - B	-	13 - B		-	25	75	25	75	-	25	75
	NB	7	395	-	402	6 - A	6 - A	-	6 - A		-	25	50	25	50	-	25	50
	SB	-	432	-	432	-	1 - A	-	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	34	28	13	75	5 - A	5 - A	5 - A	5 - A	6 - A	-	-	0	-	0	-	-	0
	WB	135	69	57	261	6 - A	6 - A	6 - A	6 - A		-	-	25	-	25	-	-	25
	NB	8	212	44	264	5 - A	5 - A	5 - A	5 - A		-	-	25	-	25	-	-	25
	SB	45	255	38	338	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	3	-	13	16	20 - C	-	6 - A	9 - A	6 - A	-	25	50	25	50	-	25	50
	WB	39	15	52	106	14 - B	17 - C	8 - A	12 - B		-	50	125	50	125	-	50	125
	NB	11	391	33	435	11 - B	6 - A	6 - A	7 - A		-	25	75	25	75	-	0	25
	SB	22	536	29	587	5 - A	5 - A	4 - A	5 - A		-	25	75	25	75	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	95	-	182	277	9 - A	9 - A	9 - A	9 - A	8 - A	-	-	50	-	50	-	-	50
	WB	-	-	-	0	- A	0 - A	0 - A	0 - A		-	-	-	-	-	-	-	-
	NB	104	341	-	445	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
	SB	-	484	69	553	8 - A	8 - A	8 - A	8 - A		-	-	75	-	75	-	-	75
TH 61 at 152nd St N *Signalized*	EB	1	-	11	12	67 - E	-	6 - A	12 - B	7 - A	-	25	25	25	25	-	25	25
	WB	5	2	-	7	85 - F	87 - F	-	86 - F		-	25	50	25	25	-	25	25
	NB	9	455	-	464	4 - A	2 - A	-	3 - A		250	25	50	25	125	250	-	-
	SB	-	662	-	662	-	10 - B	-	10 - B		-	-	-	25	150	200	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	12	-	20	32	12 - B	-	6 - A	9 - A	3 - A	-	25	50	25	50	-	25	50
	WB	1	1	5	7	19 - C	10 - B	4 - A	7 - A		-	25	50	25	50	-	25	50
	NB	14	451	-	465	5 - A	2 - A	-	3 - A		-	25	100	25	100	-	25	100
	SB	3	691	20	714	3 - A	4 - A	2 - A	4 - A		-	25	50	25	50	-	0	25
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	10 - B	-	-	-	-	-	-	-	-
	WB	75	-	53	128	75 - F	-	68 - F	73 - F		-	125	425	-	-	-	125	425
	NB	-	465	75	540	-	2 - A	2 - A	2 - A		-	-	-	25	50	-	25	50
	SB	85	596	-	681	8 - A	4 - A	-	5 - A		75	75	200	75	200	-	-	-
TH 61 at 147th St N *Signalized*	EB	37	7	74	118	58 - E	58 - E	16 - B	32 - C	22 - C	135	50	150	50	150	-	50	150
	WB	283	31	96	410	67 - E	45 - D	23 - C	56 - E		175	250	350	150	475	-	150	475
	NB	56	397	123	576	22 - C	6 - A	2 - A	7 - A		275	50	125	75	225	250	25	50
	SB	55	646	35	736	20 - C	14 - B	2 - A	14 - B		250	50	150	175	375	250	25	100
TH 61 at 146th St N *Side Street Stop Controlled*	EB	3	-	10	13	21 - C	-	8 - A	11 - B	2 - A	-	25	50	25	50	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	25	550	-	575	15 - C	0 - A	-	1 - A		150	25	75	-	-	-	-	-
	SB	-	994	11	1005	-	3 - A	2 - A	3 - A		200	-	-	-	-	200	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	2	-	20	22	14 - B	-	8 - A	9 - A	2 - A	-	25	50	-	-	-	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	20	602	-	622	11 - B	2 - A	-	3 - A		250	25	75	-	-	-	-	-
	SB	-	951	6	957	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	0	25
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	302	8	521	831	152 - F	21 - C	98 - F	117 - F	53 - D	-	400	750	300	1000	250	350	450
	WB	1	4	0	5	86 - F	77 - E	-	79 - E		-	25	25	25	25	-	25	25
	NB	350	329	0	679	35 - D	8 - A	-	22 - C		200	175	400	75	300	200	-	-
	SB	-	596	395	991	-	27 - C	8 - A	20 - C		325	-	-	275	600	325	100	500
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	1	-	11	12	30 - D	-	6 - A	8 - A		-	25	50	-	-	-	25	50
	NB	-	645	4	649	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	5	1066	-	1071	6 - A	4 - A	-	5 - A		-	25	50	-	-	-	-	-
TH 61 at 140th St N *Signalized*	EB	44	3	40	87	64 - E	46 - D	12 - B	40 - D	11 - B	-	50	125	50	125	250	25	75
	WB	87	15	195	297	65 - E	55 - E	9 - A	28 - C		-	100	225	100	225	575	75	125
	NB	25	408	26	459	14 - B	7 - A	2 - A	8 - A		160	25	75	75	175	325	25	25
	SB	112	808	130	1050	8 - A	6 - A	1 - A	6 - A		325	50	75	100	250	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	26	-	42	68	20 - C	-	8 - A	13 - B		-	50	100	-	-	-	50	100
	NB	-	419	13	432	-	2 - A	1 - A	2 - A		-	-	-	-	-	275	-	-
	SB	25	892	-	917	4 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	12	-	5	17	16 - C	-	3 - A	13 - B		-	25	50	-	-	-	25	50
	NB	-	432	5	437	-	4 - A	3 - A	4 - A		-	-	-	-	-	275	-	-
	SB	2	898	-	900	4 - A	2 - A	-	3 - A		175	25	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	18	7	134	159	69 - E	74 - E	28 - C	35 - D	22 - C	275	25	75	25	125	150	75	175
	WB	128	18	57	203	64 - E	75 - E	6 - A	49 - D		250	125	250	25	175	175	25	75
	NB	101	358	43	502	56 - E	13 - B	3 - A	21 - C		250	75	200	100	300	250	25	25
	SB	36	836	31	903	10 - B	14 - B	4 - A	14 - B		275	25	50	175	350	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	5	9	21	23 - C	33 - D	23 - C	26 - D	9 - A	-	25	75	25	75	-	25	75
	WB	66	1	12	79	41 - E	83 - F	17 - C	38 - E		-	50	125	50	125	-	50	125
	NB	1	457	28	486	12 - B	5 - A	4 - A	5 - A		-	25	50	25	50	-	-	-
	SB	18	1066	6	1090	9 - A	8 - A	6 - A	9 - A		-	25	100	25	100	-	-	-
TH 61 at 120th St N *Signalized*	EB	7	24	75	106	61 - E	76 - E	34 - C	46 - D	38 - D	-	50	100	50	100	125	50	125
	WB	131	10	81	222	201 - F	177 - F	68 - E	152 - F		-	300	550	300	550	150	100	200
	NB	31	375	48	454	73 - E	14 - B	3 - A	17 - B		300	50	100	100	225	300	25	25
	SB	80	1073	7	1160	78 - E	20 - C	10 - B	24 - C		250	100	250	250	550	350	25	25

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: 2045 No Build - Sensitivity Analysis

		PM Peak Hour																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
Intersection	Approach	Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at Forest Rd/175th St N *Side Street Stop Controlled*	EB	29	40	27	96	43 - E	30 - D	5 - A	27 - D	9 - A	-	50	200	50	200	-	50	200
	WB	4	24	-	28	22 - C	22 - C	-	22 - C		-	25	75	25	75	-	25	75
	NB	10	1077	1	1088	12 - B	10 - B	3 - A	11 - B		-	25	100	25	100	-	25	100
	SB	-	433	30	463	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout*	EB	225	282	38	545	22 - C	22 - C	22 - C	22 - C	241 - F	-	-	200	-	200	-	-	200
	WB	92	171	127	390	129 - F	129 - F	129 - F	129 - F		-	-	425	-	425	-	-	425
	NB	85	843	343	1271	454 - F	454 - F	454 - F	454 - F		-	-	2250	-	2250	-	-	2250
	SB	71	336	63	470	12 - B	12 - B	12 - B	12 - B		-	-	100	-	100	-	-	100
TH 61 at 165th St N *Side Street Stop Controlled*	EB	20	42	17	79	98 - F	83 - F	44 - E	79 - F	16 - C	-	75	225	75	225	-	75	225
	WB	25	19	41	85	73 - F	71 - F	40 - E	57 - F		-	75	200	75	200	-	75	200
	NB	25	1061	30	1116	12 - B	12 - B	10 - B	12 - B		-	25	125	25	125	-	0	25
	SB	33	439	10	482	16 - C	7 - A	3 - A	8 - A		-	50	250	50	250	-	-	-
TH 61 at 159th St N *Single Lane Roundabout*	EB	121	-	188	309	8 - A	8 - A	8 - A	8 - A	68 - F	-	-	50	-	50	-	-	50
	WB	-	-	-	0	- A	0 - A	0 - A	0 - A		-	-	-	-	-	-	-	-
	NB	139	1133	-	1272	103 - F	103 - F	103 - F	103 - F		-	-	975	-	975	-	-	975
	SB	-	375	75	450	8 - A	8 - A	8 - A	8 - A		-	-	50	-	50	-	-	50
TH 61 at 152nd St N *Signalized*	EB	2	10	2	14	58 - E	72 - E	6 - A	61 - E	6 - A	-	25	50	25	50	-	25	50
	WB	3	5	-	8	86 - F	79 - E	-	82 - F		-	25	50	25	50	-	25	50
	NB	7	1127	4	1138	6 - A	4 - A	4 - A	5 - A		250	25	50	50	150	250	-	-
	SB	-	525	8	533	-	8 - A	5 - A	8 - A		-	-	-	25	150	200	0	25
TH 61 at 150th St N *Side Street Stop Controlled*	EB	15	2	88	105	41 - E	34 - D	14 - B	19 - C	5 - A	-	50	150	50	150	-	50	150
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	35	1061	2	1098	7 - A	5 - A	4 - A	6 - A		-	50	275	50	275	-	50	275
	SB	1	545	37	583	18 - C	4 - A	2 - A	4 - A		-	25	75	25	75	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	26 - D	-	-	-	-	-	-	-	-
	WB	56	-	57	113	340 - F	-	278 - F	309 - F		-	275	550	-	-	-	275	550
	NB	-	1068	46	1114	-	4 - A	3 - A	4 - A		-	-	-	25	50	-	25	50
	SB	44	591	-	635	30 - D	13 - B	-	15 - C		75	175	550	175	550	-	-	-
TH 61 at 147th St N *Signalized*	EB	65	23	69	157	65 - E	60 - E	26 - C	48 - D	39 - D	135	75	175	75	225	-	75	225
	WB	205	22	54	281	223 - F	123 - F	115 - F	195 - F		175	250	350	375	1075	-	375	1075
	NB	51	1031	318	1400	19 - B	17 - B	7 - A	15 - B		275	25	100	300	650	250	75	375
	SB	72	518	56	646	69 - E	16 - B	3 - A	21 - C		250	75	200	175	400	250	25	200
TH 61 at 146th St N *Side Street Stop Controlled*	EB	11	-	35	46	227 - F	-	151 - F	170 - F	17 - C	-	75	225	75	225	-	75	225
	WB	2	-	-	2	247 - F	-	-	247 - F		-	25	50	25	50	-	25	50
	NB	32	1342	3	1377	9 - A	1 - A	0 - A	2 - A		150	25	75	-	-	-	-	-
	SB	4	755	13	772	50 - F	34 - D	35 - E	35 - E		200	25	100	250	525	200	50	150
TH 61 at 145th St N *Side Street Stop Controlled*	EB	0	-	32	32	-	-	240 - F	240 - F	13 - B	-	75	175	-	-	-	75	175
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	28	1393	-	1421	16 - C	4 - A	-	5 - A		250	25	50	-	-	-	-	-
	SB	-	736	0	736	-	19 - C	-	19 - C		-	-	-	150	300	-	-	-
TH 61 at Frenchman Rd/Mueller Dr *Signalized*	EB	639	16	570	1225	62 - E	3 - A	16 - B	40 - D	72 - E	-	450	925	25	375	250	100	250
	WB	2	4	7	13	102 - F	80 - F	39 - D	62 - E		-	25	50	25	50	-	25	50
	NB	356	787	10	1153	116 - F	74 - E	34 - C	87 - F		200	375	400	775	875	200	25	250
	SB	6	494	306	806	91 - F	138 - F	47 - D	104 - F		325	25	225	725	950	325	375	525
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	28 - D	-	-	-	-	-	-	-	-
	WB	-	-	30	30	-	-	464 - F	464 - F		-	100	225	-	-	-	100	225
	NB	-	1143	5	1148	-	37 - E	30 - D	37 - E		-	-	-	500	700	-	500	700
	SB	43	1027	-	1070	37 - E	5 - A	-	7 - A		-	50	75	25	325	-	-	-
TH 61 at 140th St N *Signalized*	EB	158	20	52	230	116 - F	138 - F	12 - B	95 - F	79 - E	-	225	425	225	425	250	50	150
	WB	88	19	236	343	53 - D	64 - E	41 - D	46 - D		-	100	225	100	225	575	150	300
	NB	24	822	62	908	163 - F	152 - F	96 - F	149 - F		160	100	325	1125	1475	325	225	525
	SB	220	682	118	1020	67 - E	16 - B	3 - A	26 - C		325	175	375	225	450	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	70 - F	-	-	-	-	-	-	-	-
	WB	10	-	33	43	190 - F	-	216 - F	210 - F		-	100	225	-	-	-	100	225
	NB	-	940	20	960	-	119 - F	61 - F	118 - F		-	-	-	875	1675	275	75	475
	SB	36	747	-	783	18 - C	4 - A	-	5 - A		150	25	75	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	53 - F	-	-	-	-	-	-	-	-
	WB	5	-	3	8	39 - E	-	72 - F	52 - F		-	25	50	-	-	-	25	50
	NB	-	1060	18	1078	-	90 - F	90 - F	90 - F		-	-	-	725	2025	275	50	475
	SB	10	780	-	790	5 - A	2 - A	-	3 - A		175	25	50	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	51	17	163	231	69 - E	57 - E	17 - B	32 - C	34 - C	275	75	150	25	100	150	75	200
	WB	94	9	54	157	67 - E	64 - E	26 - C	53 - D		250	100	175	25	75	175	50	100
	NB	100	1016	120	1236	37 - D	47 - D	31 - C	45 - D		250	100	425	450	1475	250	125	425
	SB	70	694	16	780	34 - C	11 - B	2 - A	13 - B		275	50	150	125	250	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	9	2	7	18	106 - F	153 - F	90 - F	105 - F	19 - C	-	25	100	25	100	-	25	100
	WB	45	1	3	49	248 - F	43 - E	224 - F	243 - F		-	100	300	100	300	-	100	300
	NB	2	1253	57	1312	27 - D	15 - C	12 - B	15 - C		-	25	400	25	400	-	0	25
	SB	8	896	6	910	31 - D	11 - B	9 - A	12 - B		-	75	675	75	675	-	25	100
TH 61 at 120th St N *Signalized*	EB	16	26	58	100	80 - F	80 - F	20 - C	46 - D	52 - D	-	50	150	50	150	125	50	125
	WB	115	23	126	264	192 - F	179 - F	108 - F	151 - F		-	300	575	300	575	150	125	200
	NB	66	1100	103	1269	101 - F	48 - D	28 - C	50 - D		300	100	425	550	1500	300	100	600
	SB	86	836	18	940	134 - F	19 - B	8 - A	30 - C		250	125	375	200	500	350	25	125

Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Build Condition: 3 Lane Section North/South, 4 Lane Section Downtown

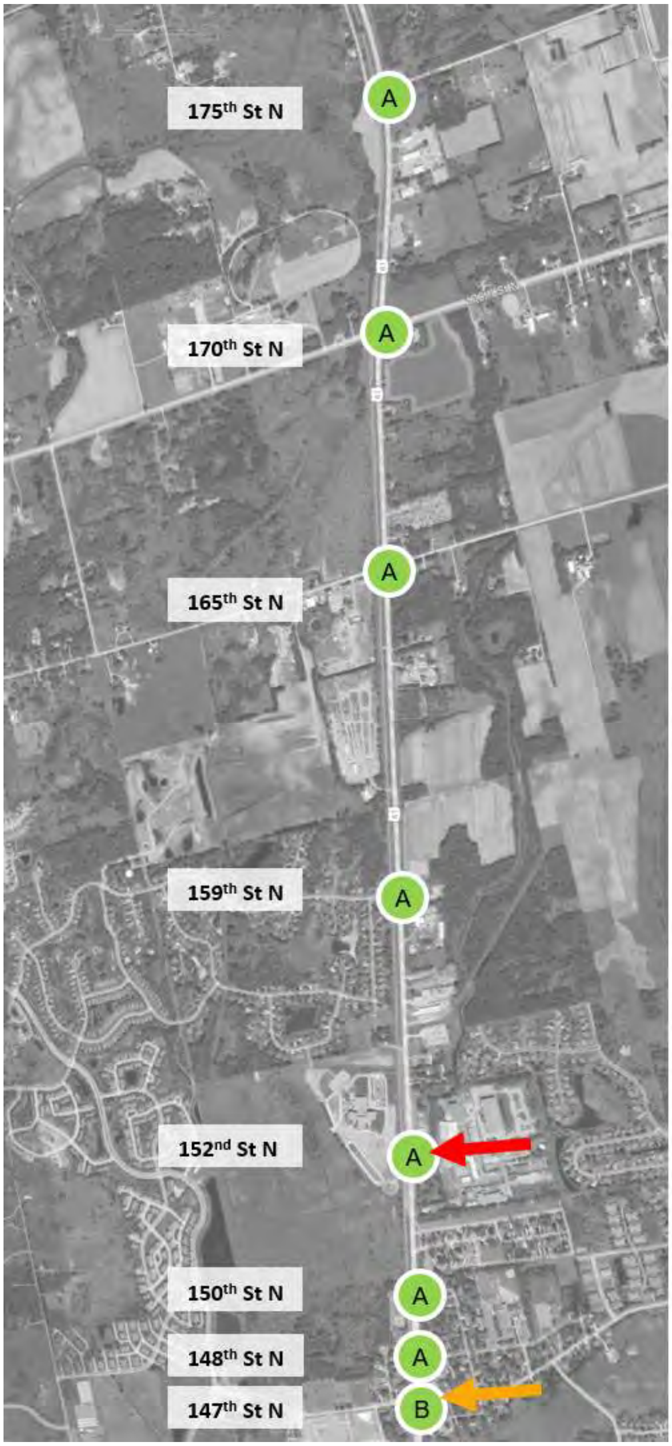
Intersection	Approach	2045 AM Peak - Build Condition: Traffic Volumes (veh): Modeled Volumes				Traffic Delay (sec/veh): Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Traffic Queuing (feet): Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at 175th St N *Side Street Stop Controlled*	EB	20	-	55	75	22 - C	-	6 - A	11 - B	4 - A	-	25	100	25	100	25	50	75
	WB	4	16	-	20	17 - C	20 - C	-	20 - C		-	25	100	25	100	-	-	-
	NB	7	429	-	436	3 - A	5 - A	-	5 - A		300	25	25	-	-	-	-	-
	SB	-	477	-	477	-	1 - A	-	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout* (HCM Results)	EB	34	28	13	75	6 - A	6 - A	6 - A	6 - A	7 - A	-	-	0	-	0	-	-	0
	WB	135	69	57	261	7 - A	7 - A	7 - A	7 - A		-	-	25	-	25	-	-	25
	NB	8	231	44	283	5 - A	5 - A	5 - A	5 - A		-	-	25	-	25	-	-	25
	SB	38	297	45	380	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	-	-	50
TH 61 at 165th St N *Side Street Stop Controlled*	EB	4	-	11	15	42 - E	-	9 - A	18 - C	7 - A	-	25	50	25	50	25	25	50
	WB	37	14	52	103	27 - D	37 - E	10 - B	20 - C		-	50	175	50	175	25	50	50
	NB	11	426	35	472	10 - B	4 - A	4 - A	5 - A		300	25	50	-	-	-	-	-
	SB	24	574	29	627	5 - A	6 - A	4 - A	6 - A		300	25	50	-	-	275	0	25
TH 61 at 159th St N *Single Lane Roundabout* (HCM Results)	EB	95	-	182	277	10 - B	-	10 - B	10 - B	9 - A	-	-	50	-	50	-	-	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	104	360	-	464	7 - A	7 - A	7 - A	7 - A		-	-	50	-	50	250	-	50
	SB	-	526	69	595	9 - A	9 - A	9 - A	9 - A		-	-	75	-	75	275	-	75
TH 61 at 152nd St N *Signalized*	EB	2	-	9	11	79 - E	-	4 - A	18 - B	2 - A	-	25	25	25	25	-	25	25
	WB	5	4	-	9	63 - E	61 - E	-	63 - E		-	25	50	25	25	-	25	25
	NB	11	490	-	501	3 - A	2 - A	-	3 - A		250	25	50	25	50	-	-	-
	SB	-	697	-	697	-	2 - A	-	2 - A		-	-	-	25	75	-	-	-
TH 61 at 150th St N *Side Street Stop Controlled*	EB	15	-	24	39	15 - C	-	6 - A	10 - B	2 - A	-	25	50	25	50	25	25	50
	WB	2	1	4	7	13 - B	11 - B	4 - A	8 - A		-	25	25	25	25	25	25	50
	NB	17	488	-	505	4 - A	0 - A	-	1 - A		300	25	50	-	-	-	-	-
	SB	1	738	18	757	1 - A	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	79	-	55	134	25 - D	-	9 - A	19 - C		25	50	75	-	-	-	75	200
	NB	-	501	75	576	-	1 - A	2 - A	2 - A		-	-	-	-	-	180	25	25
	SB	75	657	-	732	5 - A	1 - A	-	2 - A		75	25	100	-	-	-	-	-
TH 61 at 147th St N *Signalized*	EB	29	8	67	104	70 - E	77 - E	18 - B	38 - D	18 - B	135	50	100	50	150	-	50	150
	WB	276	27	97	400	49 - D	39 - D	15 - B	41 - D		175	200	350	100	400	-	100	400
	NB	54	437	134	625	25 - C	10 - B	2 - A	10 - B		275	50	125	75	200	250	25	50
	SB	61	702	39	802	19 - B	11 - B	1 - A	12 - B		250	25	125	125	250	250	25	25
TH 61 at 146th St N *Side Street Stop Controlled*	EB	2	-	24	26	27 - D	-	7 - A	9 - A	2 - A	-	25	50	25	50	25	25	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	25	592	-	617	9 - A	0 - A	-	1 - A		150	25	75	-	-	-	-	-
	SB	-	1046	8	1054	-	2 - A	2 - A	2 - A		-	-	-	-	-	-	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	1	-	33	34	29 - D	-	8 - A	9 - A	1 - A	25	25	25	-	-	-	25	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	22	639	-	661	7 - A	2 - A	-	3 - A		250	25	50	-	-	-	-	-
	SB	-	1017	5	1022	-	0 - A	0 - A	0 - A		-	-	-	-	-	125	0	25
TH 61 at Frenchman Rd *Signalized*	EB	329	2	547	878	48 - D	40 - D	20 - C	31 - C	21 - C	550	150	250	25	225	250	175	400
	WB	1	3	-	4	40 - D	79 - E	-	70 - E		-	0	25	25	25	-	25	25
	NB	419	323	-	742	23 - C	7 - A	-	17 - B		250	100	200	50	100	-	-	-
	SB	-	595	466	1061	-	23 - C	10 - B	18 - B		-	-	-	125	275	325	100	275
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	2 - A	-	-	-	-	-	-	-	-
	WB	2	-	12	14	31 - D	-	5 - A	9 - A		25	25	25	-	-	-	25	50
	NB	-	709	5	714	-	2 - A	1 - A	2 - A		-	-	-	-	-	-	-	-
	SB	6	1100	-	1106	7 - A	3 - A	-	4 - A		150	25	50	-	-	-	-	-
TH 61 at 140th St N *Signalized*	EB	106	6	38	150	49 - D	47 - D	7 - A	39 - D	15 - B	300	100	200	25	50	250	25	75
	WB	88	17	199	304	63 - E	61 - E	8 - A	27 - C		300	100	225	25	75	575	75	150
	NB	27	412	25	464	22 - C	13 - B	1 - A	13 - B		160	25	75	100	200	325	25	25
	SB	122	816	151	1089	12 - B	11 - B	2 - A	10 - B		325	50	125	125	250	325	25	75
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	28	-	39	67	26 - D	-	6 - A	15 - C		25	25	75	-	-	-	50	100
	NB	-	433	8	441	-	4 - A	1 - A	4 - A		-	-	-	-	-	-	-	-
	SB	22	896	-	918	5 - A	2 - A	-	3 - A		300	25	50	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	3 - A	-	-	-	-	-	-	-	-
	WB	11	-	5	16	26 - D	-	3 - A	19 - C		25	25	50	-	-	-	25	50
	NB	-	435	7	442	-	3 - A	3 - A	3 - A		-	-	-	-	-	-	-	-
	SB	2	915	-	917	3 - A	2 - A	-	3 - A		300	0	25	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	18	8	138	164	59 - E	74 - E	28 - C	34 - C	23 - C	275	25	75	25	75	150	75	200
	WB	121	23	52	196	59 - E	65 - E	5 - A	46 - D		250	125	225	25	100	175	25	75
	NB	95	367	41	503	42 - D	10 - B	2 - A	16 - B		250	75	175	75	250	250	25	50
	SB	33	850	33	916	16 - B	22 - C	5 - A	22 - C		275	25	150	250	625	325	25	50
TH 61 at 125th St N *Side Street Stop Controlled*	EB	5	4	9	18	30 - D	54 - F	20 - C	31 - D	10 - B	-	25	50	25	50	25	25	50
	WB	62	1	12	75	75 - F	19 - C	36 - E	69 - F		-	75	225	75	225	25	25	50
	NB	1	453	30	484	7 - A	4 - A	4 - A	5 - A		300	25	25	-	-	-	-	-
	SB	17	1058	9	1084	8 - A	8 - A	7 - A	8 - A		300	25	50	-	-	-	-	-
TH 61 at 120th St N *Signalized*	EB	7	25	75	107	62 - E	64 - E	35 - D	44 - D	35 - D	125	25	50	25	100	125	50	125
	WB	137	15	86	238	84 - F	65 - E	8 - A	56 - E		150	125	250	25	125	150	25	75
	NB	25	362	48	435	67 - E	14 - B	3 - A	16 - B		300	25	75	100	250	300	25	50
	SB	62	1079	6	1147	79 - E	35 - D	14 - B	38 - D		250	125	375	400	1050	350	25	25

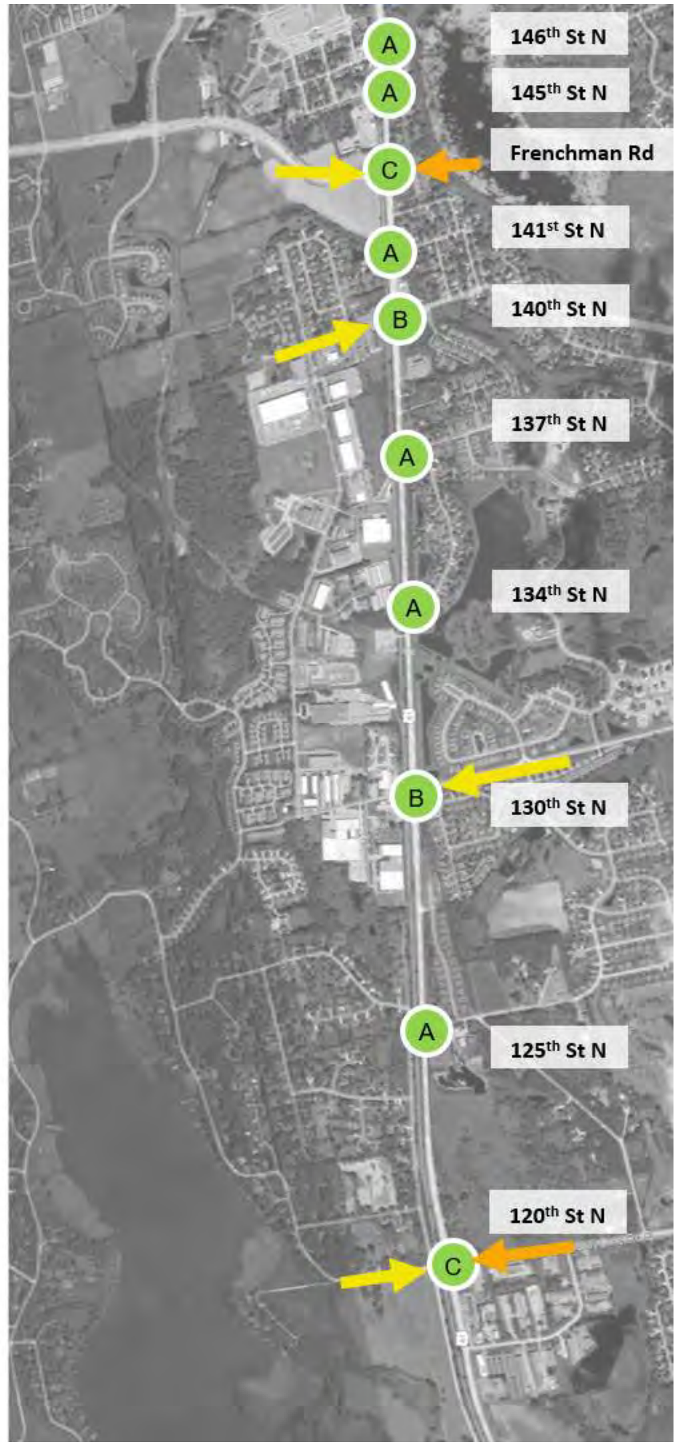
Project: Highway 61 Visioning and Jurisdictional Transfer Study
Scenario: Build Condition: 3 Lane Section North/South, 4 Lane Section Downtown

