WORK SESSION
City Hall Plaza Remodel Project
5:45 – 7:00 PM

AGENDA
CHASKA CITY COUNCIL
CHASKA CITY HALL - COUNCIL CHAMBERS & ZOOM
Monday, April 20, 2026
7:00 PM

1. Call to Order
2. Pledge of Allegiance
3. Roll Call
4. Adopt Agenda
5. Visitor Presentation
   - 5.A. Recognition - Chaska High School Hawks Basketball Team - State Champions
   - 5.B. Annual State of the Library Report - Jodi Edstrom and Kevin Spencer
6. Approve Previous Meeting Minutes
   - 6.A. Minutes from 03-30-2026
7. CLOSED SESSION
   - 7.A. Discussion of Initiation of Arbitration with Mueller Systems, LLC "The meeting will be closed pursuant to MN stat. 13D.05 subdivision 3(b) to receive legal advice regarding arbitration with Mueller Systems, LLC regarding the AMI contract."
8. OPEN SESSION
9. Consent Items
   - 9.A. Resolution 2026-18 Adopting the 2025 Carver County Hazard Mitigation Plan
   - 9.B. Approve Low-Potency Hemp Retail Registrations
   - 9.C. Approve Transient Accommodations License - Hazeltine National Golf Club
   - 9.D. Approve Transient Accommodations License - Super 8

9.E. Approve Transient Accommodations License - Townsquare Place

9.F. Approve Temporary Liquor License - Chaska Lions Club

9.G. Approve Tobacco License - Excelsior Vintage DBA River Bend Cellars & Spirits

9.H. Approve On-Sale Liquor at a Community Event - Schram Haus Brewery

9.I. Adopt Resolution 2026-28 Approving the Annexation into Chaska of a portion of the Raser property currently in Dahlgren Township

9.J. Adopt Resolution 2026-29 Approving the Final AUAR for Big Woods Business Park

9.K. Adopt Resolution 2026-31 Authorize Initiation of Arbitration with Mueller Systems, LLC

9.L. Adopt Resolution 2026-32 Authorizing Use of Eminent Domain for Easements for CSAH 61 Trunk Sewer Extension for serving Highpoint Vistas and Fultonwood Development Utilities

9.M. Addendum Chaska Community Center Meeting & Event Room Rental Agreement University of MN

10. Action Items

10.A. Awarding of Contracts for Outlot C of the Chaska Municipal Services Building

11. Bills

11.A. Accounts Payable Claims Roster 4-20-2026

12. Other Business

12.A. City Administrator's Report

12.A.i. Biweekly 04/20/2026

13. Adjourn

Chaska Economic Development Authority Meeting
Immediately following City Council

2026 State of the Library

Chaska



Public Services – Library

Our Vision

To inspire intellectual curiosity, the joy of discovery, and facilitate lifelong learning



Vision in Action

Extended Access



Adult Programs



Youth Literacy



CARVER COUNTY

Extended Access

- [ ] Launched at Victoria in September 2025
- [ ] Allows adult patrons to use the library during select non-staffed hours
- [ ] Available Services
- [ ] How to Sign up
- [ ] Safety & Security
- [ ] Expanding to additional branches in 2026

What We Delivered



- 48,000 in-person event attendees
- 1,200+ free programs, including 550+ storytimes
- 34,000 virtual program views
- 260,000 Website Visits
- 19,000 technology solutions
- 31,000 information questions answered
- 6,500+ new library card users

Community Connections

- 15,000 outreach connections
- 1,100 volunteer hours
- 7.5% growth in social media followers



Collection Use



- Physical checkouts: 1.1 million
- Digital checkouts: 473,000
- 1,400 mobile Wi-Fi connections
- 25,000 new collection items

Estimated Library Value



**This value was calculated using the American Library Association value calculator.*

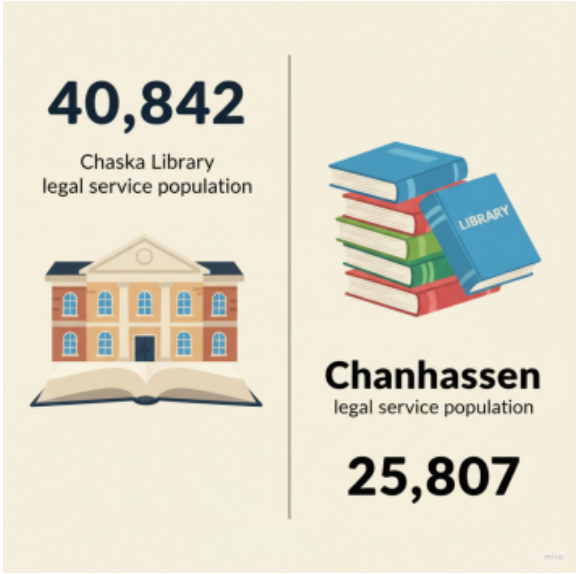
Looking Ahead

- Future Library Needs
- Expanding Extended Access
- Chaska Library Building Project
- Programs & Partnerships
- Collection



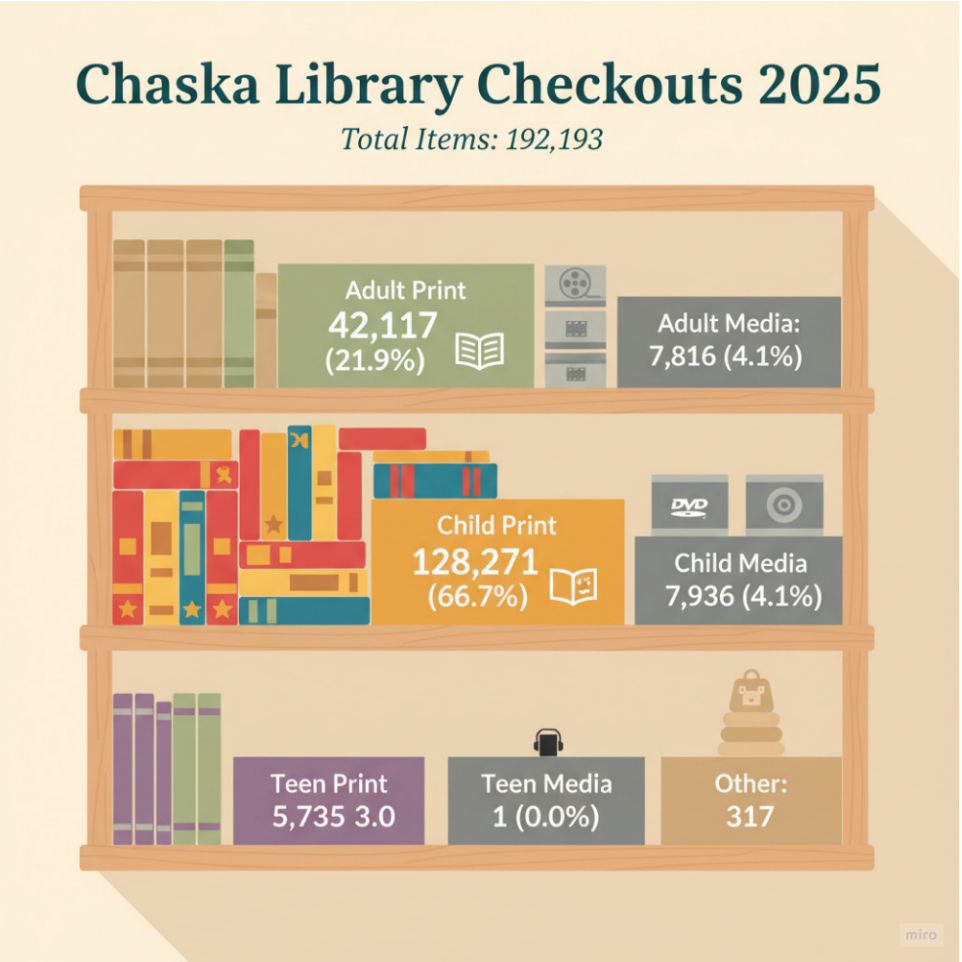
Chaska Library
Our present…







Chaska Library's Book Basics

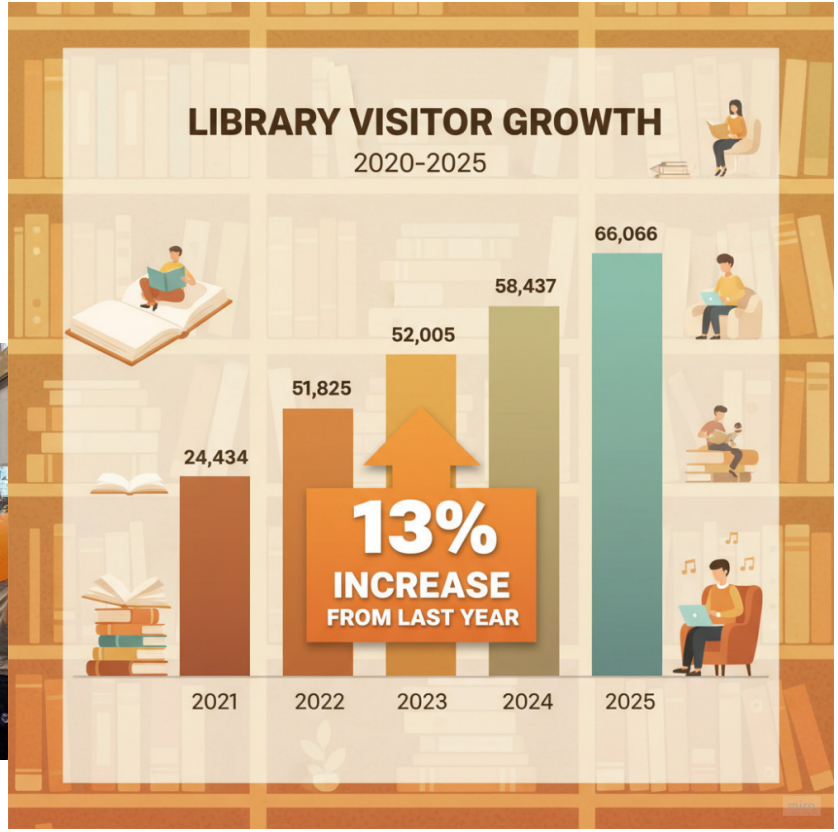


Chaska Patrons









Chaska Connections







CARVER COUNTY

Storytimes at Chaska





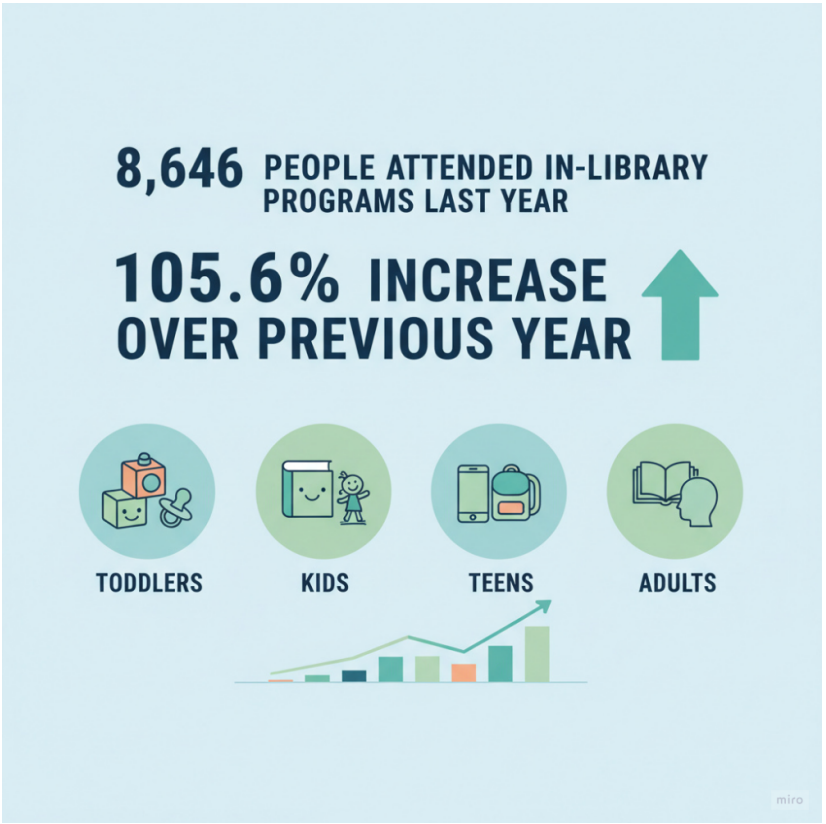


Chaska Programming









Public Services – Library

Our Future…







Missoula, MT
Population 76514
2022 World's Best Public Library (International Federation of Library Associations)