Intersection	Approach	2045 PM Peak - Build Condition																
		Traffic Volumes (veh)				Traffic Delay (sec/veh)					Traffic Queuing (feet)							
		Modeled Volumes				Movement (Delay - LOS)			Approach (Delay - LOS)	Intersection (Delay - LOS)	Left Turn			Through		Right Turn		
		L	T	R	Total	L	T	R			Storage	Avg	Max	Avg	Max	Storage	Avg	Max
TH 61 at 175th St N *Side Street Stop Controlled*	EB	35	40	28	103	178 - F	165 - F	8 - A	127 - F	14 - B	-	125	425	125	425	25	25	50
	WB	5	25	-	30	41 - E	44 - E	-	44 - E		-	25	100	25	100	-	-	-
	NB	10	1254	1	1265	13 - B	10 - B	8 - A	11 - B		300	25	50	-	-	-	-	-
	SB	-	489	30	519	-	1 - A	0 - A	1 - A		-	-	-	-	-	-	-	-
TH 61 at 170th St N *Single Lane Roundabout* (HCM Results)	EB	225	282	38	545	26 - D	26 - D	26 - D	26 - D	287 - F	-	-	200	-	200	-	-	200
	WB	92	171	127	390	184 - F	184 - F	184 - F	184 - F		-	-	500	-	500	-	-	500
	NB	85	940	343	1368	521 - F	521 - F	521 - F	521 - F		-	-	2575	-	2575	250	-	2575
	SB	71	371	63	505	13 - B	13 - B	13 - B	13 - B		-	-	100	-	100	275	-	100
TH 61 at 165th St N *Side Street Stop Controlled*	EB	26	43	19	88	657 - F	517 - F	400 - F	534 - F	42 - E	-	325	825	325	825	25	25	50
	WB	28	14	44	86	310 - F	399 - F	206 - F	272 - F		-	175	625	175	625	25	25	50
	NB	27	1280	28	1335	12 - B	10 - B	8 - A	10 - B		300	25	50	-	-	250	0	25
	SB	39	490	10	539	21 - C	4 - A	4 - A	6 - A		300	25	100	0	25	-	-	-
TH 61 at 159th St N *Single Lane Roundabout* (HCM Results)	EB	121	-	188	309	9 - A	-	9 - A	9 - A	91 - F	-	-	50	-	50	-	-	50
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	139	1230	-	1369	139 - F	139 - F	139 - F	139 - F		-	-	1250	-	1250	250	-	1250
	SB	-	410	75	485	8 - A	8 - A	8 - A	8 - A		-	-	50	-	50	275	-	50
TH 61 at 152nd St N *Signalized*	EB	2	12	2	16	44 - D	68 - E	5 - A	58 - E	6 - A	-	25	50	25	75	-	25	75
	WB	5	3	-	8	89 - F	72 - E	-	83 - F		-	25	50	25	50	-	25	50
	NB	7	1340	5	1352	10 - B	7 - A	2 - A	7 - A		250	25	50	50	225	-	-	-
	SB	-	565	5	570	-	2 - A	1 - A	2 - A		-	-	-	25	75	200	0	25
TH 61 at 150th St N *Side Street Stop Controlled*	EB	12	1	88	101	41 - E	67 - F	7 - A	12 - B	3 - A	-	25	100	25	100	25	50	75
	WB	0	-	-	0	-	-	-	-		-	0	25	0	25	-	-	-
	NB	49	1275	0	1324	5 - A	2 - A	-	3 - A		300	25	50	-	-	-	-	-
	SB	1	588	35	624	17 - C	2 - A	1 - A	2 - A		300	0	25	-	-	-	-	-
TH 61 at 148th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	54	-	48	102	42 - E	-	14 - B	29 - D		25	50	50	-	-	-	75	175
	NB	-	1311	47	1358	-	4 - A	3 - A	4 - A		-	-	-	0	25	180	25	25
	SB	42	636	-	678	18 - C	1 - A	-	3 - A		75	25	100	25	50	-	-	-
TH 61 at 147th St N *Signalized*	EB	76	25	75	176	67 - E	67 - E	21 - C	48 - D	19 - B	135	75	175	75	200	-	75	200
	WB	210	22	52	284	50 - D	46 - D	23 - C	45 - D		175	175	325	75	250	-	75	250
	NB	64	1247	363	1674	22 - C	18 - B	7 - A	16 - B		275	50	125	225	425	250	50	275
	SB	69	577	52	698	30 - C	10 - B	2 - A	12 - B		250	50	125	100	200	250	25	50
TH 61 at 146th St N *Side Street Stop Controlled*	EB	10	-	58	68	68 - F	-	18 - C	26 - D	2 - A	-	50	150	50	150	25	50	50
	WB	1	-	-	1	121 - F	-	-	121 - F		-	25	25	25	25	-	-	-
	NB	41	1624	4	1669	7 - A	1 - A	0 - A	2 - A		150	25	75	-	-	-	-	-
	SB	4	859	16	879	22 - C	2 - A	2 - A	3 - A		200	25	50	-	-	-	-	-
TH 61 at 145th St N *Side Street Stop Controlled*	EB	-	-	52	52	-	-	7 - A	7 - A	2 - A	-	-	-	-	-	-	50	75
	WB	-	-	-	0	-	-	-	-		-	-	-	-	-	-	-	-
	NB	30	1704	-	1734	9 - A	3 - A	-	4 - A		250	25	75	-	-	-	-	-
	SB	-	872	0	872	-	0 - A	-	0 - A		-	-	-	-	-	-	-	-
TH 61 at Frenchman Rd *Signalized*	EB	742	0	595	1337	42 - D	-	16 - B	31 - C	34 - C	550	250	375	-	-	250	150	350
	WB	4	3	7	14	71 - E	90 - F	12 - B	46 - D		-	25	25	25	50	-	25	50
	NB	507	988	7	1502	64 - E	26 - C	3 - A	39 - D		250	225	400	200	450	200	25	25
	SB	5	555	412	972	32 - C	42 - D	12 - B	30 - C		325	25	50	200	350	325	100	250
TH 61 at 141st St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	-	-	35	35	-	-	15 - C	15 - C		-	-	-	-	-	-	25	75
	NB	-	1457	5	1462	-	4 - A	3 - A	4 - A		-	-	-	-	-	-	-	-
	SB	46	1106	-	1152	22 - C	4 - A	-	5 - A		150	50	100	-	-	-	-	-
TH 61 at 140th St N *Signalized*	EB	235	20	51	306	65 - E	35 - D	6 - A	54 - D	27 - C	300	225	375	25	100	250	50	150
	WB	86	19	222	327	65 - E	59 - E	19 - B	34 - C		300	100	200	25	75	575	100	200
	NB	34	1032	101	1167	36 - D	26 - C	4 - A	25 - C		160	25	150	250	400	325	25	50
	SB	246	705	130	1081	45 - D	16 - B	2 - A	21 - C		325	150	300	150	325	325	25	50
TH 61 at 137th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	4 - A	-	-	-	-	-	-	-	-
	WB	8	-	31	39	54 - F	-	20 - C	27 - D		25	25	50	-	-	-	25	75
	NB	-	1094	19	1113	-	4 - A	2 - A	4 - A		-	-	-	0	25	-	-	-
	SB	42	771	-	813	19 - C	1 - A	-	2 - A		300	25	100	-	-	-	-	-
TH 61 at 134th St N *Side Street Stop Controlled*	EB	-	-	-	0	-	-	-	-	6 - A	-	-	-	-	-	-	-	-
	WB	8	-	4	12	43 - E	-	19 - C	35 - E		25	25	50	-	-	-	25	50
	NB	-	1111	20	1131	-	8 - A	6 - A	8 - A		-	-	-	-	-	-	-	-
	SB	10	805	-	815	18 - C	2 - A	-	3 - A		300	25	50	-	-	-	-	-
TH 61 at 130th St N *Signalized*	EB	49	18	160	227	50 - D	60 - E	20 - C	30 - C	30 - C	275	50	150	25	100	150	75	175
	WB	107	9	47	163	60 - E	61 - E	24 - C	50 - D		250	100	175	25	75	175	50	100
	NB	94	1012	108	1214	30 - C	34 - C	17 - B	33 - C		250	75	350	350	1275	250	50	425
	SB	71	713	18	802	37 - D	21 - C	5 - A	23 - C		275	50	200	250	500	325	25	25
TH 61 at 125th St N *Side Street Stop Controlled*	EB	7	2	6	15	178 - F	63 - F	45 - E	110 - F	19 - C	-	25	100	25	100	25	25	50
	WB	44	2	4	50	340 - F	311 - F	367 - F	341 - F		-	150	325	150	325	25	25	50
	NB	3	1247	58	1308	24 - C	13 - B	12 - B	13 - B		300	25	25	-	-	-	-	-
	SB	6	919	7	932	59 - F	7 - A	6 - A	8 - A		300	25	50	-	-	-	-	-
TH 61 at 120th St N *Signalized*	EB	18	26	54	98	69 - E	61 - E	18 - B	39 - D	54 - D	125	25	75	25	100	125	50	100
	WB	113	19	122	254	91 - F	58 - E	37 - D	63 - E		150	125	250	50	200	150	75	200
	NB	73	1087	106	1266	101 - F	78 - E	51 - D	78 - E		300	150	500	825	2475	300	150	500
	SB	92	844	19	955	76 - E	16 - B	6 - A	22 - C		250	100	250	175	400	350	25	25

Existing
AM Peak Hour
Traffic Operations

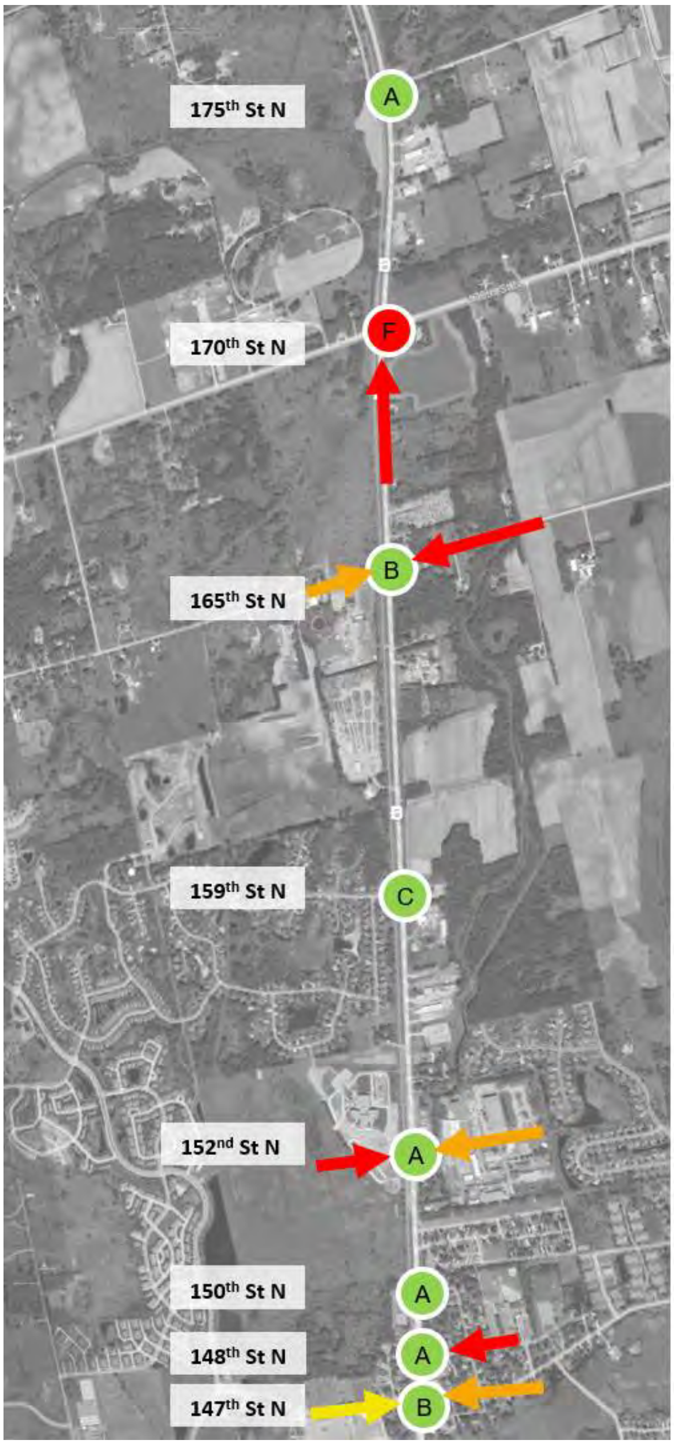
Intersection LOS A
Approach LOS D
Approach LOS E
Approach LOS F