Howard Lake, MN
Population 2326
2024 Minnesota's first net-zero library

Public Services – Library

CARVER COUNTY

Friends of the Chaska Library









Questions?

Contact us…

Jodi Edstrom

Director, Carver County Library

jedstrom@carvercountymn.gov

Kevin Spencer

Branch Manager, Chaska

kspencer@carvercountymn.gov

- MINUTES -
CHASKA CITY COUNCIL
MARCH 30, 2026

1. Call to Order
The meeting was called to order by Mayor Hubbard at 7:00 p.m.

2. Pledge of Allegiance

3. Roll Call
Roll call was taken. Present: Mayor Hubbard and Councilmembers Sheveland, Benesh, and Hatfield.

Councilmember Grau was absent.

Also Present: Matt Podhradsky, City Administrator; Elise Durbin, Assistant City Administrator; Christophe Morschen, City Attorney; Alex Mollenkamp, Assistant City Engineer; Matt Clark, City Engineer; and Krista Mark, Communications Coordinator.

4. Adopt the Agenda
Motion by Councilmember Benesh, second by Councilmember Hatfield to adopt the agenda as presented. Motion carried.

5. Visitor Presentation

6. Approve Previous Meeting Minutes
6.A. Approve the March 16, 2026 City Council Meeting Minutes
Motion by Councilmember Hatfield, second by Councilmember Sheveland to approve the minutes of the March 16, 2026, City Council meeting.
Motion carried.

7. Consent Agenda
Motion by Councilmember Sheveland, second by Councilmember Benesh to approve the Consent Agenda Items A through H:

A. MCSFS Statewide Organics Management Infrastructure Grant Program Letter of Support

Motion to approve a letter of support to the Minnesota Pollution Control Agency's MCSFS Statewide Organics Management Infrastructure Grant Program for SMSC's Dakota Prairie Composting facility.

B. Resolution No. 2026-21, Approving the 2026 Chaska Town Course Parking Lot Phase 2 Overlay Program

Motion to approve Resolution 2026-21 awarding the bid for the 2026 Chaska Town Course Parking Lot Phase 2 Overlay Program to Park Construction in the low bid amount of $80,475.01

C. Adopt Resolution No. 2026-22 Approving the 2026 Pavement Management Program

Motion to approve Resolution 2026-22 awarding the bid for the 2026 Pavement Management Program to Valley Paving in the low bid amount of $1,029,654.81.

DRAFT

D. RFA: Approve Teamsters Local #320 MOA for Wage re-Opener

Motion to approve Memorandum of Agreement between the City of Chaska and Teamsters Local #320, with the agreement retroactive effective January 1, 2026.

E. Extend LiveBarn Streaming Agreement at the Chaska Community Center

Recommendation of Council to approve extending the LiveBarn Streaming agreement at the Chaska Community Center Arena

F. Adopt Resolution No. 2026-24 Bond Sale Reimbursement

Motion to adopt Resolution No 2026-24 establishing compliance with reimbursement bond regulations under the Internal Revenue Code of 1986.

G. Approving Resolution No. 2026-26 for the Plans and Specifications for the North Water Treatment Plant Project and Authorizing the Solicitation of Public Bids

Motion Approving Resolution 2026-26, Approving the Plans and Specifications for the North Water Treatment Plant Project and Authorizing the Solicitation of Public Bids.

H. Adopting Resolution No. 2026-27, Authorizing of MCES I and I Grant Participation

Motion to adopt Resolution #2026-27 adopting the participation in the 2023 MCES I & I Grant Program.

Councilmember Hatfield asked how much the Dakota Prairie Composting facility expanding. Assistant City Administrator Elise Durbin said the grant is so that they can operate at full capacity, as it has only been operating at partial capacity.

Mayor Hubbard noted in the MCSFS letter of support that the number of metric tons was discussed. Councilmember Hatfield stated she got confused whether that meant what MCSFC had been doing before, or if they were adding additional services.

Mayor Hubbard added she had a discussion with City Administrator Podhradsky today about composting facility, and if there had been any complaints about the smell from composting, and to their knowledge, there have been none.

8. Action Items

8.A. Approving Resolution No. 2026-23 Accepting Feasibility Study for 2026 Downtown Reconstruction

City Administrator Podhradsky presented this item to the Council. City Administrator Podhradsky introduced Assistant City Engineer Alex Mollenkamp to give further details on the project. Ms. Mollenkamp presented the project to the Council.

City Engineer Matt Clark presented additional details about the project to the Council and the next steps.

Mayor Hubbard stated she knocked on doors in that neighborhood, and there were people who showed interest in the project back then, but they could have moved since then.

Councilmember Sheveland asked how the channel would be filled up. Mr. Clark noted that previous designs have tried to mimic the same volume of water that can be stored and passed through underneath the channel with an underground pipe and filling it in over the top. The goal is to give residents a more usable property and manage the conveyance.

DRAFT

Councilmember Sheveland asked about excess snowfall and melts, and if the underground pipe could accommodate that much water, or if residents would have flooded yards. Mr. Clark said the pipe sizing would be set up to convey at a minimum the same volume of water that is coming through the channel today.

Mayor Hubbard noted that she looked forward to hearing what comes from discussions that Staff have with neighbors regarding the channel.

Motion by Councilmember Hatfield, second by Councilmember Benesh to adopt Resolution No. 2026-23, accepting the feasibility study for the downtown reconstruction project for 2026.
Motion carried.

9. Bills

9.A. Accounts Payable Claims Roster 03-30-2026

Motion by Councilmember Sheveland, second by Councilmember Benesh to approve the bills as presented. Roll call was taken. Voting aye: Councilmembers Hatfield, Benesh, Sheveland, and Mayor Hubbard. Voting nay: None
Motion carried.

10. Other Business

Councilmember Hatfield:

- Shared the following upcoming events: Cocoa and Cops (April 1) at 11:00 a.m. at the Ice Arena, Battle of the Badges starts March 31-April 6, between the Police and Fire Departments to raise money and food, with the most donations deemed the winner.
- Congratulated the High School basketball team and Coach Nicki on their win.
- Shared that the Council Retreat is on April 9-10, and residents should share questions and concerns that may be relevant for the Council to know.
- Shared that community members were raising questions about the KFC building because it has for lease signs up.

City Administrator Podhradsky:

- Shared that City Staff are in the process of working with the land bank to develop a deal to present to the owners of KFC to purchase the property, but until that happens, the owners will try to lease that space.
- Shared that the Council retreat will be held in the new Public Safety Center, and will be the first group to utilize the new EOC center.
- Shared that there will be a Work Session on Monday, April 6, with a tour of the Community Center, and spend time getting everybody up to speed on the Community Center master plan.
- Congratulated the boys' basketball team on their state championship, and the Chaska Curling Center on their national championship win.

Councilmember Benesh:

- Congratulated the Chaska boys' basketball team on winning the state championship this past week.

DRAFT

Councilmember Sheveland:

- Echoed congratulations to the basketball team on their win.
- Wished everyone a Happy Easter and spring break.

Mayor Hubbard:

- Recapped the TIF extension hearing she attended with the Senate Tax Committee.
- Shared that she spoke in front of the Senate Consumer Protection and Commerce Committee regarding the Brandondale community.
- Attended the Employee Recognition Breakfast for the City.
- Attended the county Commission meeting and discussed plans for the library.
- Congratulated the Curling Team on their national championship, and the Chaska boys basketball team on their state championship win.
- Shared that the American Legion Auxiliary is hosting an Easter egg hunt on Saturday (April 4) at 10:00 a.m.
- Wished everyone a Happy Easter.
- Shared that the next official Council meeting will be held on April 20.

10.A. City Administrator's Report
10.A.i. Bi-Weekly Report 03-30-2026

11. Adjourn
Motion by Councilmember Sheveland, second by Councilmember Hatfield to adjourn the meeting at 7:41 p.m.
Motion carried.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: **Resolution 2026-18 Adopting the 2025 Carver County Hazard Mitigation Plan**

Prepared By: Stephen Kraus, Fire Chief

Background

To be eligible for hazard mitigation grant funding through FEMA, a hazard mitigation plan must be in place and adopted. Carver County last completed and adopted a plan in December 2020, and is required to update the plan in order to maintain eligibility.

In 2025, Carver County began the process of updating the Hazard Mitigation Plan. The City of Chaska was engaged throughout the process providing feedback and revisions for the city. This plan was recently approved by FEMA, State of Minnesota Homeland Security and Emergency Management, and Carver County. Now, all cities are being asked to adopt the plan.

Recommendation

Staff recommends the City Council adopt Resolution 2026-18 adopting the 2025 Carver County Hazard Mitigation Plan.

CITY COUNCIL ACTION REQUESTED

Motion to adopt Resolution 2026-18 adopting the 2025 Carver County Hazard Mitigation Plan.

CITY OF CHASKA

CARVER COUNTY, MINNESOTA

RESOLUTION

DATE: April 20, 2026 RESOLUTION NO. 2026-18

MOTION BY COUNCILMEMBER_____ SECOND BY COUNCILMEMBER_____

A RESOLUTION ADOPTING THE 2025 CARVER COUNTY HAZARD MITIGATION PLAN

WHEREAS, the City of Chaska recognizes the threat of natural hazards to people and property within the City of Chaska; and

WHEREAS, the City of Chaska has participated in the development of the 2025 Carver County Hazard Mitigation Plan in accordance with Federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, the 2025 Carver County Hazard Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property within the City of Chaska from the impacts of future hazards and disasters; and

WHEREAS, by adoption by the City of Chaska demonstrates its commitment to hazard mitigation and achieving the goals outlined in the 2025 Carver County Hazard Mitigation Plan,

WHEREAS, approval of the 2025 Carver County Hazard Mitigation Plan by the Federal Emergency Management Agency (FEMA) will make Carver County and participating jurisdictions eligible to apply for FEMA Hazard Mitigation Assistance grants; and

NOW, THEREFORE, BE IT RESOLVED, that the City of Chaska supports the hazard mitigation planning effort and wishes to adopt the 2025 Carver County Hazard Mitigation Plan.