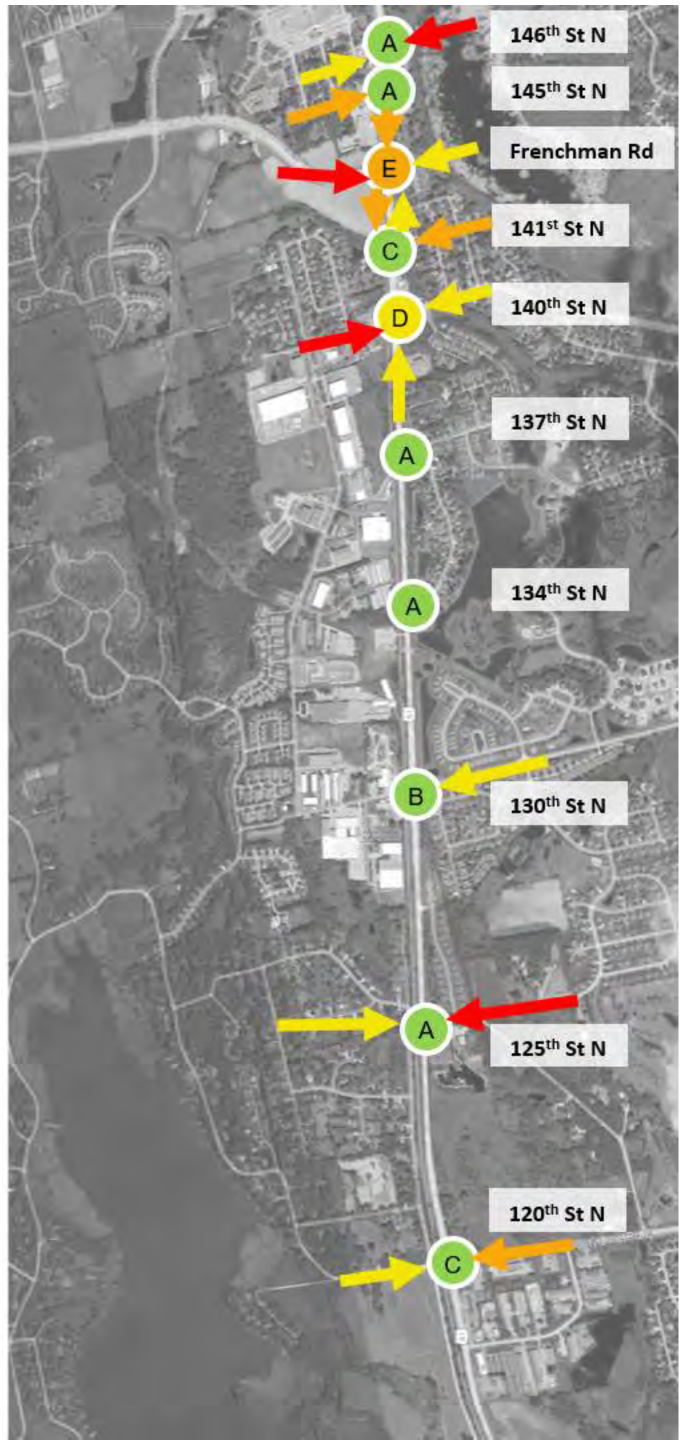




Existing PM Peak Hour Traffic Operations

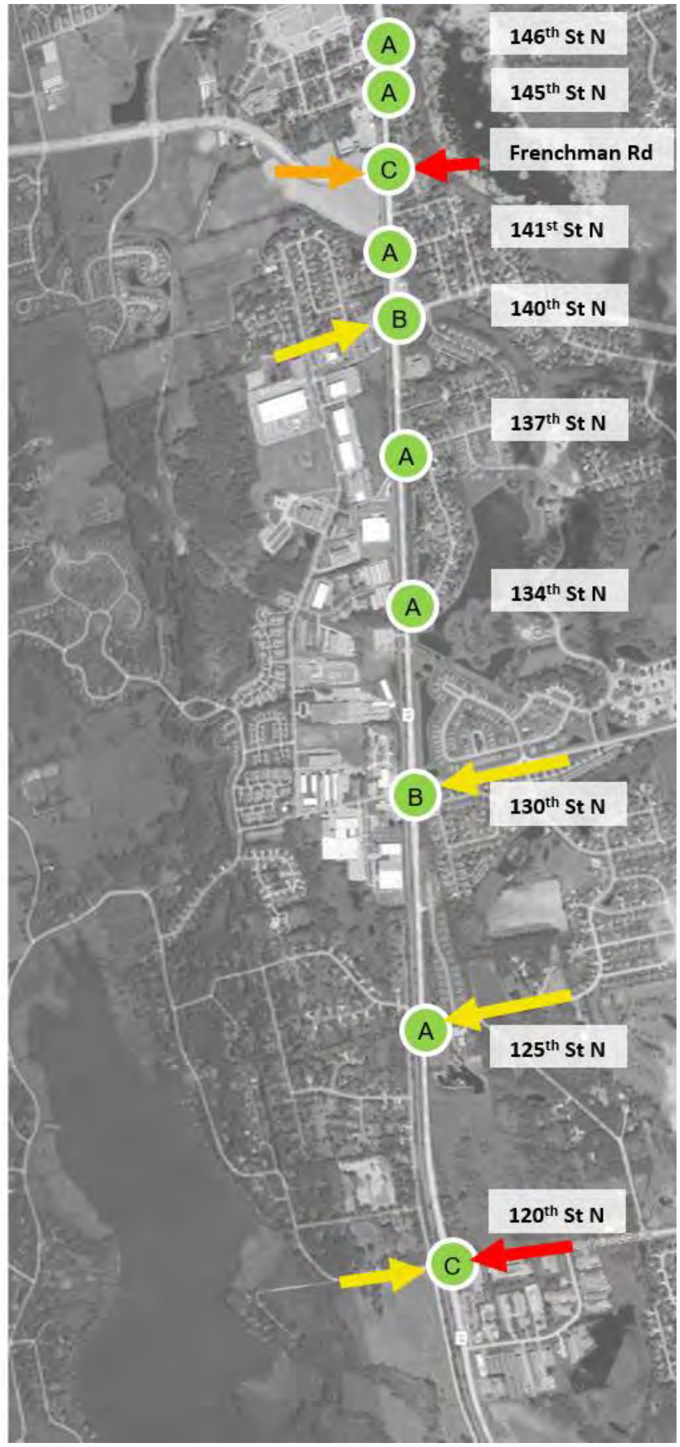
Intersection LOS
Approach LOS D
Approach LOS E
Approach LOS F





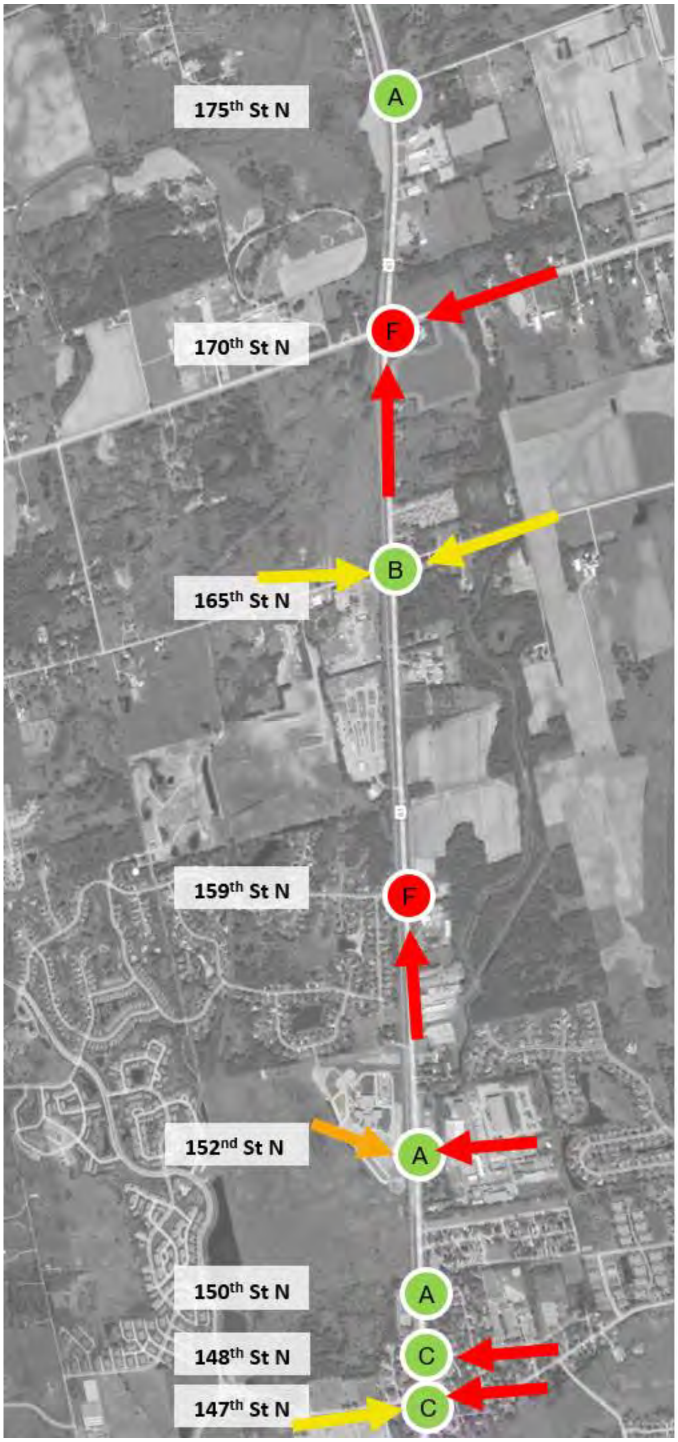
2035 No Build
AM Peak Hour
Traffic Operations

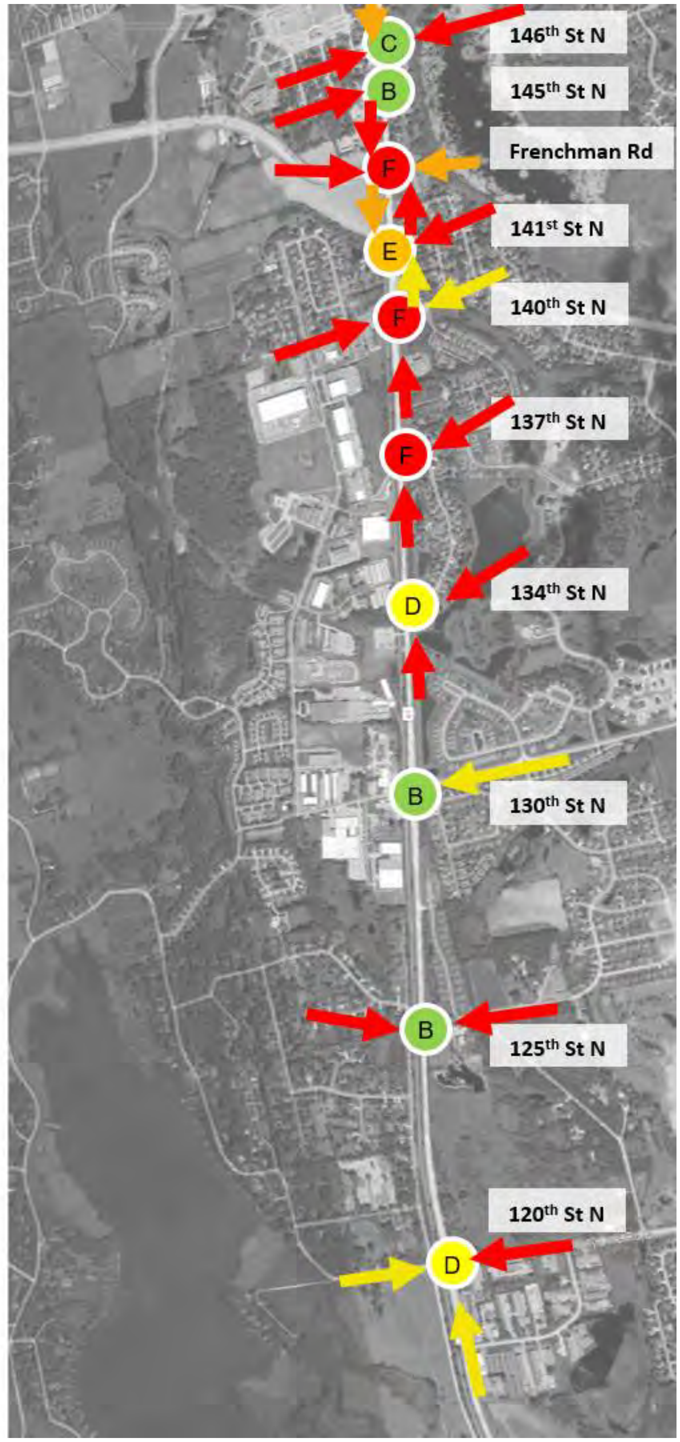
Intersection LOS A
Approach LOS D
Approach LOS E
Approach LOS F



2035 No Build PM Peak Hour Traffic Operations

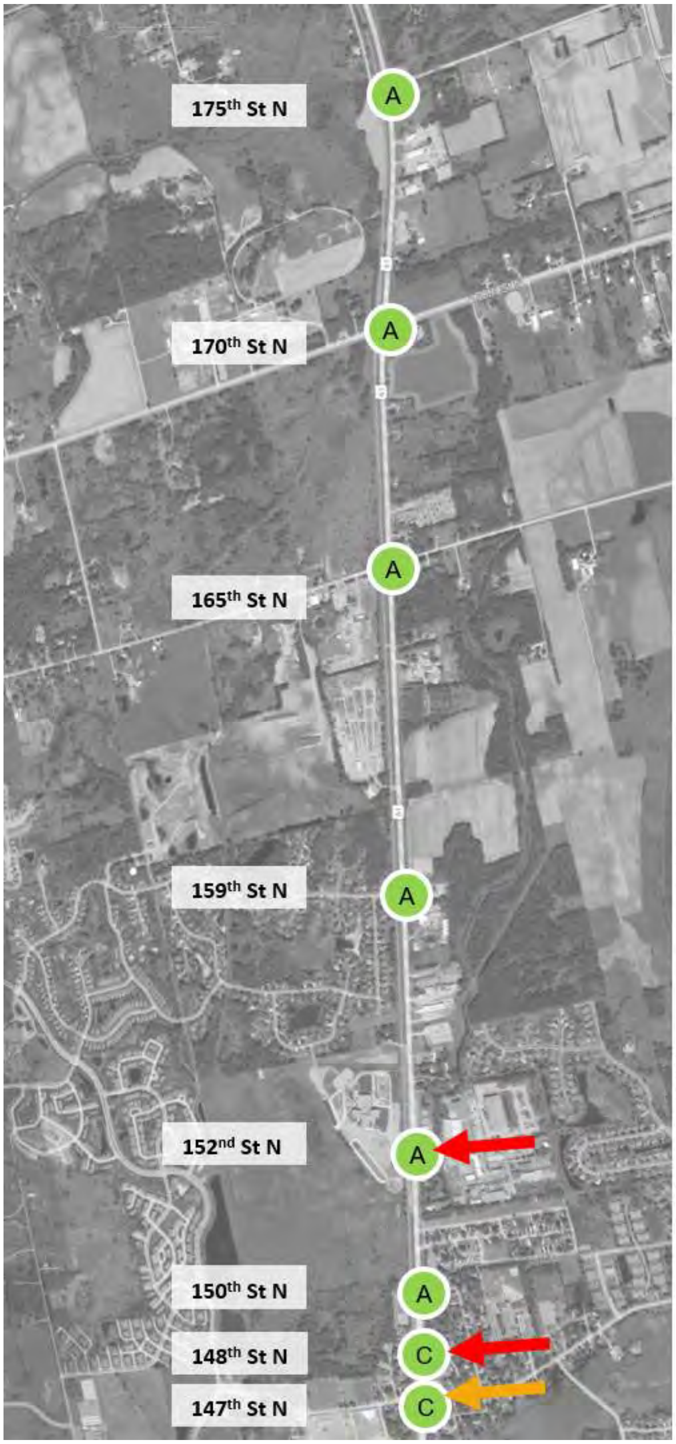
Intersection LOS
Approach LOS D
Approach LOS E
Approach LOS F