Passed and adopted by the City Council of the City of Chaska, Minnesota, this 20th day of April, 2026.

_____
Taylor Hubbard, Mayor

Attest: _____
Chaska Deputy Clerk

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Approve Low-Potency Hemp Retail Registrations

Prepared By: Denise Beebe, Senior Clerk

BACKGROUND

State law requires retailers selling low-potency hemp edible products to obtain a state-issued Low-Potency Hemp Retail License. In addition to the state license, they are required to register with the city and receive a local registration permit.

SUMMARY

The below-listed businesses have obtained a state-issued low-potency hemp retail license and have completed all local registration requirements. City Council approval is required to finalize registration and authorize operation within the City.

- Nothing But Hemp – 820 Yello Brick Rd
- Schindler's Beverage DBA Chaser's – 3050 Chaska Blvd.
- Kwik Trip Inc. – 2900 N. Chestnut St.

CITY COUNCIL ACTION REQUESTED

Motion to approve low-potency hemp edible retail registrations for Nothing But Hemp, Schindler's Beverage Center DBA Chaser's and Kwik Trip Inc. allowing them to sell low-potency hemp edible related products.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Transient Accommodation Renewal – Hazeltine

Prepared By: Denise Beebe, Senior Clerk

Background

In 2018, Council adopted an ordinance requiring all hotel and motel operations—referred to as transient accommodations—to obtain a license. This ordinance was later amended in 2021 to further strengthen its effectiveness.

The purpose of the ordinance is to promote public safety by ensuring transient accommodations implement proactive measures to discourage criminal activity and protect both guests and the surrounding community.

As part of the licensing process, each property is assigned one of three levels. These levels reflect any additional requirements needed to address public safety concerns, minimize nuisances, and deter crime. Classifications are determined annually based on qualifying calls for service from the previous year.

License Level Criteria:

- **Level I:** 0–9 annual qualifying calls for service; 0 qualifying felony complaints
- **Level II:** 10–19 annual qualifying calls for service; 1 qualifying felony complaint
- **Level III:** 20 or more annual qualifying calls for service; 2 or more qualifying felony complaints

Transient accommodation licenses are valid from May 1 through April 30 each year and are reviewed annually for compliance and classification updates.

Hazeltine National Golf Club

Hazeltine's facility was new last year. The history of levels for this facility is as follows:

- 2025—Level I
- 2026—Level I

CITY COUNCIL ACTION REQUESTED

Motion to approve the 2026-2027 transient accommodation license at a Level I effective May 1, 2026, through April 30, 2027, for Hazeltine National Golf Club.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Transient Accommodation Renewal – Super 8

Prepared By: Denise Beebe, Senior Clerk

Background

In 2018, Council adopted an ordinance requiring all hotel and motel operations—referred to as transient accommodations—to obtain a license. This ordinance was later amended in 2021 to further strengthen its effectiveness.

The purpose of the ordinance is to promote public safety by ensuring transient accommodations implement proactive measures to discourage criminal activity and protect both guests and the surrounding community.

As part of the licensing process, each property is assigned one of three levels. These levels reflect any additional requirements needed to address public safety concerns, minimize nuisances, and deter crime. Classifications are determined annually based on qualifying calls for service from the previous year.

License Level Criteria:

- **Level I:** 0–9 annual qualifying calls for service; 0 qualifying felony complaints
- **Level II:** 10–19 annual qualifying calls for service; 1 qualifying felony complaint
- **Level III:** 20 or more annual qualifying calls for service; 2 or more qualifying felony complaints

Transient accommodation licenses are valid from May 1 through April 30 each year and are reviewed annually for compliance and classification updates.

Prime Hotels Inc. took over the establishment in 2025. The history of levels for this facility is as follows:

- 2025—Level I
- 2026—Level II

CITY COUNCIL ACTION REQUESTED

Motion to approve the 2026-2027 transient accommodation license at a Level II effective May 1, 2026, through April 30, 2027, for Prime Hotels Inc. DBA Suber 8.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Transient Accommodation Renewal – TownSquare Place

Prepared By: Denise Beebe, Senior Clerk

Background

In 2018, Council adopted an ordinance requiring all hotel and motel operations—referred to as transient accommodations—to obtain a license. This ordinance was later amended in 2021 to further strengthen its effectiveness.

The purpose of the ordinance is to promote public safety by ensuring transient accommodations implement proactive measures to discourage criminal activity and protect both guests and the surrounding community.

As part of the licensing process, each property is assigned one of three levels. These levels reflect any additional requirements needed to address public safety concerns, minimize nuisances, and deter crime. Classifications are determined annually based on qualifying calls for service from the previous year.

License Level Criteria:

- **Level I:** 0–9 annual qualifying calls for service; 0 qualifying felony complaints
- **Level II:** 10–19 annual qualifying calls for service; 1 qualifying felony complaint
- **Level III:** 20 or more annual qualifying calls for service; 2 or more qualifying felony complaints

Transient accommodation licenses are valid from May 1 through April 30 each year and are reviewed annually for compliance and classification updates.

TownSquare Place

The hotel where the existing TownSquare Place has held a transient accommodation since inception. The history of levels for this facility is as follows:

- 2019—Level I
- 2020—Level I
- 2021—Level I
- 2022—Level II
- 2023—Level III
- 2024—Level III
- 2025—Level III

- 2026—Level I

In the City Code, Level II and Level III licensees have additional requirements which must be met to help address public safety concerns. Since 2023, after the Level III license was issued, the Chaska Police Department and hotel management have had continued discussions and check ins regarding the additional requirements to be put into place as well as the ongoing concerns at the facility.

Earlier this year, qualifying calls were reviewed by the Chaska Police Department. Based upon that review, TownSquare Place would be classified at Level I allowing them to be eligible for a license without needing to comply with any special requirements beyond complying with any conditions the City Council may impose on the license.

CITY COUNCIL ACTION REQUESTED

Motion to approve the 2026-2027 transient accommodation license at a Level I for TownSquare Place effective May 1, 2026, through April 30, 2027, for Chaska Lodging Management LLC DBA TownSquare Place.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Temporary On-Sale Intoxicating License for Chaska Lions Club

Prepared By: Denise Beebe, Senior Clerk

The Chaska Lions Club has made application for a 3-day Temporary On-Sale Intoxicating License which will allow them to serve wine and strong beer at Chaska River City Days July 24th – 26th.

City Council approval is required for the application.

Applicant has provided all required documentation and paid the appropriate fee of $150 ($50/each day of the event).

Staff recommends approval.

CITY COUNCIL ACTION REQUESTED

Motion to approve Temporary On-Sale Intoxicating License TW 26.03 for the Chaska Lions Club, that allows them to serve intoxicating beverages at Chaska City River Days, on July 24th – 26th, 2026.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Tobacco License Application –
The Excelsior Vintage DBA River Bend Cellars & Spirits

Prepared By: Denise Beebe, Senior Clerk

Greg Varner, of Brooklyn Park, Minnesota, has submitted an application for a license to sell tobacco-related products, primarily cigars, at a new business location in Chaska. The business, to be known as "River Bend Cellars & Spirits," will be located at 3115 Chaska Blvd., the former site of Dolce Vita Wine Shop.

Mr. Varner will be leasing the facility and has secured rights to the premises beginning July 1, 2026.

All required documentation has been submitted, applicable fee paid, and the proposed use is consistent with current zoning regulations for this location.

CITY COUNCIL ACTION REQUESTED
Motion to approve license to sell tobacco-related products for River Bend Cellars & Spirits, located at 3115 Chaska Blvd., Chaska.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
04-20-2026

Subject: **On-Sale Liquor at Community Event – Schram Haus Brewery – Waconia, MN**

Prepared By: Denise Beebe – Senior Clerk

The Schram Haus Brewery of 8785 Airoport Rd., Waconia MN 55387 has made application for an On-Sale Liquor Permit at a Community Event for Chaska Fire and Ice and Bonspiel Festival located at Chaska Firemen's Park, 3210 Chestnut Blvd. This will allow patrons to purchase alcohol at their booth during this Community Event on July 10th and 11th, 2026.

All required paperwork is on file. Staff recommends approval of the license.

CITY COUNCIL ACTION REQUESTED

Motion to approve On-Sale Intoxicating License at a Community Event, Lic# OSCF26.01, for Schram Haus Brewery, 8785 Airport Rd, Waconia, MN for Chaska Fire and Ice and Bonspiel Festival effective July 10th & 11th, 2026.

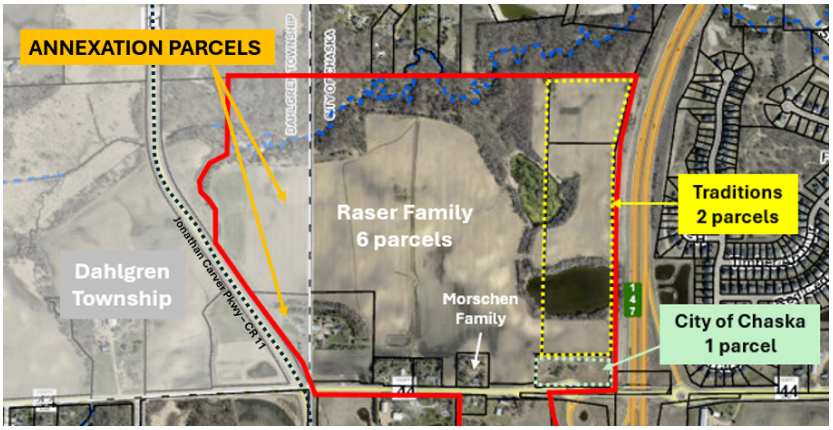
REQUEST FOR ACTION
CHASKA CITY COUNCIL
04/20/2026

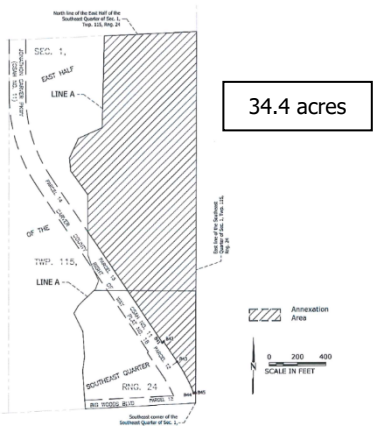
Subject: **Annexation into Chaska of a portion of the Raser property currently in Dahlgren Township**

Prepared By: Elizabeth Hanson

In February 2026, the Concept Plan for Big Woods Business Park (BWBP) was approved. The development encompasses approximately 338 acres and spreads across 16 parcels of land owned by multiple property owners, including the Raser family. The Raser family owns 6 parcels; 2 are in Dahlgren Township. It was required as a condition of approval of the concept plan to annex the 2 Dahlgren Township parcels into Chaska.