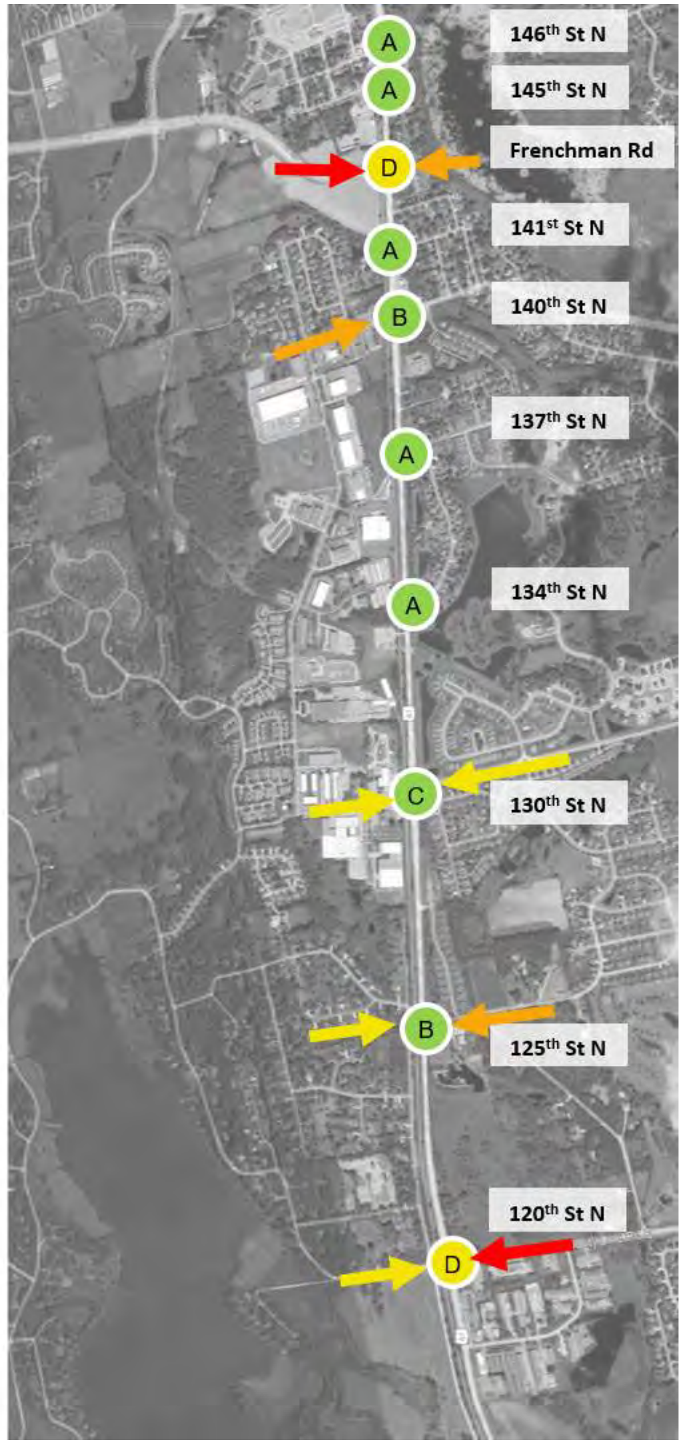




2045 No Build
AM Peak Hour
Traffic Operations

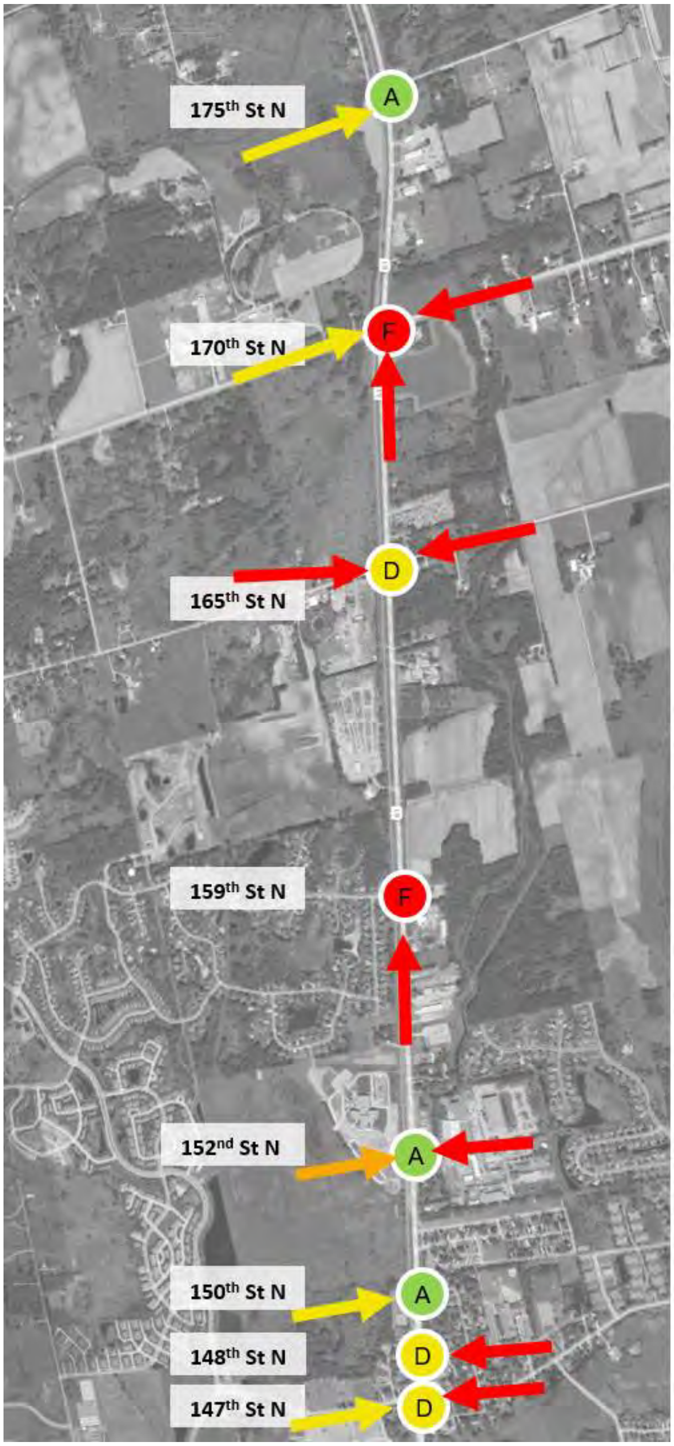
Intersection LOS A
Approach LOS D
Approach LOS E
Approach LOS F

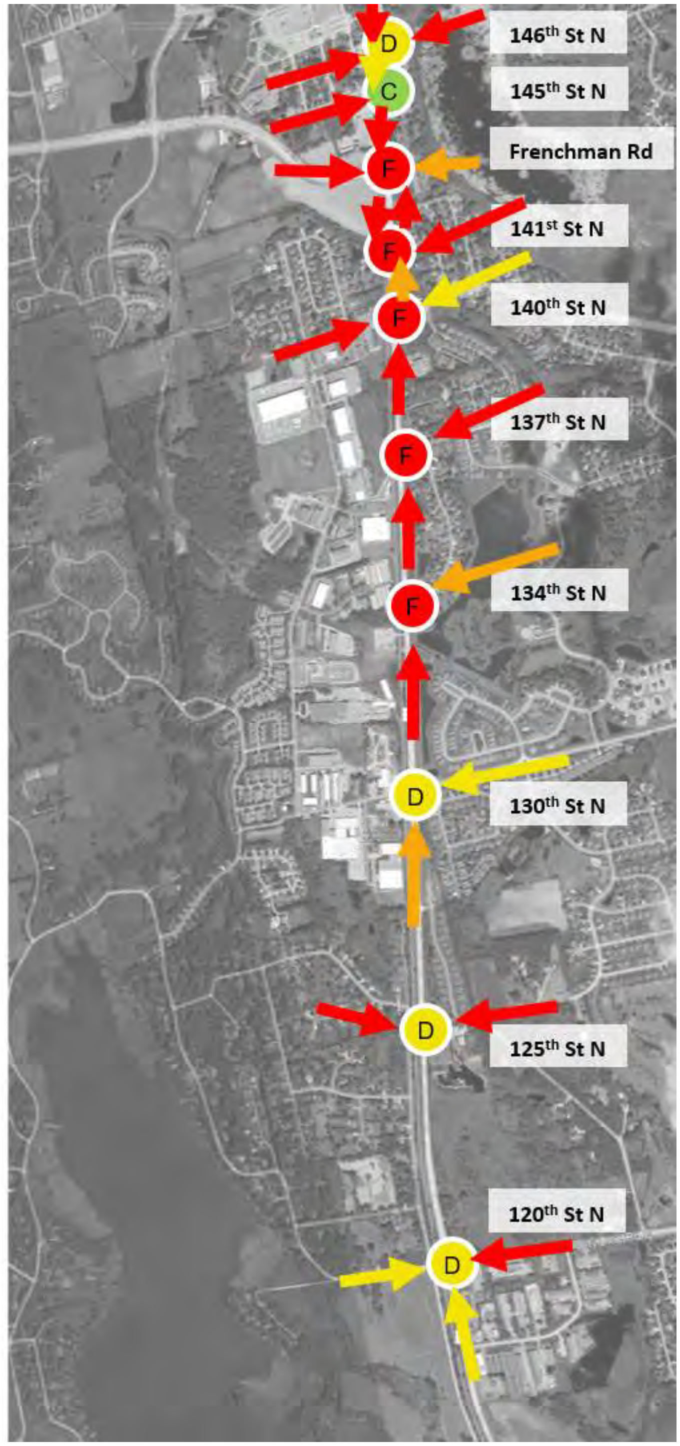




2045 No Build
PM Peak Hour
Traffic Operations

Intersection LOS A
Approach LOS D
Approach LOS E
Approach LOS F





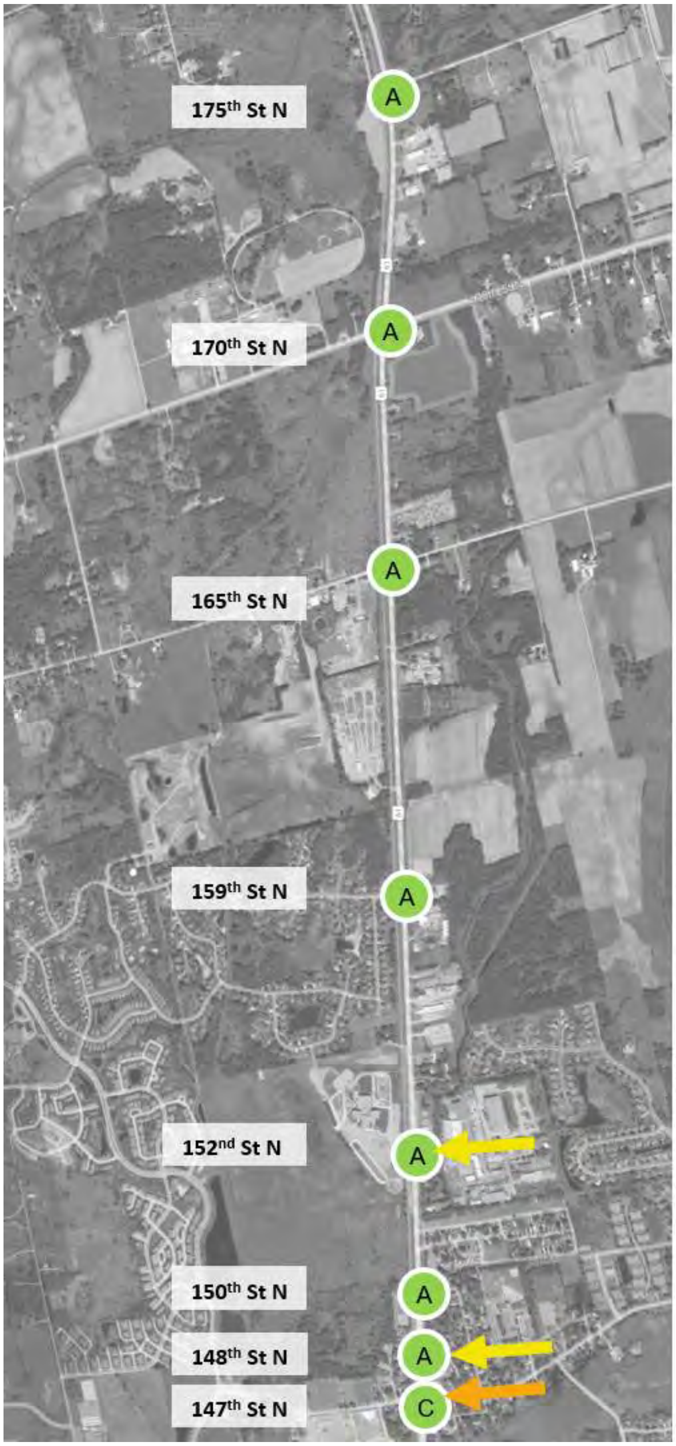
Sensitivity Analysis
2035 No Build
AM Peak Hour
Traffic Operations