The 2 Raser parcels in Dahlgren Township total approximately 42 acres. It should be noted that both parcels are non-contiguous parcels split by Jonathan Carver Parkway (CR11). 34.4 acres of the parcels are situated east of Jonathan Carver Parkway; the remainder encompasses approximately 7.5 acres west of the road. *Only the east 34.4 acres will be annexed*.





The Dahlgren Township Board met on Monday, September 8, 2025 and approved the Joint Resolution and annexation (Township Resolution 117.2). The City of Chaska's City Council also met on September 8th and approved the Joint Resolution (Res. No. 2025-52). The Joint Resolution designated certain area in need of orderly annexation and provided an agreement on the procedure for future annexation. The Joint Resolution also provides that the City may initiate annexation of the Annexation Area by resolution filed with the Office of Administrative Hearings (OAH). Tonight, the City of Chaska is approving the annexation resolution, which will initiate the Municipal Boundary Adjustment (MBA) procedure with the State (OAH).

CITY COUNCIL ACTION REQUESTED

Adopt Resolution No. 2026-28, approving the annexation of the Raser property into Chaska from Dahlgren Township.

CITY OF CHASKA
CARVER COUNTY, MINNESOTA

RESOLUTION

DATE: 4/20/2026 **RESOLUTION NO.:** 2026-28

MOTION BY: COUNCILMEMBER **SECOND BY:** COUNCILMEMBER

A RESOLUTION TO PROCEED WITH ANNEXATION OF CERTAIN PROPERTY FROM DAHLGREN TOWNSHIP PURSUANT TO JOINT RESOLUTION WITH DAHLGREN TOWNSHIP

WHEREAS, the City of Chaska (the **"City"**) and Dahlgren Township (the **"Township"**) are party to a joint resolution, the City's Resolution 2025-52 and the Township's Resolution 117.25 (the **"Joint Resolution"**), which was filed with the Minnesota Office of Administrative Hearings and assigned MBAU Docket No. OA-1929; and

WHEREAS, the Joint Resolution designated certain area (the **"Annexation Area"**) in need of orderly annexation and provided an agreement on the procedure for future annexation; and

WHEREAS, the Joint Resolution provides that the City may initiate annexation of the Annexation Area by resolution filed with the Office of Administrative Hearings; and

WHEREAS, the City has received notice from the owners and developer of the Annexation Area that they are seeking annexation at this time; and

WHEREAS, the City has received a signed receipt in the form required by the Joint Resolution demonstrating that the tax reimbursement due to the Township for the annexation has been paid; and

WHEREAS, the Annexation Area is about to become urban or suburban in character, is in need of immediate annexation, and the City is able to begin providing municipal services, including utility service, within a reasonable period of time; and

WHEREAS, annexation is necessary to facilitate impending development of the Annexation Area

NOW, THEREFORE, pursuant to Minnesota Statutes §414.0325, be it **RESOLVED** by the City Council of the City of Chaska as follows:

1. The City petitions for immediate annexation of the entire area that was designated for orderly annexation in the Joint Resolution.
2. City Staff and the City Attorney are authorized to file this resolution with the Office of Administrative Hearings to initiate annexation of the Annexation Area.

Passed and adopted by the City Council of the City of Chaska this 20th day of April, 2026.

Presiding Officer

_____

Taylor Hubbard, Mayor

ATTEST: _____

Denise Beebe, City Clerk

M/_____	Benesh	_____
	Grau	_____
S/_____	Hatfield	_____
	Hubbard	_____
	Sheveland	_____

JOINT RESOLUTION OF THE CITY OF CHASKA AND THE TOWNSHIP OF DAHLGREN PURSUANT TO MINNESOTA STATUTES §414.0325, DESIGNATING AN UNINCORPORATED AREA IN NEED OF ORDERLY ANNEXATION AND CONFERRING JURISDICTION OF THE AREA ON THE CHIEF ADMINISTRATOR LAW JUDGE OF THE MINNESOTA STATE OFFICE OF ADMINISTRATIVE HEARINGS.

City of Chaska Resolution No. 2025-52

Township of Dahlgren Resolution No: 117.25

TO: **Chief Administrative Law Judge**
State Office of Administrative Hearings
Municipal Boundary Adjustments Unit
P.O. Box 64620
St. Paul, MN 55164-0620

WHEREAS, the City of Chaska (the "City") and the Township of Dahlgren (the "Township") (the City and the Township are sometimes together the "Parties") desire to enter into this Joint Resolution for Orderly Annexation to designate an area of the Township in need of orderly and immediate annexation for the purpose of bringing such area into the city limits; and

WHEREAS, a notice of the City and Township's intent to enter into this agreement was published in the Patriot newspaper on August 21, 2025 pursuant to MN Stat. § 414.0325 subd. 1b; and

WHEREAS, the area to designated is approximately 34.40 acres and adjoins the City, is about to become urban or suburban in character, and the City is capable of providing services required by the area within a reasonable time; and

WHEREAS, it is deemed appropriate and in the best interests of both the City and the Township that said area be designated as in need of orderly annexation.

NOW, THEREFORE, pursuant to Minnesota Statutes § 414.0325, be it **JOINTLY RESOLVED** and agreed by the City Council of the City of Chaska and the Board of Supervisors of the Township of Dahlgren, Carver County, Minnesota, as follows:

1. The area subject to this Joint Resolution and designated for orderly annexation is legally described on attached **Exhibit A** and depicted with hatching on the map attached as **Exhibit B** (the "Land").

2. The orderly annexation area consists of approximately 34.40 acres, the population of the area is 0, and the land use type is agricultural.

3. The area is in need of orderly annexation and the designation is for the purpose of orderly administration of development in an urban or suburban character, for conducting and administering environmental review relative to impending development of the Land, and for providing municipal utility services to the Land upon annexation.

4. This Joint Resolution confers jurisdiction on the chief administrative law judge over the orderly annexation area and over the various provisions of this Joint Resolution.

5. This Joint Resolution provides for the conditions of annexation. No alteration of the stated boundaries are appropriate and no consideration by the chief administrative law judge is necessary. The chief administrative law judge may review and comment, but shall, within 30 days, order the annexation in accordance with the terms of this resolution.

6. Subsequent to the filing of this Joint Resolution designating the area for orderly annexation, a petition for annexation may be initiated in the future upon a resolution by the City of Chaska filed with the Office of Administrative Hearings, Municipal Boundary Adjustment Unit, or such other agency as might be responsible for processing annexation proceedings at the time of filing. To allow the Township to be reimbursed for the permanent loss of taxable property from Township tax rolls for property annexed pursuant to the terms of this Agreement, the City agrees that it will not initiate annexation or forward a resolution for annexation of any portion of the property legally described on **Exhibit A** to OAH, or its successor agency, until such time as the Township provides the City a receipt, in substantially the form of the attached **Exhibit C**, signed by the Township acknowledging payment pursuant to Minnesota Statutes §414.036, of tax reimbursement at a rate of $700 per acre of area annexed and confirming that there are no special assessments assigned by the Township to the Land and no debt incurred by the Township prior to the annexation and attributable to the Land needing to be reimbursed.

7. The City does not assume any liability or responsibility for the payment of any obligations issued to finance public improvements constructed by the Township or for which the Township levied special assessments.

8. The City shall henceforward have jurisdiction for planning, zoning, and subdivision authority over the area designated for orderly annexation by this resolution, and all City zoning and subdivision ordinances and comprehensive plan shall apply to the property within the orderly annexation area. The City shall further be the Responsible Governmental Unit ("RGU") for the purposes of administering environmental review procedures under Minnesota Rules chapter 4410 and City and the Township both agree that the City is the appropriate entity for conducting such reviews. The City and Township by their agreement to this Joint Resolution jointly request Carver County to recognize the City's jurisdiction covered by this paragraph, and the City may send a copy of this Joint

Resolution to Carver County or other applicable regulatory agency for the purpose of establishing that jurisdiction in connection with any environmental review.

For the purposes of any environmental review in the annexation area governed under Minnesota Rules chapter 4410 or any successor rule or statutory regime:

(a) The City shall be responsible for the preparation, publication, distribution, and decision-making of the environmental review.

(b) The Township shall be given the opportunity to review and comment on draft orders and scoping documents prior to publication in the EQB.

(c) The Township shall be given the opportunity to review and comment on draft AUAR and mitigation plans.

(d) The Parties recognize and agree that in preparing, publishing, distributing, and approving the environmental reviews, time is of the essence. The City agrees to provide the Township the draft documents for the Township's review and the Township agrees to provide written comments electronically to the City in a timely manner, and no later than fifteen (15) days following electronic transmission of the environmental review documents to the Township, to the following address: clerk@dahlgrentownship.com

(e) The Parties acknowledge that each Party is solely responsible for payment of all wages, benefits, taxes, and insurance on behalf of its employees or agents relating to planning and environmental review relating to the Land. It is expressly understood that neither Party can compel the other to perform work, nor shall one Party be obligated to reimburse the other, without mutual consent. Nothing contained in this Agreement can or shall be interpreted as creating an employee relationship between the Parties and no employee of either party shall be considered an employee of the other party.

9. That for purposes of real estate taxation, if the annexation becomes effective on or before August 1 of a levy year, the City of Chaska may levy on the annexed area beginning with the same levy year. If the annexation becomes effective after August 1 of a levy year, Dahlgren Township may continue to levy on the annexed area for that levy year, and the City of Chaska may not levy on the annexation area until the following levy year.

10. To the extent, if any, that the annexation area contains streets or roadways, the City shall be solely responsible for any maintenance or improvements after the annexation has been ordered.

11. If the Minnesota Department of Transportation or the Minnesota Office of Administrative Hearings/Municipal Boundary Adjustments requests technical corrections to the legal description attached as **Exhibit A** or the map attached as **Exhibit B**, then: i) City staff may make the requested corrections and attach revised exhibits to this Joint Resolution without further action of the City or Township; and ii) the Joint Resolution, with corrected exhibits, shall remain effective, valid, and enforceable. The City shall provide the Township with a copy of all correspondence with OAH and any amendments or corrections to this Joint Resolution.

12. This Joint Resolution is effective upon approval and adoption by both the City Council of the City of Chaska and the Board of Supervisors of the Township of Dahlgren. If no petition for annexation is initiated pursuant to section 6, above, before three calendar years have elapsed from the date of this Joint Resolution, then it shall terminate cease to have effect without any further action of the Parties.

13. This Joint Resolution may be executed in counterparts, each of which shall be considered an original but which, taken together, shall constitute the full binding agreement of the City and the Township.

14. If any portion, section, subsection, sentence, clause, paragraph, or phrase of this Joint Resolution is for any reason held invalid by a Court of competent jurisdiction, such decision shall not affect the validity of the remaining portion of this Joint Resolution for Orderly Annexation.

15. All data collected, created, received, maintained, or disseminated for any purpose by the Parties because of this Joint Resolution t is governed by the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as amended, the Minnesota rules implementing such act now in force or as amended as well as federal regulations on data privacy.

16. This Joint Resolution is between the Township and the City as the only Parties and no provision of this Agreement shall in anyway inure to the benefit of any third person (including the public at large and any property owner, applicant, tenant, or resident within the Land) so as to constitute any such person as a third party beneficiary of the Agreement or of anyone or more of the terms hereof, or otherwise give rise to any cause of action in any person not a party hereto.

17. If there is a disagreement as to the interpretation or implementation of the Joint Resolution, the parties shall implement the following dispute resolution procedures in the sequence provided:

    A. Negotiation: Representatives of the parties will meet a minimum of one (1) time at a mutually convenient time and place to attempt to resolve the dispute through negotiation.

B. Mediation: If negotiation is not successful, the parties shall participate in a minimum of one (1) mediation session with a mutually agreed upon mediator to resolve the dispute.

C. Binding Arbitration/Adjudication: If mediation is not successful, the parties may agree to submit their respective grievances to binding arbitration or may seek relief through initiation of an action in a court of competent jurisdiction, which may include, but shall not be limited to specific performance to compel the performance as outlined in this Joint Resolution. In addition to the remedies afforded to the parties through law and equity, the Court shall award reasonable attorney fees, costs and expenses to a non-breaching party if the other party is found to have violated of the terms of this Joint Resolution.

Passed and adopted by the **Board of Supervisors of the Township of Dahlgren** this 8 day of September, 2025.

Jeff Thompson, Chairman

ATTEST: _____
Mary Olson, Clerk

Passed and adopted by the **City Council of the City of Chaska** this 8th day of September, 2025.

Taylor Hubbard, Mayor

ATTEST: _____
Denise Beebe, City Clerk

EXHIBIT A

Property Description

That Part of the East Half of the Southeast Quarter of Section 1, Township 115, Range 24, Carver County, Minnesota, that lies easterly of a line hereinafter referred to as 'Line A' and said 'Line A' described as follows:

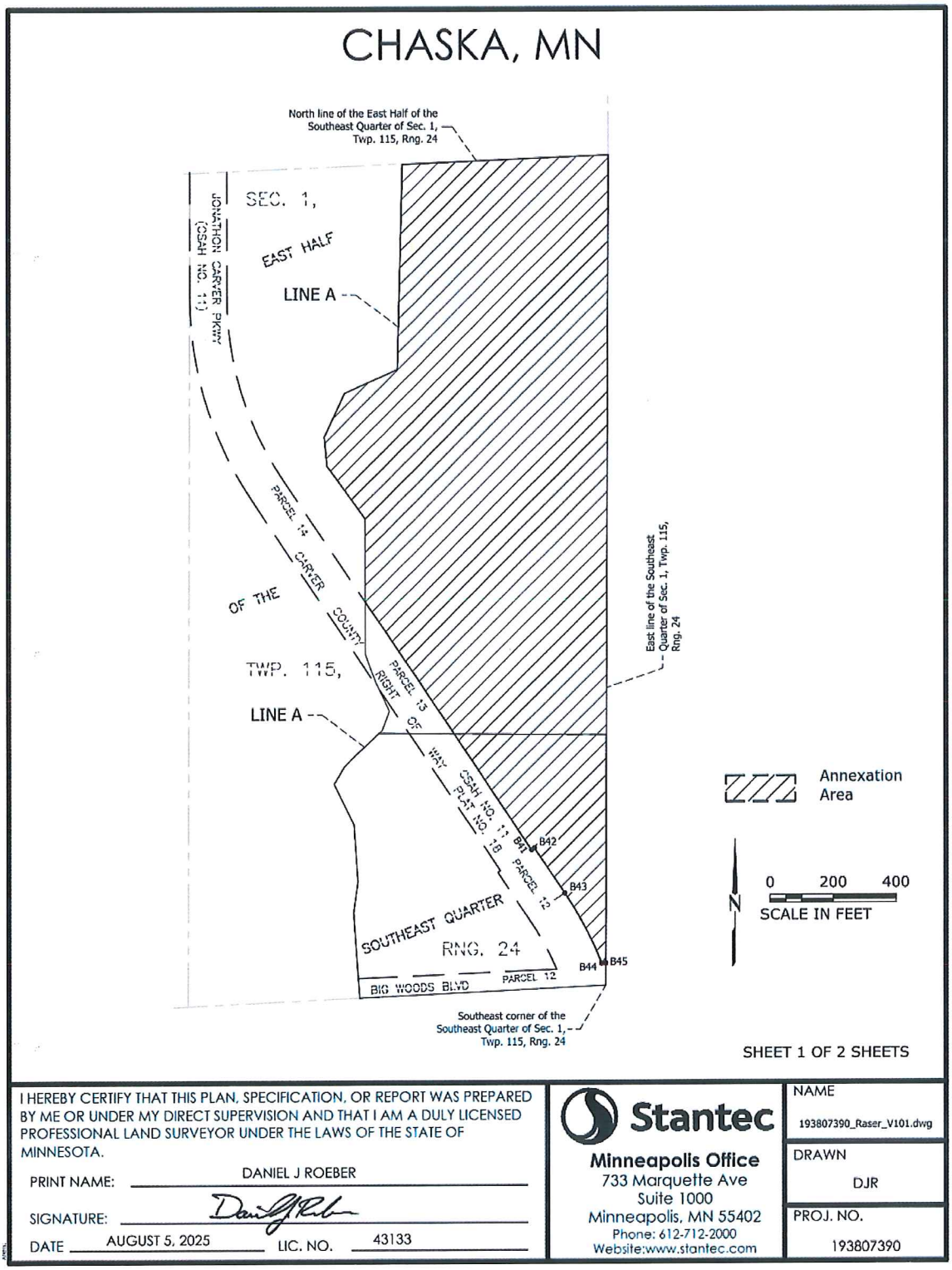
Commencing at the southeast corner of said East Half of the Southeast Quarter; thence on an assumed bearing of South 87 degrees 11 minutes 55 seconds West along the South line of said East Half of the Southeast Quarter a distance of 788.70 feet to the point of beginning of the line to be described; thence North 04 degrees 00 minutes 00 seconds West a distance 272.58 feet; thence North 08 degrees 00 minutes 00 seconds East, a distance of 99.00 feet; thence North 04 degrees 00 minutes 00 seconds West, a distance of 182.82 feet; thence North 26 degrees 00 minutes 00 seconds West, a distance of 145.20 feet; thence North 31 degrees 00 minutes 00 seconds East, a distance of 66.00 feet; thence North 46 degrees 00 minutes 00 seconds East, a distance of 165.00 feet; thence North 21 degrees 00 minutes 00 seconds East, a distance of 66.00 feet; thence North 25 degrees 00 minutes 00 seconds West, a distance of 99.00 feet; thence North 20 degrees 00 minutes 00 seconds West, a distance of 99.00 feet; thence North 00 degrees 00 minutes 00 seconds East, a distance of 432.96 feet; thence North 36 degrees 00 minutes 00 seconds West, a distanced of 209.22 feet; thence North 05 degrees 00 minutes 00 seconds West, a distance of 92.40 feet; thence North 25 degrees 00 minute 00 seconds East, a distance of 153.12 feet; thence North 66 degrees 00 minutes 00 seconds East, a distance of 184.80 feet; thence North 01 degrees 29 minutes 04 seconds East, a distance of 655.39 feet to the north line of said East Half of the Southeast Quarter and said line there terminating.

AND lying northerly and northeasterly of the following described line:

Commencing at said southeast corner of the East Half of the Southeast Quarter; thence North 00 degrees 13 minutes 09 seconds East assumed bearing along the east line of said East Half of the Southeast Quarter, a distance of 71.63 feet to the intersection of said east line of the Southeast Quarter with the most easterly line of Parcel 12, CARVER COUNTY RIGHT OF WAY PLAT NO. 18, according to the recorded plat thereof, said County, said point being denoted as monument B45 on said plat and the point of beginning of the line to be described; thence South 88 degrees 44 minutes 57 seconds West along a line of said Parcel 12, a distance of 13.12 feet to a point denoted on said plat as monument B44; thence northwesterly 253.23 feet along a non-tangential curve concave the southwest having a radius of 1166.00 feet, central angle of 12 degrees 26 minutes 36 seconds and a chord bearing of North 27 degrees 41 minutes 47 seconds West to a point denoted on said plat as monument B43 said line being the northeasterly line of said Parcel 12; thence North 33 degrees 55 minutes 05 seconds West tangent to last described curve and along said northeasterly line of Parcel 12, a distance of 173.70 feet to a point denoted on said plat as monument B42; thence South 56 degrees 04 minutes 55 seconds West along said northeasterly line of Parcel 12, a distance of 10.00 feet to a point denoted on said plat as monument B41; thence North 33 degrees 55 minutes 05 seconds West along said northeasterly line of Parcel 12 and the northeasterly line of Parcel 13 per said plat, 955.59 feet to aforementioned 'Line A' and said line there terminating.

EXHIBIT B

Map



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DANIEL J ROEBER

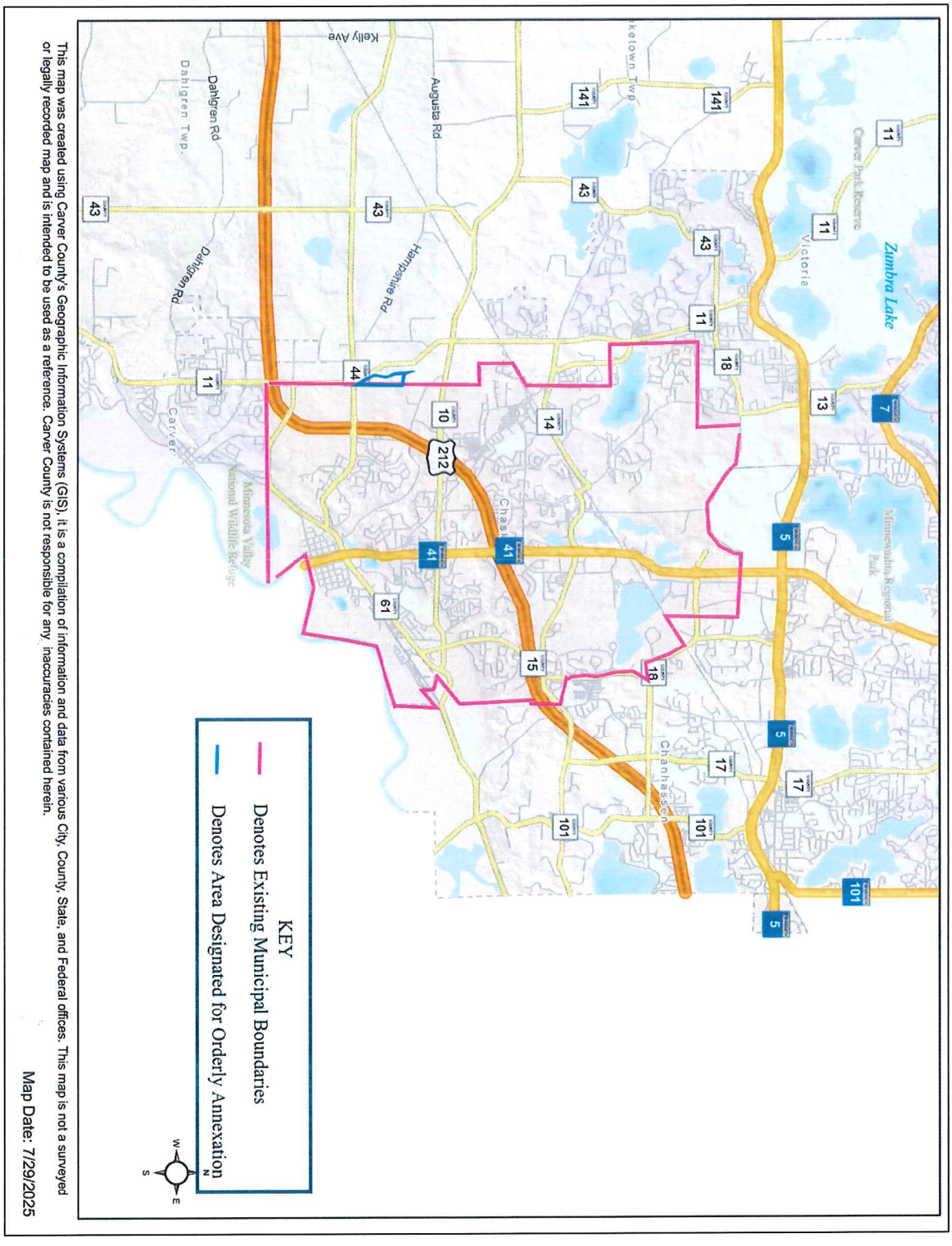
SIGNATURE:

DATE AUGUST 5, 2025 LIC. NO. 43133

Stantec
Minneapolis Office
733 Marquette Ave
Suite 1000
Minneapolis, MN 55402
Phone: 612-712-2000
Website:www.stantec.com

NAME	193807390_Raser_V101.dwg
DRAWN	DJR
PROJ. NO.	193807390

EXHIBIT B-2
EXISTING MUNICIPAL BOUNDARIES



This map was created using Carver County's Geographic Information Systems (GIS). It is a compilation of information and data from various City, County, State, and Federal offices. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Carver County is not responsible for any inaccuracies contained herein.

Map Date: 7/29/2025

EXHIBIT C

Form of Receipt

DAHLGREN TOWNSHIP

RECEIPT FOR REIMBURSEMENT TO TOWNSHIP

FOR ANNEXATION OF TAXABLE PROPERTY

_____, 2025

Pursuant to Minnesota Statutes Section 414.036, the Town of Dahlgren hereby acknowledges the receipt of a single payment of $_____ as reimbursement for all the taxable property being annexed to the City of Chaska as described on Exhibit A and depicted on Exhibit B attached hereto and approves the annexation of such land. There are no special assessments assigned by Dahlgren Township to the annexed property and no debt incurred by the Township prior to the annexation attributable to the property annexed.

Dahlgren Township

_____

_____, Chairman

REQUEST FOR ACTION
CHASKA CITY COUNCIL
04/20/2026

Subject: Resolution 2026-29 approving the final Alternate Urban Areawide Review (AUAR) for Big Woods Business Park

Applicant: City of Chaska

Location: East of Jonathan Carver Parkway (CR11), west of Highway 212, south of West Chaska Creek and north of Chaska Boulevard (CR61) (~338 acres)

Case No.: 2025-20

Synopsis: A Resolution approving the final Alternate Urban Areawide Review (AUAR) for Big Woods Business Park

Prepared By: Elizabeth Hanson

Staff Recommendation: Motion to adopt Resolution 2026-29

As the Responsible Governmental Unit (RGU), the City of Chaska has determined that an Alternative Urban Areawide Review (AUAR) is required for the proposed development of the site east of Jonathan Carver Parkway, west of Highway 212, south of West Chaska Creek and north of Chaska Boulevard. The project is proposed by Scannell Properties.

The concept plan submitted by Scannell Properties and approved by the City Council on February 23, 2026 proposes 14 industrial buildings (totaling 1,915,000sf), 4 commercial buildings (totaling 55,000sf), a city-owned water tower, and a substation on 338 acres of land. Therefore, pursuant to Minnesota Rule 4410.4400, subpart 11A, a Mandatory Environmental Impact Statement (EIS) is required as the industrial project is greater than 450,000 square feet in size.

Minnesota Rule 4410.3600 allows for "alternative reviews" of Environmental Assessment Worksheets (EAW's) and Environmental Impact Statements (EIS's). The regular environmental review process is best suited for distinct projects with environmental impacts that do not overlap. The Alternative Urban Areawide Review (AUAR) process substitutes for any EAW or EIS required for specific qualifying projects, provided they comply with the review assumptions and mitigation measures. AUARs allow projects to be reviewed in multiple scenarios (or alternatives) in the event that a project/site may have different outcomes.

A hybrid of the EAW and EIS review processes, the AUAR uses a standard list of questions adapted from the EAW, providing a level of analysis for typical urban area impacts comparable to an EIS. In accordance with the state mandated process, draft and final documents have been prepared and distributed for review and comment in a manner like an EIS to ensure adequate review. Applicable local and state agencies and the Metropolitan Council have

completed their review and comments have been submitted and addressed through the process.

The notice of availability of the Draft AUAR Order and Scoping Document was published in the Minnesota Environmental Quality Board's EQB Monitor on September 23, 2025 and close on October 23, 2025 as described in Minnesota Rules, part 4410.3610, subpart 5a.

On November 17, 2025, Chaska City Council approved resolution 2025-85 approving the AUAR order and scoping document.

The availability of the Draft AUAR was officially noticed on January 6, 2026, in the EQB Monitor and the City posted the contents of the Draft AUAR on the City's website. Comments on the AUAR were received through February 5, 2026.

The availability of the Final AUAR was officially noticed on March 3, 2026, in the EQB Monitor and the City posted the contents of the Final AUAR on the City's website. A 10 day objection period ended on March 17, 2026. No objections were received.

All comments received during the public comment period are summarized in Appendix G, have been reviewed, and are incorporated into the final AUAR as appropriate.

As required by state statute, staff requests the City Council to approve the Final Alternative Urban Areawide Review for Big Woods Business Park dated March 2026.

CITY COUNCIL ACTION REQUESTED

Motion to adopt Resolution 2026-29, approving the final Alternative Urban Areawide Review (AUAR) for Big Woods Business Park (PC #2025-20).

CITY OF CHASKA
CARVER COUNTY, MINNESOTA

RESOLUTION

DATE 04/20/2026 RESOLUTION NO. 2026-29

MOTION BY COUNCILMEMBER SECOND BY COUNCILMEMBER

Resolution approving the final Alternative Urban Areawide Review (AUAR) for the Big Woods Business Park (BWBP)/PC #2025-20

WHEREAS, the City of Chaska is the Responsible Governmental Unit for the environmental review of the Big Woods Business Park pursuant to Minnesota Rules Part 4410.3610 Subp. 1; and

WHEREAS, Minnesota Rules Chapter 4410.3610 provides for a substitute form of environmental review known as an Alternative Urban Areawide Review (AUAR) process; and

WHEREAS, the City undertook an environmental review process to determine if future redevelopment of the Big Woods Business Park has the potential for significant environmental effects and prepared an AUAR pursuant to state requirements; and

WHEREAS, the availability of the Draft AUAR was officially noticed on January 6, 2026, in the EQB Monitor; and

WHEREAS, the City posted the contents of the Draft AUAR on the City's website; and

WHEREAS, comments on the AUAR were received through February 5, 2026; and

WHEREAS, the availability of the Final AUAR was officially noticed on March 3, 2026, in the EQB Monitor and the City posted the contents of the Final AUAR on the City's website; and

WHEREAS, a 10 day objection period ended on March 17, 2026, and no objections were received; and

WHEREAS, staff has reviewed all comments received during the comment period and incorporated applicable changes into the Final AUAR.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Chaska, Minnesota, hereby approves the March 2026 Final Alternative Urban Areawide Review for Big Woods Business Park.

Passed and adopted by the City Council of the City of Chaska, Minnesota, this 20th day of April, 2026.

_____
Taylor Hubbard, Mayor

Attest:_____
Chaska Deputy Clerk

Big Woods Business Park

FINAL ALTERNATIVE URBAN AREAWIDE REVIEW (AUAR)

MARCH 2026

PREPARED FOR:

City of Chaska

PREPARED BY:

Kimley»Horn

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Final Alternative Urban Areawide Review

This Alternative Urban Areawide Review (AUAR) follows the format of an Environmental Assessment Worksheet (EAW) (December 2022 version). Where the AUAR guidance provided by the Minnesota Environmental Quality Board (EQB) indicates that an AUAR response should differ notably from what is required for an EAW, the guidance is noted in *italics.*

1. PROJECT TITLE

Big Woods Business Park AUAR

2. PROPOSER

Proposer: Scannell Properties #771, LLC
Contact Person: Jake Kurth
Address: 8801 River Crossing Blvd, Suite 300
City, State, ZIP: Indianapolis, IN 46240
Phone: 612-280-4088
Email: jakek@scannellproperties.com

3. RGU

RGU: City of Chaska
Contact Person: Elizabeth Hanson, AICP
Title: City Planner
Address: One City Hall Plaza
City, State, ZIP: Chaska, MN 55318
Phone: 952-448-9200
Email: EHanson@chaskamn.gov

4. REASON FOR PREPARATION

AUAR Guidance: Not applicable to an AUAR.

5. PROJECT LOCATION

County: Carver
City/Township: Chaska
PLS Location (¼, ¼, Section, Township, Range): Township 115N, Range 23W, Sections 6 and 7
Watershed (81 major watershed scale): Minnesota River - Shakopee
Tax Parcel Numbers: 040010610, 040010600, 306920020, 306920020, 300061130, 040010610, 300061600, 300060520, 300061500, 300061700, 300061300, 300061200, 300070901, 300070500, 300070810, 300070210, 300070200 (note: the study area contains only whole parcels)
At a minimum, attach each of the following to the AUAR:

- **US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries** (See Figure 1)
- **Map depicting the boundaries of the AUAR and any subdistricts used in the AUAR analysis** (see Figure 2)
- List of data sources, models, and other resources (from the Item-by-Item Guidance: Climate Adaptation and Resilience or other) used for information about current Minnesota climate trends and how climate change is anticipated to affect the general location of the project during the life of the project (as detailed below in Item 7)
- **Cover type map as required for Item 8** (See Figure 6)
- **Land use and planning and zoning maps as required in conjunction with Item 10** (See Figure 8, Figure 9, and Figure 10)