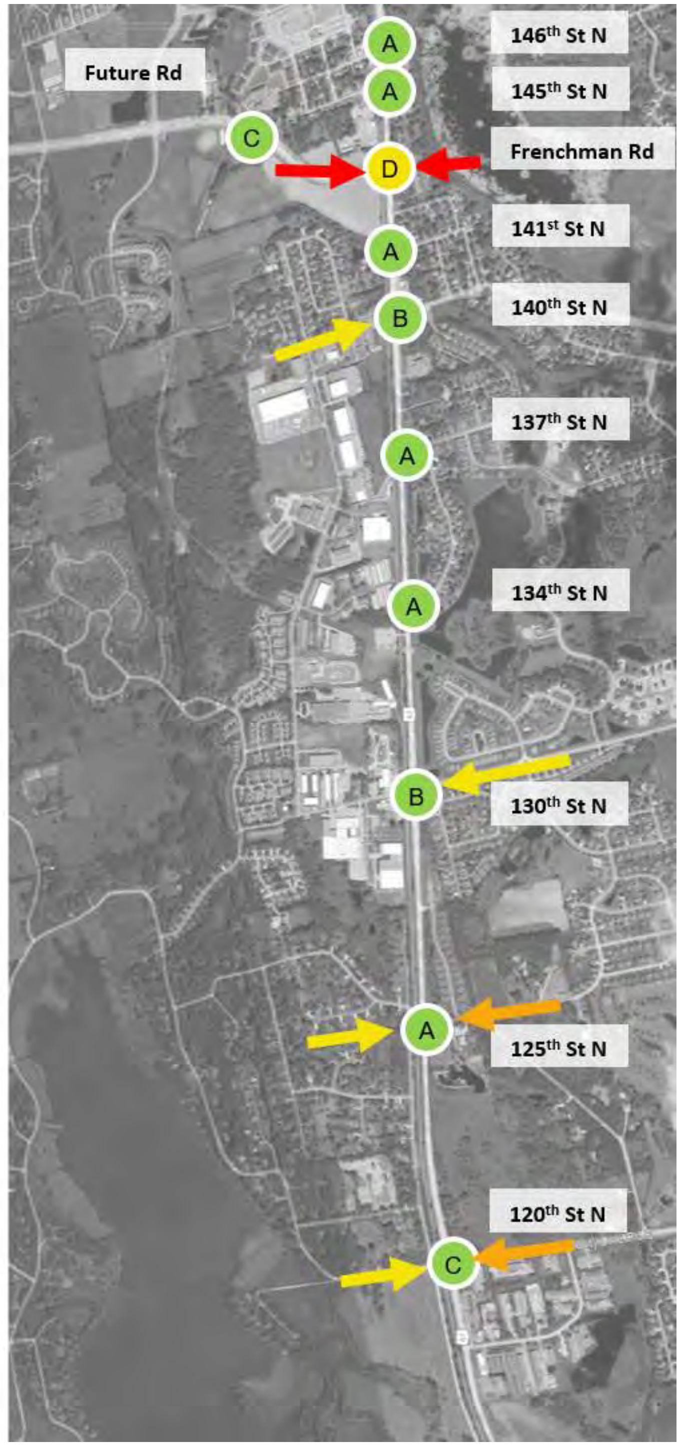
Intersection LOS A

Approach LOS D

Approach LOS E

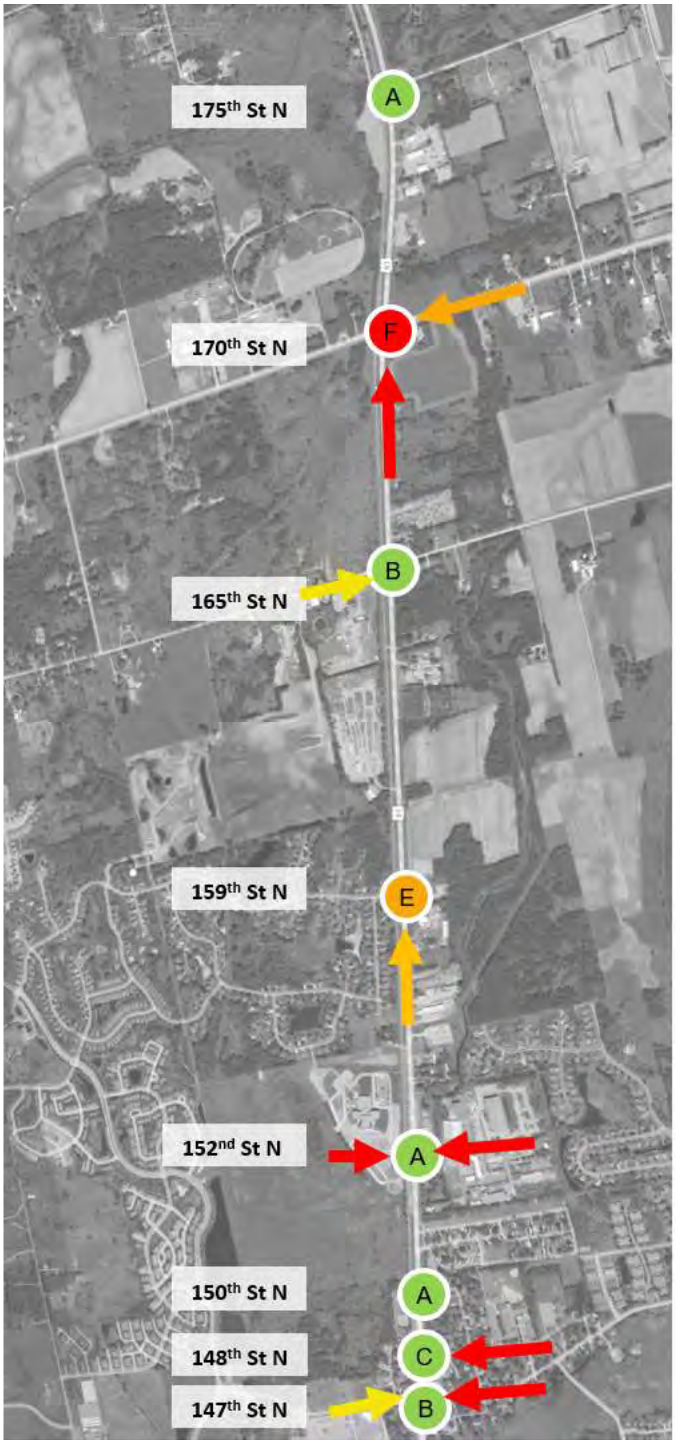
Approach LOS F

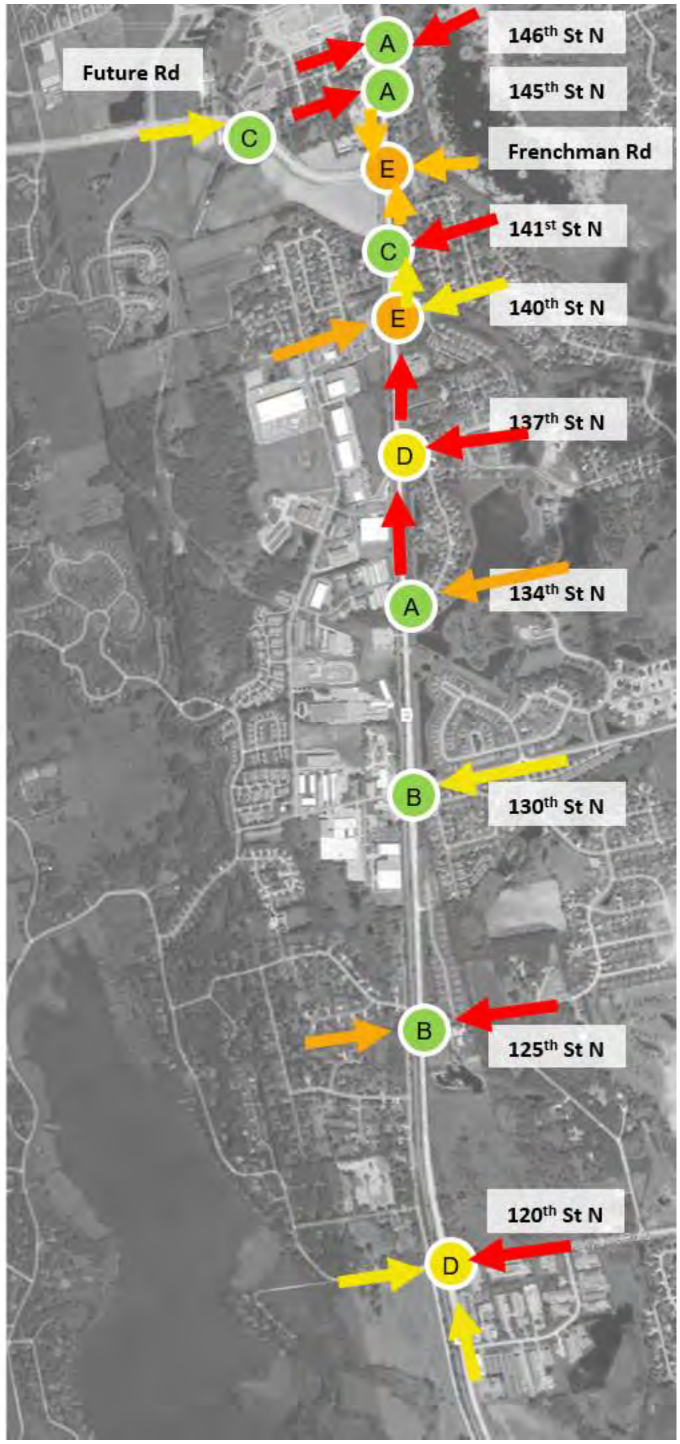




Sensitivity Analysis
2035 No Build
PM Peak Hour
Traffic Operations

Intersection LOS (A)
Approach LOS D
Approach LOS E
Approach LOS F





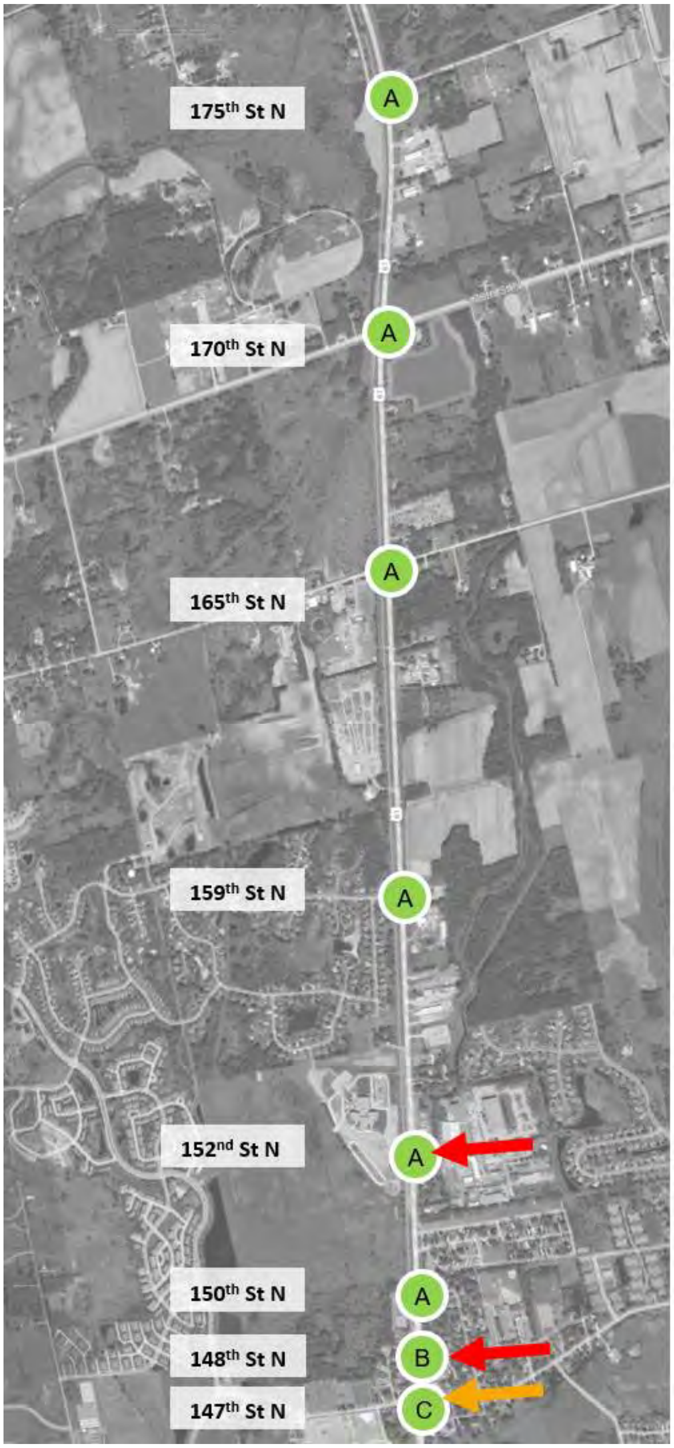
Sensitivity Analysis
2045 No Build
AM Peak Hour
Traffic Operations

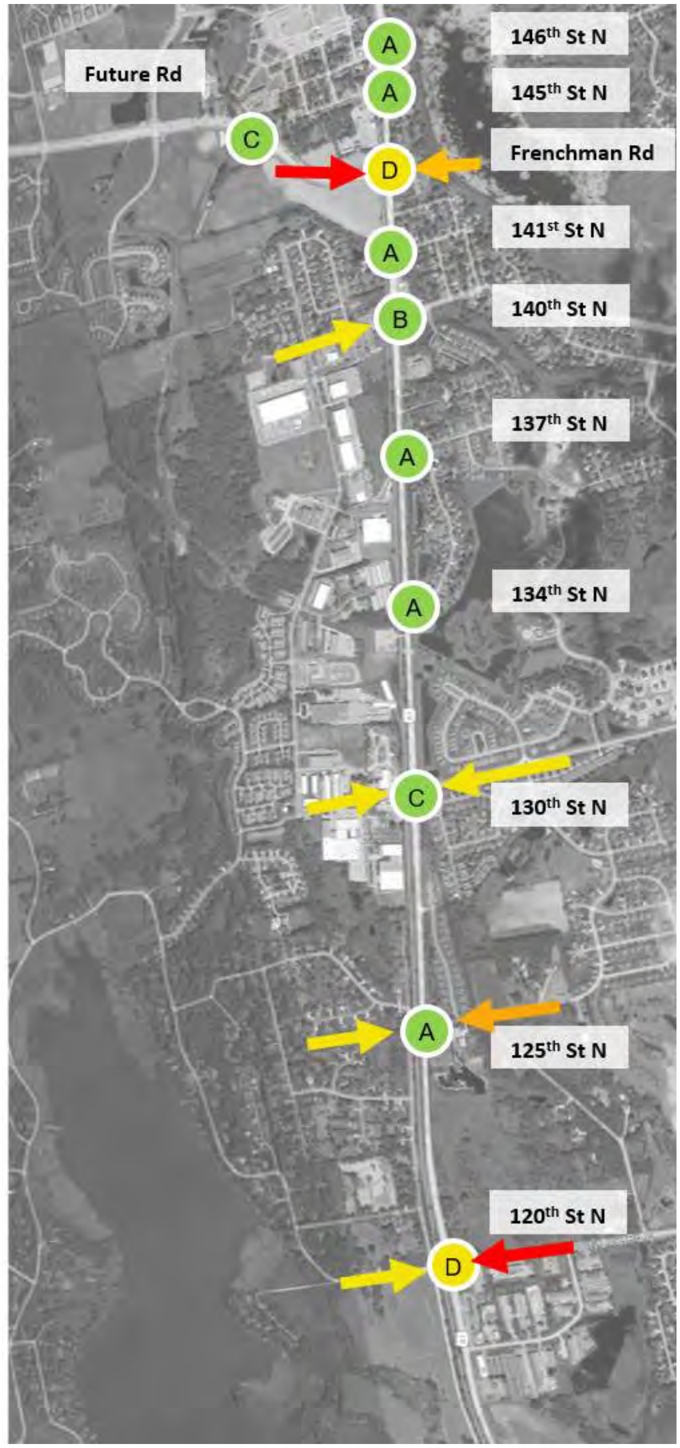
Intersection LOS (A)

Approach LOS D

Approach LOS E

Approach LOS F





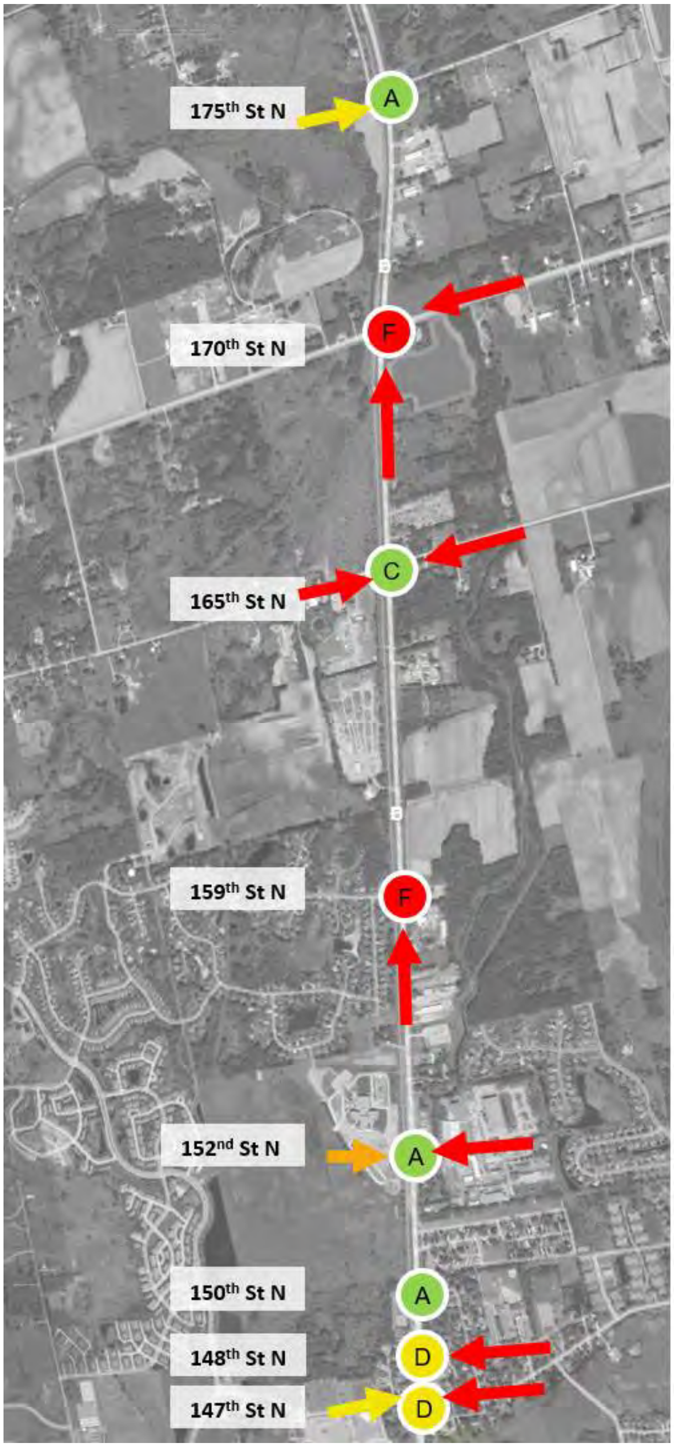
Sensitivity Analysis
2045 No Build
PM Peak Hour
Traffic Operations

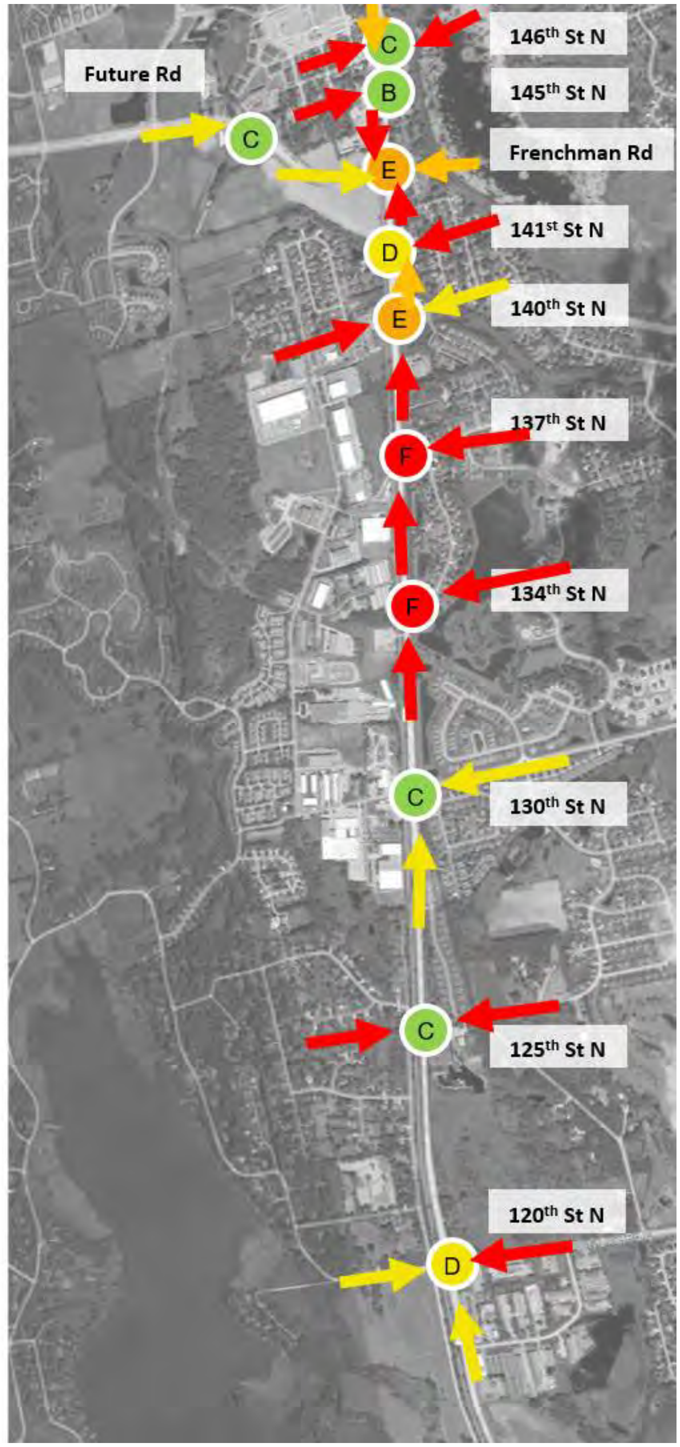
Intersection LOS A

Approach LOS D

Approach LOS E

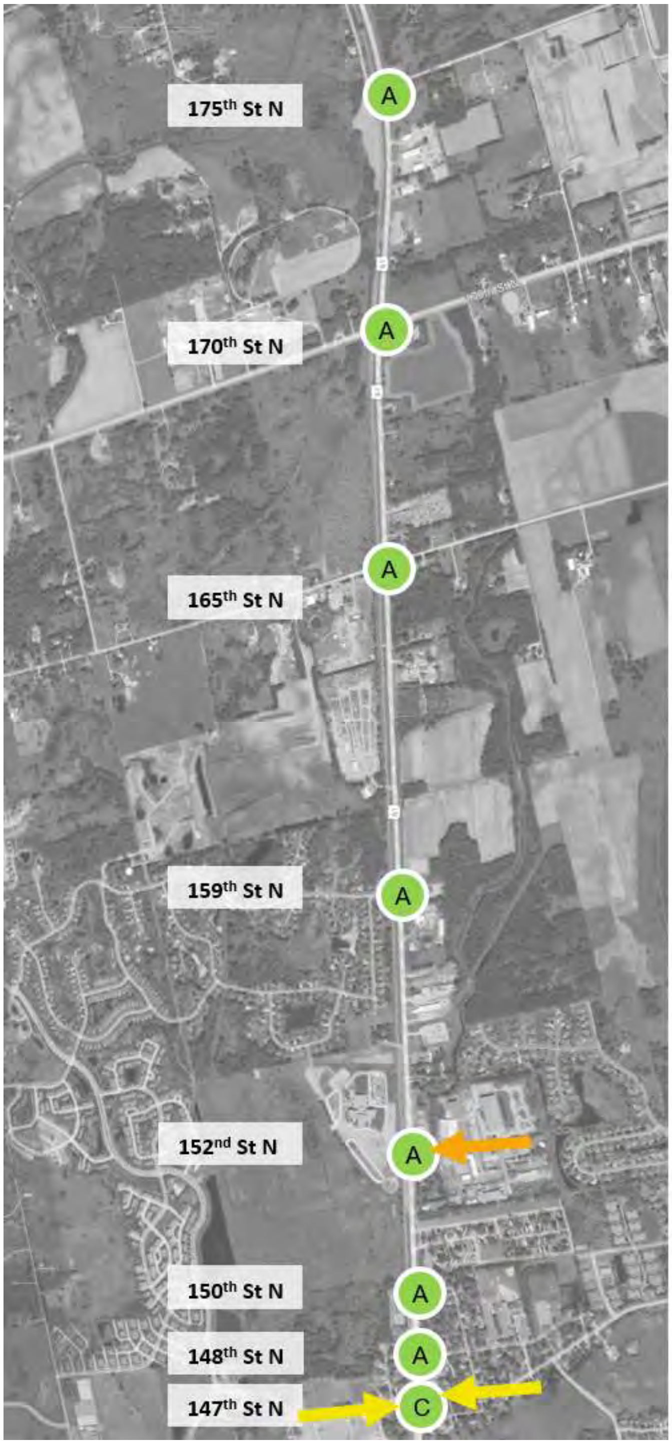
Approach LOS F

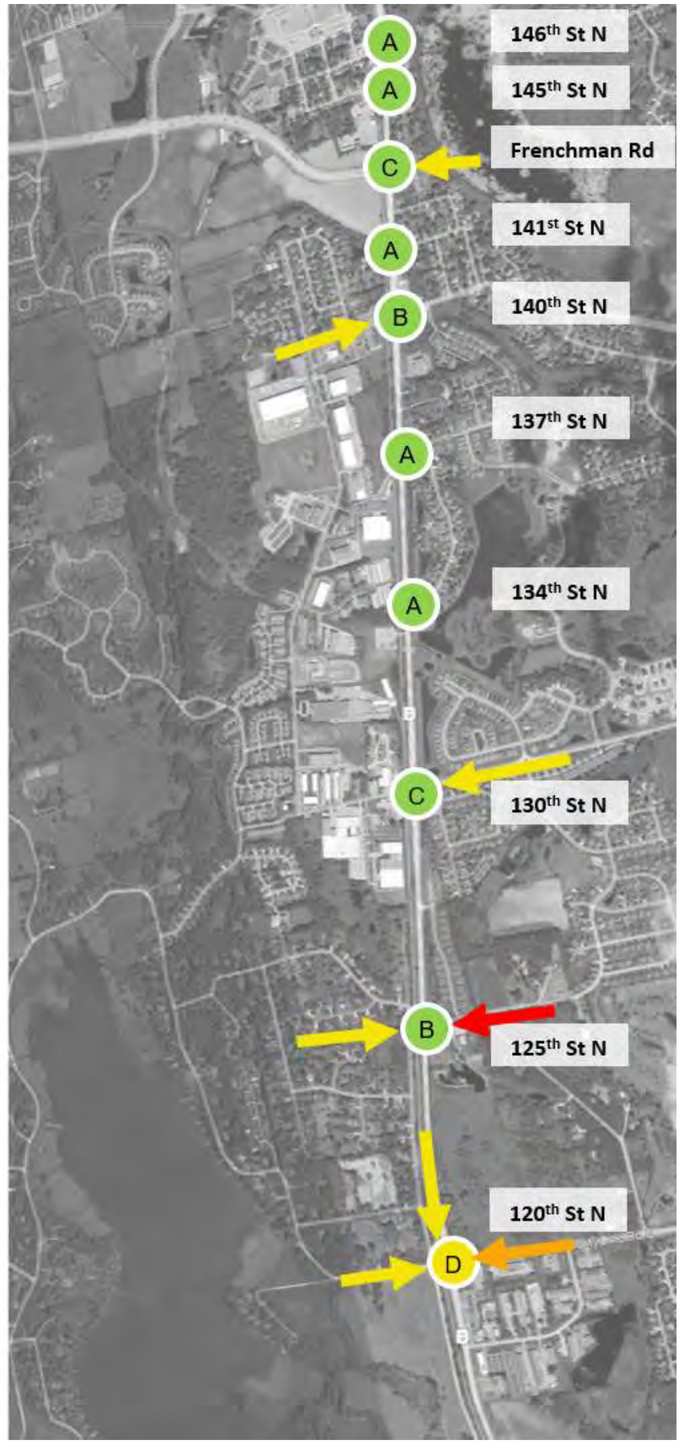




2045 Build
AM Peak Hour
Traffic Operations

Intersection LOS A
Approach LOS D
Approach LOS E
Approach LOS F





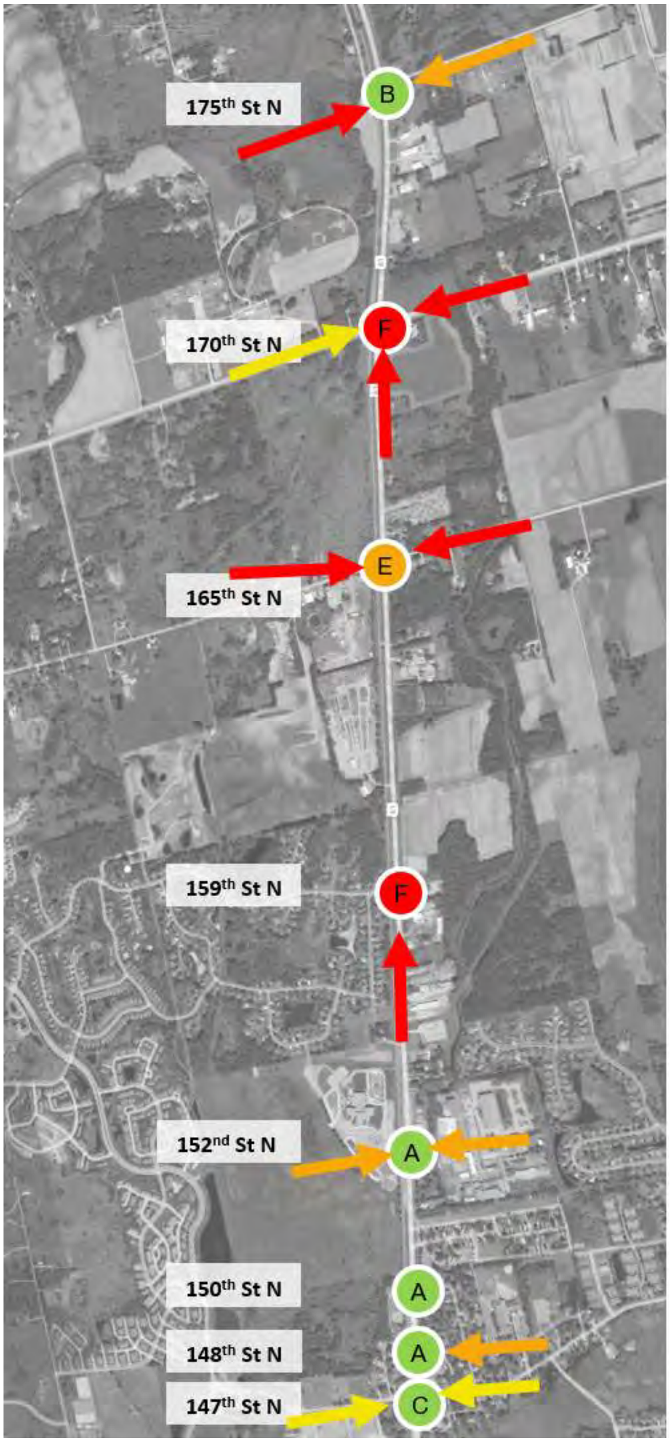
2045 Build PM Peak Hour Traffic Operations

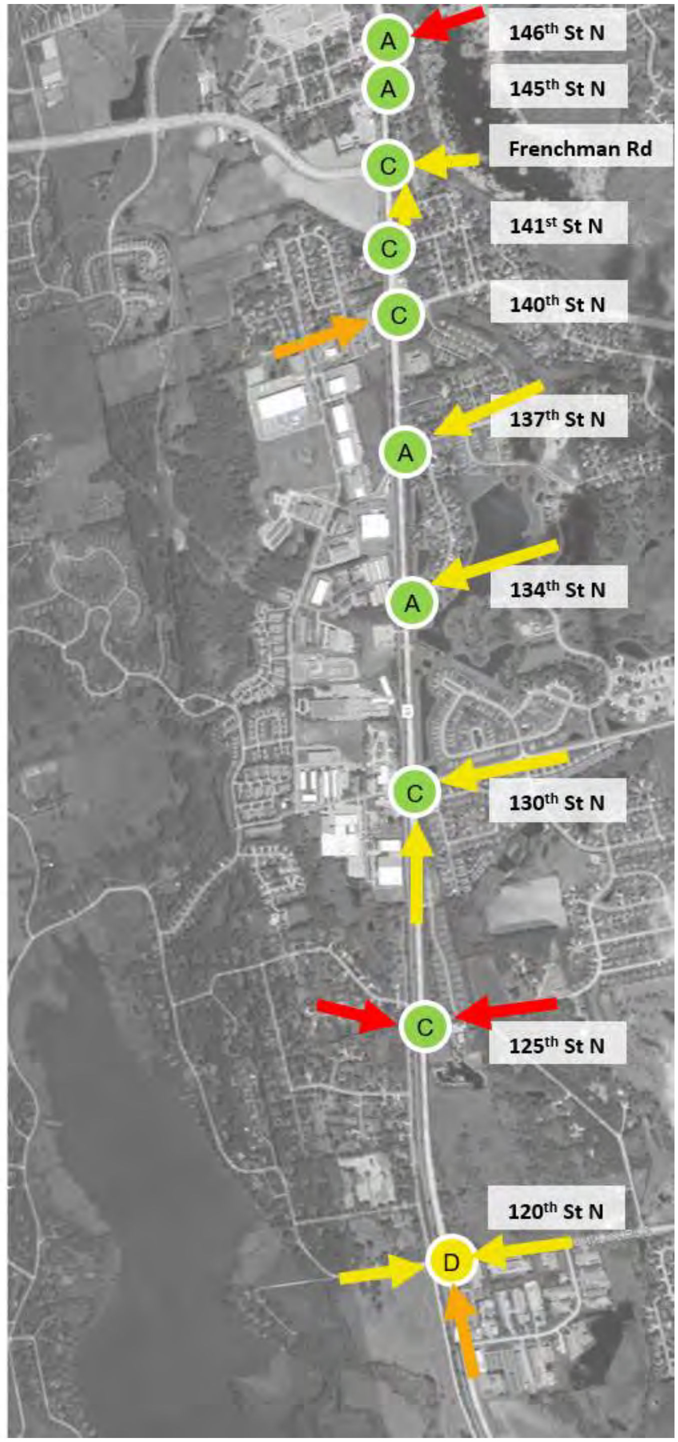
Intersection LOS (A)

Approach LOS D

Approach LOS E

Approach LOS F





Appendix C: Crash History

Intersection Safety Screening

Intersection: TH 61 at 175th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	1
Possible Injury (C)	1
Property Damage (PDO)	0
Total Crashes	2

Intersection Characteristics	
Entering Volume	11,423
Environment	Urban
Lighting	Unlit
Traffic Control	Thru-Stop

Annual crash cost = $70,000

Statewide comparison = Urban, Thru/STOP

Total Crash Rate	
Observed	0.096
Statewide Average	0.128
Critical Rate	0.350
Critical Index	**0.27**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	4.270
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.10 per MEV; this is 73% below the critical rate. Based on similar statewide intersections, an additional 6 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 170th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	1
Property Damage (PDO)	11
Total Crashes	12

Intersection Characteristics	
Entering Volume	12,593
Environment	Urban
Lighting	Lit
Traffic Control	Roundabout

Annual crash cost = *$52,600*

Statewide comparison = *Roundabout*

Total Crash Rate	
Observed	0.522
Statewide Average	0.942
Critical Rate	1.480
Critical Index	**0.35**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.106
Critical Rate	3.150
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.52 per MEV; this is 65% below the critical rate. Based on similar statewide intersections, an additional 23 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 165th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	1
Possible Injury (C)	0
Property Damage (PDO)	0
Total Crashes	1

Intersection Characteristics	
Entering Volume	10,575
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$46,000*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.052
Statewide Average	0.128
Critical Rate	0.360
Critical Index	**0.14**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	4.530
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.05 per MEV; this is 86% below the critical rate. Based on similar statewide intersections, an additional 6 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 159th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	1
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	4
Property Damage (PDO)	5
Total Crashes	10

Intersection Characteristics	
Entering Volume	10,935
Environment	Urban
Lighting	Unlit
Traffic Control	Thru-Stop

Annual crash cost = *$409,000*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.501
Statewide Average	0.128
Critical Rate	0.360
Critical Index	**1.39**

Fatal & Serious Injury Crash Rate	
Observed	5.005
Statewide Average	0.311
Critical Rate	4.410
Critical Index	**1.13**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.50 per MEV; this is 1.4 times the critical rate. If crashes were reduced by 3 over five years, this intersection would perform within normal range.