Figure 1: USGS Map

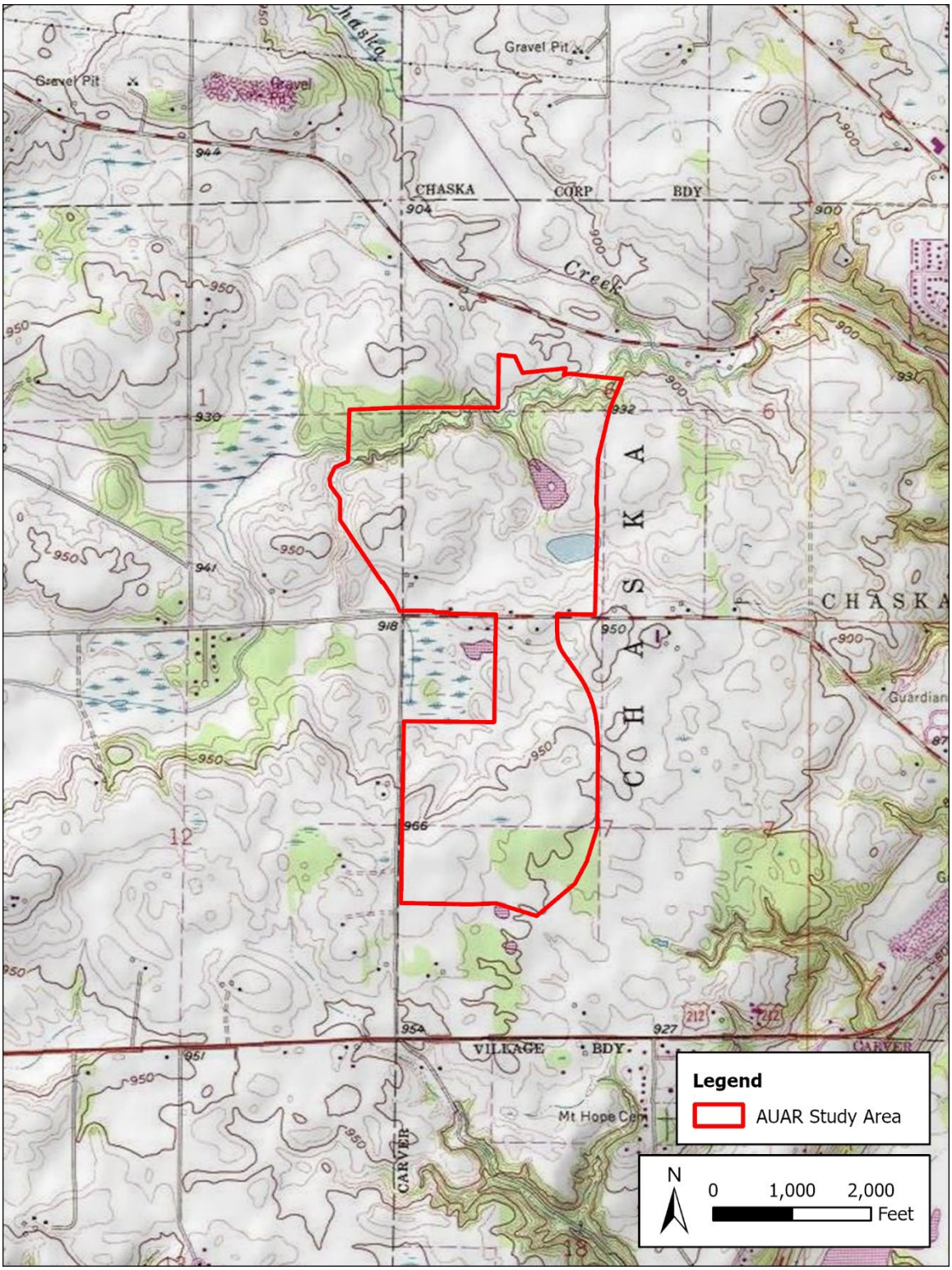
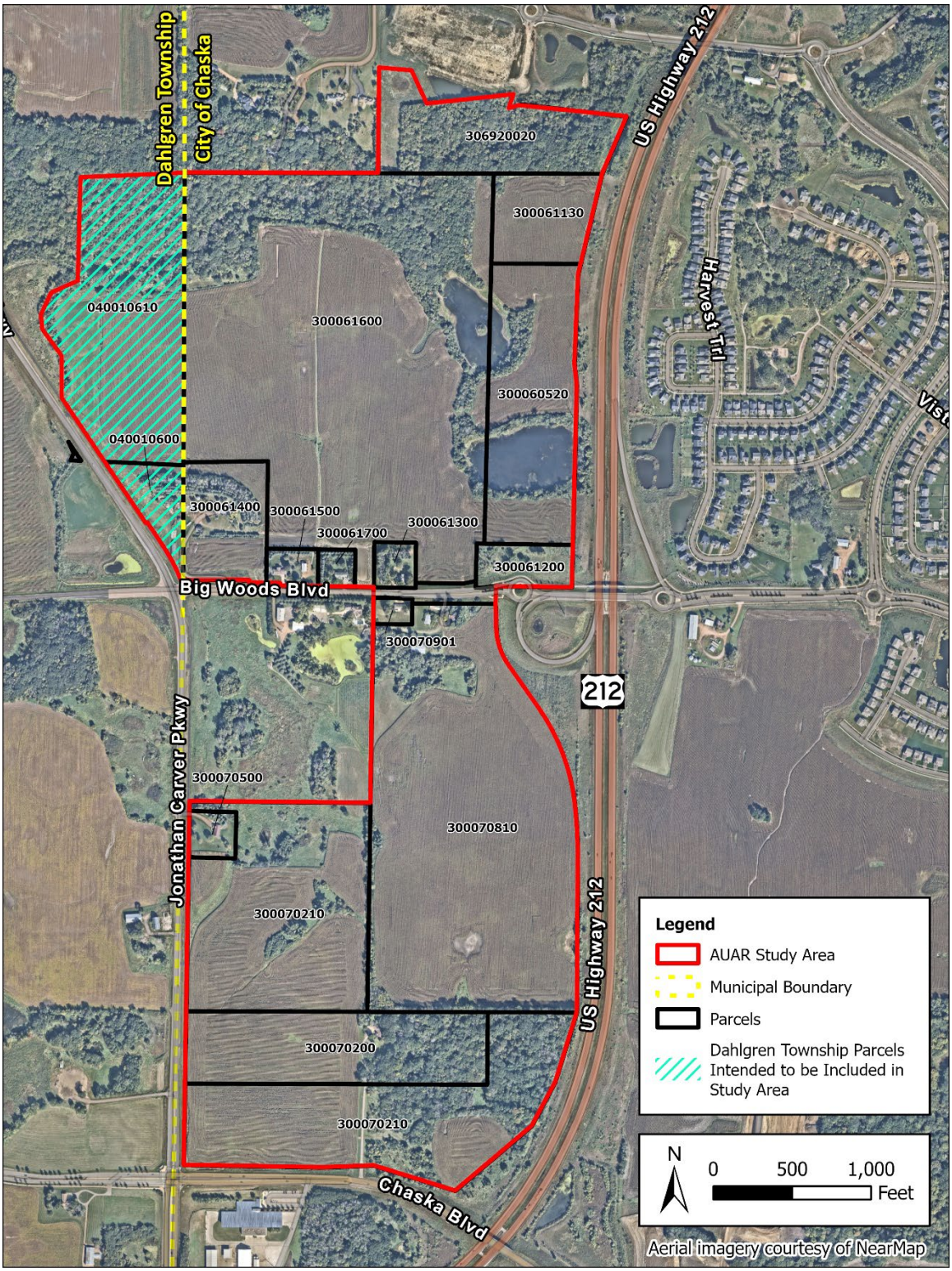


Figure 2: Study Area



6. PROJECT DESCRIPTION

AUAR Guidance: Instead of the information called for on the EAW form, the description section of an AUAR should include the following elements for each major development scenario included:

- *Anticipated types and intensity (density) of residential and commercial/warehouse/light industrial development throughout the AUAR area.*
- *Infrastructure planned to serve development (roads, sewers, water, stormwater system, etc.). Roadways intended primarily to serve as adjoining land uses within an AUAR area are normally expected to be reviewed as part of an AUAR. More "arterial" types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are included, a more intensive level of review, generally including an analysis of alternative routes, is necessary.*
- *Information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.*

The AUAR study area encompasses an area totaling approximately 359 acres on 17 parcels in the City of Chaska and Dahlgren Township, Carver County, Minnesota (shown in Figure 2). The study area is generally bounded to the north by Creek Road, to the west by Jonathan Carver Parkway, to the south by Chaska Boulevard, and to the east by U.S. Highway 212 (US 212). Two parcels within the AUAR study area are located within Dahlgren Township (shown in Figure 2). These parcels are intended to be annexed into the City of Chaska. Dahlgren Township and the City of Chaska adopted an Orderly Annexation Agreement for these parcels on September 8, 2025. The agreement outlines the terms and conditions under which an annexation would take place. It is expected that the annexation will occur when development on those parcels occur.

The study area excludes Parcel 300070400, located southeast of Big Woods Boulevard and Jonathan Carver Parkway. This parcel will remain undeveloped during the initial development of the site and is therefore not studied in the AUAR. The parcel will likely remain undeveloped due to the presence of high-quality wetlands.

Two scenarios are evaluated in the AUAR as outlined in Table 1. Scenario 1 includes multiple buildings for a total of 1.8 million square feet of proposed business park (office/warehouse/distribution center type uses) development and 200,000 square feet of proposed commercial development (see Figure 3). Scenario 2 includes multiple buildings for a total of 2.7 million square feet of proposed business park (office/warehouse/distribution center type uses) development and 300,000 square feet of proposed commercial development (see Figure 4). Both scenarios are consistent with the Chaska 2040 Comprehensive Plan.

Both scenarios would include a natural buffer area bisecting the study area from north to south. This aligns with the City's desire to see a natural buffer between land uses and is part of Chaska's Greenbelt, an edge of open space or low-density rural residential use along the edge of the City (as

described in Chapter 4 of the Chaska 2040 Comprehensive Plan).[1] Although there are areas within the Chaska Greenbelt guided for Rural Residential, neither scenario intends to incorporate residential use in these areas. The greenbelt areas are intended to serve as a natural buffer, which is consistent with the City's Comprehensive Plan; furthermore, the greenbelt is distinct from planned "open space", which designates an area for potential recreation or public use.

Both scenarios would also include an approximately 4-acre area for a city substation to support future development. New supporting infrastructure associated with the project will include new roadways, water service, sewer service, a substation, and stormwater infrastructure. There is also potential for a new water tower and lift station. Potential locations of future roadway access to the site are shown in Figure 3 and Figure 4 (see "Future Site Access Points").

The intent of the AUAR is to recognize the worst-case potential impacts and identify mitigation measures that may be taken to compensate for those impacts. Preliminary construction work is anticipated to begin as early as summer 2026. The study area will be constructed in phases with the full build out anticipated to occur over 5-15 years.