The observed fatal and serious injury crash rate for this period is 5.01 per 100 MEV; this is 1.1 times the critical rate. This site may be a sustained severe crash location.

Intersection Safety Screening

Intersection: TH 61 at 152nd Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	0
Property Damage (PDO)	0
Total Crashes	0

Intersection Characteristics	
Entering Volume	10,397
Environment	Urban
Lighting	Lit
Traffic Control	Signal

Annual crash cost = *$0*

Statewide comparison = *Signal, Low Volume (<=20K)*

Total Crash Rate	
Observed	0.000
Statewide Average	0.508
Critical Rate	0.960
Critical Index	**0.00**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.690
Critical Rate	5.770
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.00 per MEV; this is 100% below the critical rate. Based on similar statewide intersections, an additional 19 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 150th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	1
Property Damage (PDO)	2
Total Crashes	3

Intersection Characteristics	
Entering Volume	14,939
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$29,200*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.110
Statewide Average	0.128
Critical Rate	0.320
Critical Index	**0.34**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.510
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.11 per MEV; this is 66% below the critical rate. Based on similar statewide intersections, an additional 6 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 148th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	0
Property Damage (PDO)	1
Total Crashes	1

Intersection Characteristics	
Entering Volume	15,567
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = $2,600

Statewide comparison = Urban, Thru/STOP

Total Crash Rate	
Observed	0.035
Statewide Average	0.128
Critical Rate	0.320
Critical Index	**0.11**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.410
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.04 per MEV; this is 89% below the critical rate. Based on similar statewide intersections, an additional 9 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 147th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	1
Property Damage (PDO)	3
Total Crashes	4

Intersection Characteristics	
Entering Volume	13,218
Environment	Urban
Lighting	Lit
Traffic Control	Signal

Annual crash cost = *$31,800*

Statewide comparison = *Signal, Low Volume (<=20K)*

Total Crash Rate	
Observed	0.166
Statewide Average	0.508
Critical Rate	0.900
Critical Index	**0.18**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.690
Critical Rate	4.930
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.17 per MEV; this is 82% below the critical rate. Based on similar statewide intersections, an additional 18 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 146th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	0
Property Damage (PDO)	0
Total Crashes	0

Intersection Characteristics	
Entering Volume	18,475
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = $0

Statewide comparison = Urban, Thru/STOP

Total Crash Rate	
Observed	0.000
Statewide Average	0.128
Critical Rate	0.300
Critical Index	**0.00**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.020
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.00 per MEV; this is 100% below the critical rate. Based on similar statewide intersections, an additional 11 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 145th Street N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	1
Possible Injury (C)	0
Property Damage (PDO)	0
Total Crashes	1

Intersection Characteristics	
Entering Volume	14,518
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = $46,000

Statewide comparison = Urban, Thru/STOP

Total Crash Rate	
Observed	0.038
Statewide Average	0.128
Critical Rate	0.330
Critical Index	**0.12**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.580
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.04 per MEV; this is 88% below the critical rate. Based on similar statewide intersections, an additional 8 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at CSAH 8/Frenchman Rd and Muller Dr

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	1
Minor Injury (B)	3
Possible Injury (C)	6
Property Damage (PDO)	31
Total Crashes	41

Intersection Characteristics	
Entering Volume	24,500
Environment	Urban
Lighting	Lit
Traffic Control	Signal

Annual crash cost = *$512,600*

Statewide comparison = *Signal, Low Volume (<=20K)*

Total Crash Rate	
Observed	0.916
Statewide Average	0.508
Critical Rate	0.790
Critical Index	**1.16**

Fatal & Serious Injury Crash Rate	
Observed	2.234
Statewide Average	0.690
Critical Rate	3.400
Critical Index	**0.66**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.92 per MEV; this is 1.2 times the critical rate. If crashes were reduced by 6 over five years, this intersection would perform within normal range.

The observed fatal and serious injury crash rate for this period is 2.23 per 100 MEV; this is 34% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 141st St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	2
Property Damage (PDO)	0
Total Crashes	2

Intersection Characteristics	
Entering Volume	10,479
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$48,000*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.104
Statewide Average	0.128
Critical Rate	0.360
Critical Index	**0.29**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	4.560
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.10 per MEV; this is 71% below the critical rate. Based on similar statewide intersections, an additional 5 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 140th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	2
Possible Injury (C)	3
Property Damage (PDO)	8
Total Crashes	13

Intersection Characteristics	
Entering Volume	19,575
Environment	Urban
Lighting	Lit
Traffic Control	Signal

Annual crash cost = *$184,800*

Statewide comparison = *Signal, Low Volume (<=20K)*

Total Crash Rate	
Observed	0.363
Statewide Average	0.508
Critical Rate	0.830
Critical Index	**0.44**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.690
Critical Rate	3.870
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.36 per MEV; this is 56% below the critical rate. Based on similar statewide intersections, an additional 17 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 137th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	0
Property Damage (PDO)	1
Total Crashes	1

Intersection Characteristics	
Entering Volume	16,714
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = $2,600

Statewide comparison = Urban, Thru/STOP

Total Crash Rate	
Observed	0.033
Statewide Average	0.128
Critical Rate	0.310
Critical Index	**0.11**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.240
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.03 per MEV; this is 89% below the critical rate. Based on similar statewide intersections, an additional 9 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 134th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	0
Property Damage (PDO)	1
Total Crashes	1

Intersection Characteristics	
Entering Volume	15,671
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$2,600*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.035
Statewide Average	0.128
Critical Rate	0.320
Critical Index	**0.11**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.390
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.04 per MEV; this is 89% below the critical rate. Based on similar statewide intersections, an additional 9 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 130th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	2
Property Damage (PDO)	5
Total Crashes	7

Intersection Characteristics	
Entering Volume	16,900
Environment	Urban
Lighting	Lit
Traffic Control	Signal

Annual crash cost = *$61,000*

Statewide comparison = *Signal, Low Volume (<=20K)*

Total Crash Rate	
Observed	0.227
Statewide Average	0.508
Critical Rate	0.850
Critical Index	**0.27**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.690
Critical Rate	4.230
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.23 per MEV; this is 73% below the critical rate. Based on similar statewide intersections, an additional 20 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 125th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	1
Possible Injury (C)	0
Property Damage (PDO)	3
Total Crashes	4

Intersection Characteristics	
Entering Volume	19,370
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$53,800*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.113
Statewide Average	0.128
Critical Rate	0.300
Critical Index	**0.38**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	2.930
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.11 per MEV; this is 62% below the critical rate. Based on similar statewide intersections, an additional 7 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: TH 61 at 120th St N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	0
Serious Injury (A)	0
Minor Injury (B)	1
Possible Injury (C)	3
Property Damage (PDO)	9
Total Crashes	13

Intersection Characteristics	
Entering Volume	17,201
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = *$141,400*

Statewide comparison = *Urban, Thru/STOP*

Total Crash Rate	
Observed	0.414
Statewide Average	0.128
Critical Rate	0.310
Critical Index	**1.34**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.311
Critical Rate	3.180
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.41 per MEV; this is 1.3 times the critical rate. If crashes were reduced by 4 over five years, this intersection would perform within normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Segment Safety Screening

Segment: TH 61 from 120th St N to 175th N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	1
Incapacitating Injury (A)	0
Minor Injury (B)	3
Possible Injury (C)	11
Property Damage (PDO)	17
Total Crashes	32

Analysis Description	
Length	5.600 miles
VMT	122,953,446
Non-junction Crashes ONLY	

Annual crash cost per mile = *$130,036*

Statewide comparison = *Urban 2-Lane AADT 8000+*

Total Crash Rate (CR)	
Observed	0.260
Statewide Average	0.477
Critical Rate	0.640
Critical Index	**0.41**

Fatal & Serious Injury Crash Rate (FAR)	
Observed	0.813
Statewide Average	1.095
Critical Rate	2.710
Critical Index	**0.30**

The observed crash rate is the number of crashes per million vehicle miles traveled (MVMT). The critical rate is a statistical comparison based on similar trunk highways statewide. An observed crash rate greater than the critical rate indicates that the section operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.26 per MVMT; this is 59% below the critical rate. Based on similar statewide segments, an additional 47 crashes over the five years would indicate this section operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.81 per 100 MVMT; this is 70% below the critical rate. The section operates within the normal range.

Segment Safety Screening

Segment: TH 61 from 120th St N to 175th N

Statewide Averages based on 2016-2020 crashes

Crashes by Crash Severity	
Fatal (K)	1
Incapacitating Injury (A)	1
Minor Injury (B)	14
Possible Injury (C)	35
Property Damage (PDO)	97
Total Crashes	148

Analysis Description	
Length	5.600 miles
VMT	122,953,446
Non-junction AND Junction Crashes	

Annual crash cost per mile = *$382,179*

Statewide comparison = *Urban 2-Lane AADT 8000+*

Total Crash Rate (CR)	
Observed	1.204
Statewide Average	1.305
Critical Rate	1.570
Critical Index	**0.77**

Fatal & Serious Injury Crash Rate (FAR)	
Observed	1.627
Statewide Average	2.229
Critical Rate	4.360
Critical Index	**0.37**

The observed crash rate is the number of crashes per million vehicle miles traveled (MVMT). The critical rate is a statistical comparison based on similar trunk highways statewide. An observed crash rate greater than the critical rate indicates that the section operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 1.20 per MVMT; this is 23% below the critical rate. Based on similar statewide segments, an additional 46 crashes over the five years would indicate this section operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 1.63 per 100 MVMT; this is 63% below the critical rate. The section operates within the normal range.

Final Report Appendix D – Issues Identification Memorandum

Washington County

TH 61 Corridor Visioning Study – Issues Identification

May 2023

PURPOSE

Identification of issues assists decision makers to develop and evaluate improvement opportunities and concept alternatives. This Issues Identification document is intended to be a working list that summarizes and refers to information from several sources including:

1) Study documents including a review of past land use and transportation planning documents and the TH 61 Corridor Vision Existing Conditions Report;
2) Data collection and data analysis; and
3) Issues and needs identified through public, agency, and stakeholder engagement

This combined analysis led to identification of several transportation issues within the corridor vision study limits, which are summarized below:

<u>Intersection Safety</u>

Data analysis shows there are statistically significant safety conditions at three intersections along the study corridor 159th Street N, CSAH 8 (Frenchman Road), and 120th Street N. Several comments were also received expressing safety concerns for turning left onto or off of Highway 61, some comments suggested added turn lanes on Highway 61 to improve safety. Further information regarding these vehicle safety issues, and crash rates can be found in the Existing Conditions Report.

<u>Traffic Operations/Mobility Issues</u>

Based on existing (2022/2023) and forecast (2035 and 2045) traffic volumes, the Highway 61 corridor has varying levels of mobility concerns. Currently, there are no intersections in the AM peak hour operating at unacceptable conditions (LOS E/F). The existing PM peak shows two intersections (CSAH 8/Frenchman Rd. and 170th St.) at LOS E and F, respectively. However, there are a number of intersections with side street approaches that are experiencing higher levels of delay in both the AM and PM peak hours. These delays are due to longer signal cycles for Highway 61 as opposed to the side streets or because side streets with stop control have difficulty finding caps in Highway 61 traffic to safely turn onto the highway.

Under the 2035 "No Build" condition, the AM peak hour conditions continues to show no intersection operation concerns other than a few side street approaches that experience LOS E/F. The 2023 PM peak begins to show substantial operational issues with five intersections operating at LOS F and one intersection at LOS E. Again, several side street approaches are experiencing higher levels of delay (LOS E/F).

By 2045, the "No Build" AM peak is starting to show declining intersection operations (LOS D), but the overall intersection operations all remain acceptable, with additional side street approaches showing increased delays. The 2045 PM peak indicates significant operational concerns with seven intersections operating at LOS F and a high number of side street approaches operating at LOS E/F.

Lack of Safe/Comfortable Pedestrian Bicycle Crossings

Public engagement and data review/analysis indicated several corridor-wide issues related to pedestrian and bicycle safety. The perception is there are limited locations to safely and/or comfortably cross Highway 61. The safety analysis identified pedestrian/bicycle crashes near the intersection of TH 61 at 159th Street N,. 145th/146th Street N., CSAH 8 (Frenchman Road), and130th Street N. Public comments indicated the desire for additional crossing opportunities in desirable locations and even a grade-separated option (overpass) in downtown Hugo. Further information regarding these pedestrian/bicycle safety issues can be found in the Existing Conditions Report.

Pedestrian/Bicycle Connectivity

Pedestrian Facilities
Input collected during the Phase I engagement efforts (open house meeting, INPUTiD, etc.) indicated the need for increased pedestrian connectivity, especially through the Hugo downtown area where sidewalks on the east side of Highway 61 end at CSAH 8/Frenchman Road on the south and 148th Street on the north. Specific sidewalk connects were noted from 148th St. to 152nd St. and from 140th St. to 130th St. Public comments relating to connectivity also included sidewalk condition, useable width, and ADA compliant facilities.

Bicycle Facilities
Public engagement indicated the Hardwood Creek Trail corridor is an important asset for the community, but the lack of a continuous system to the south and connecting facilities to the east/west of Highway 61 are a deterrent to bicycle use and potentially suppressing increased multimodal use of the corridor. Also, consideration for separating pedestrians and bicycles along the Hardwood Creek trail (separate walking path/bike path) is desirable to reduce conflicts among these users. Further information regarding corridor bicycle connectivity can be found in the Existing Conditions Report.

Development Plans and Land Access

Several past land use and transportation planning efforts have been conducted within the corridor visioning study area, including the 2007 Hugo Downtown Plan/Development Guidelines and 2008 US 61 in Hugo – Corridor Access Management Plan/Memorandum of Agreement. These planning efforts acknowledge the need to plan for new/redevelopment along the corridor while also providing safe and efficient access to adjacent properties. Currently, the existing access conditions do not meet recommended spacing in several segments of the highway corridor. Future access plans must give consideration to these past planning efforts but must also consider safety and mobility conditions for all users and the potential economic conditions of existing and future residential, commercial, and industrial businesses located in the area.

Supporting/Supplemental Issues Identified

- Sidewalk maintenance issues (winter maintenance)
- Snowmobile usage and safety (crossing CSAH 8/Frenchman Rd. and other local streets)
- Long signal delays for side streets
- Red light compliance (running red light)
- Lack of turn lanes/passing on shoulder
- Corridor/intersection lighting
- Vehicle speeds
- Capacity expansion
- Future transit service(s)

Final Report Appendix E – Corridor Layout

Washington County

CITY OF HUGO EST. 1906
Washington County
BOLTON & MENK
Real People. Real Solutions.

TH 61 Through the City of Hugo

Washington County, MN
August 2024