Table 1: Development Scenario

Component	Scenario 1	Scenario 2
Business Park Building Area (square feet)	1,800,000 square feet	2,700,000 square feet
Commercial Building Area (square feet)	200,000 square feet	300,000 square feet
Rural Residential / Greenbelt	76 acres	76 acres
Open Space (Acres)	39 acres	39 acres
Total (square feet)	2,000,000 square feet	3,000,000 square feet
Total Project Area	359 acres	359 acres

[1] City of Chaska. *2040 Comprehensive Plan*. Available at https://www.chaskamn.gov/DocumentCenter/View/2618/Ch-4-Land-Use-PDF

Figure 3: Development Scenario 1

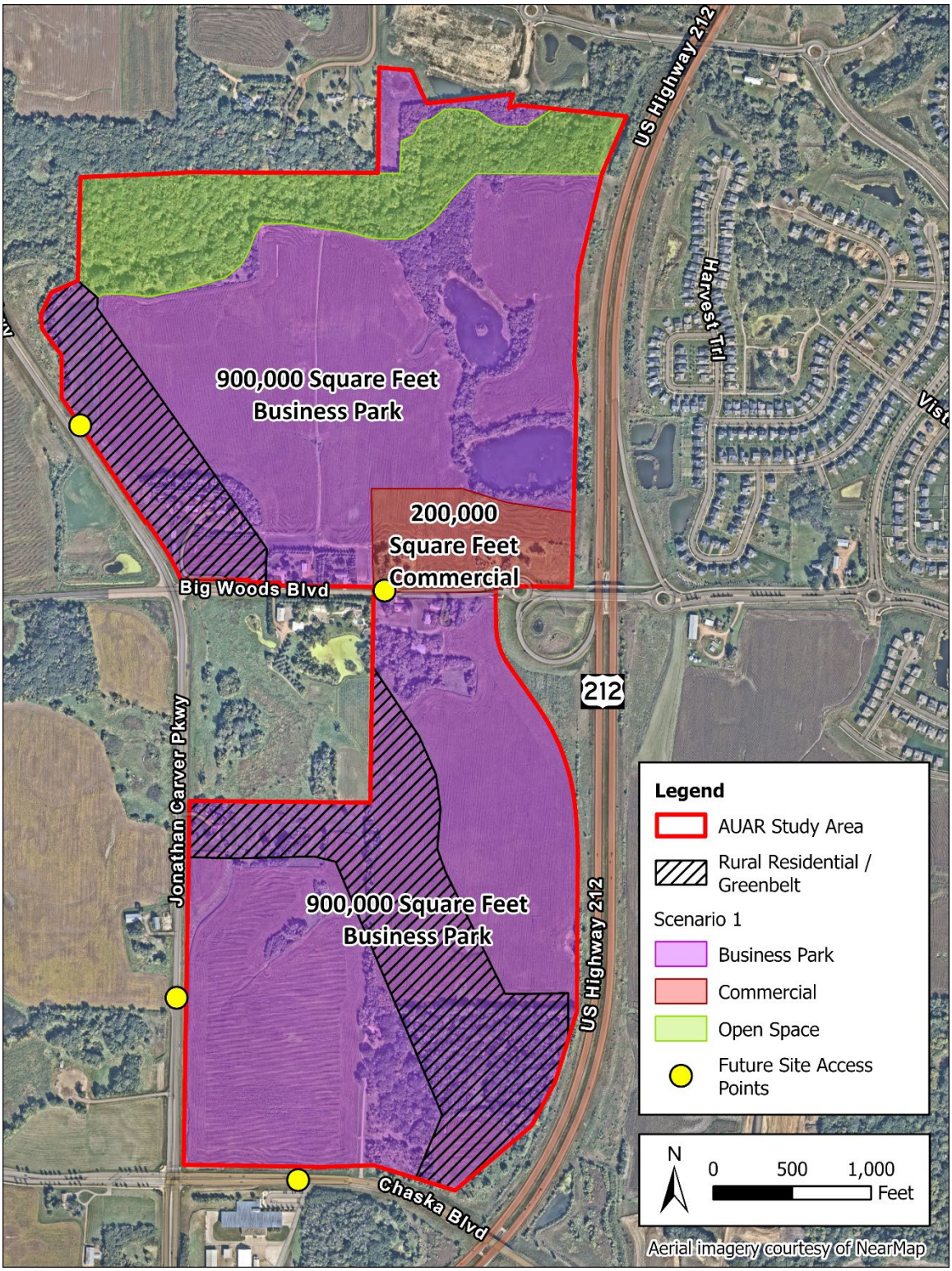
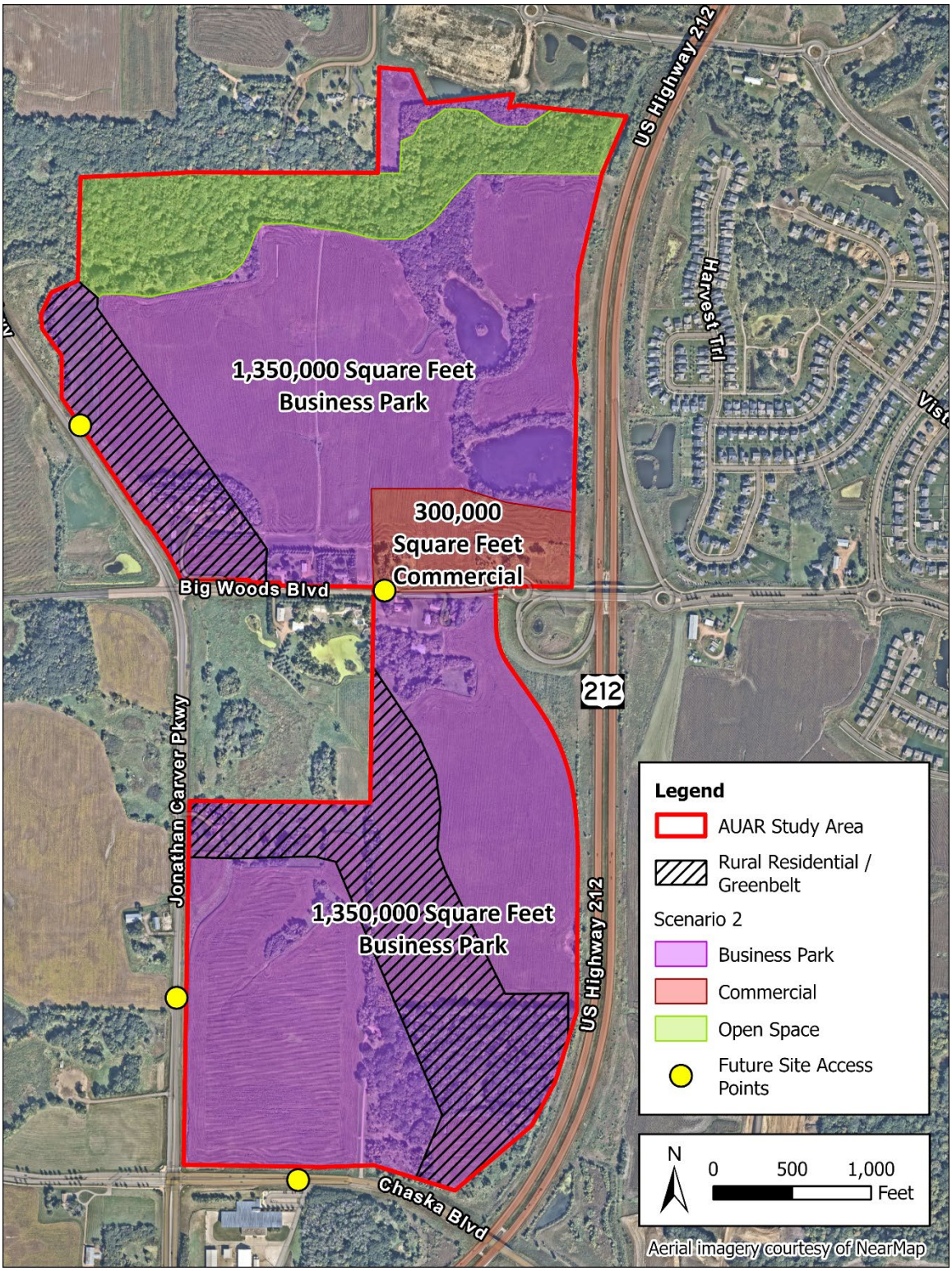


Figure 4: Development Scenario 2



7. CLIMATE ADAPTION AND RESILIENCE

a. Describe the climate trends in the general location of the project (see guidance: Climate Adaptation and Resilience) and how climate change is anticipated to affect that location during the life of the project.

Trends in temperature, precipitation, flood risk, and cooling degree days are described below for the general project location. Some of the climate projections summarized below use shared socioeconomic pathways (SSPs), which are greenhouse gas concentration scenarios used by the Intergovernmental Panel on Climate Change. The SSPs reflect assumptions about how industrialization, fossil fuel dependence, land use, and population density evolve in the future. The assumptions are based on population growth, urbanization, economic growth, technological advances, greenhouse gas and aerosol emissions, energy supply and demand, land-use changes, and more.[2] SSP 245 is an intermediate scenario in which emissions decline after peaking around 2040, and SSP 370 is a high-emission scenario in which emissions continue to rise through the 21st Century.

Temperature

According to the Minnesota Climate Mapping and Analysis Tool (CliMAT), the annual daily average temperature in the study area from 1995 to 2014 was 45.6°F.[3] The annual daily average temperature in the study area is projected to increase to 49.4°F from 2040 to 2059 under an intermediate emissions pathway (SSP 245). In 2080-2099, annual daily average temperature is projected to further increase to 52.4°F and 54.6°F under an intermediate (SSP 245) and high emissions pathway (SSP 370), respectively.

Urban Heat Island

Surfaces and structures such as roads, parking lots, and buildings absorb and re-emit more heat from the sun than natural landscapes. This can significantly raise air temperature and overall extreme heat vulnerability in urban areas where there are dense concentrations of these surfaces. This is referred to as the urban heat island effect. According to the University of Minnesota's Heat Vulnerability Map Tool, the AUAR study area is in an area of high heat vulnerability.[4]

Precipitation

According to the EPA Climate Resilience Evaluation and Awareness Tool (CREAT) Climate Change Scenarios Projection Map, there is a projected 3.0% to 13.9% increase in 100-year storm

[2] University of Minnesota Climate Adaptation Partnership. *Climate modeling: an introductory primer for practitioners*. May 2023. Available at https://climate.umn.edu/sites/climate.umn.edu/files/2023-06/ClimateProjectionPrimer_Compiled_CoverPage.pdf

[3] University of Minnesota. *Minnesota CliMAT*. Available at https://app.climate.umn.edu/?output_type=modelVal&scenario=ssp370_2080-2099&model=ensemble&variable=tmax-degF&time_frame=yearly&aoi=none#intro_pane

[4] University of Minnesota. *Heat Vulnerability in Minnesota*. Available at https://maps.umn.edu/climatehealthtool/heat_app/

intensity by 2035 and a projected 5.8% to 27.0% increase in 100-year storm intensity by 2060 for the AUAR study area.[5]

Localized Flood Risk

In many places, climate change is exacerbating the frequency and intensity of the extreme rainfall events and associated flooding. According to the Metropolitan Council Localized Flood Map Screening Tool,[6] a tool that identifies potential surface flooding locations, the study area is located within Primary, Secondary, Tertiary, and Shallow Flood Impact Zones (FIZ) as shown in Figure 5. Primary, Secondary, and Tertiary FIZ describe the first areas to fill with water during a flood event, with Primary filling first, followed by Secondary and Tertiary. Shallow FIZ are separate low areas generally considered low risk, but this depth may still be a concern for certain types of infrastructure.

Cooling Degree Days

As defined by the National Weather Service, cooling degree days, which are often used as a proxy to estimate cooling needs for buildings, can be examined as a baseline and projected exposure indicator under the RCP 4.5 and RCP 8.5 scenarios (lower emissions and higher emissions, respectively). Cooling degree days are indexed units, not actual days, which roughly describe the demand to heat or cool a building. Cooling degree days accumulate on days warmer than 65°F when cooling is required. For example, if a weather station recorded an average daily temperature of 78°F, cooling degree days for that station would be 13.

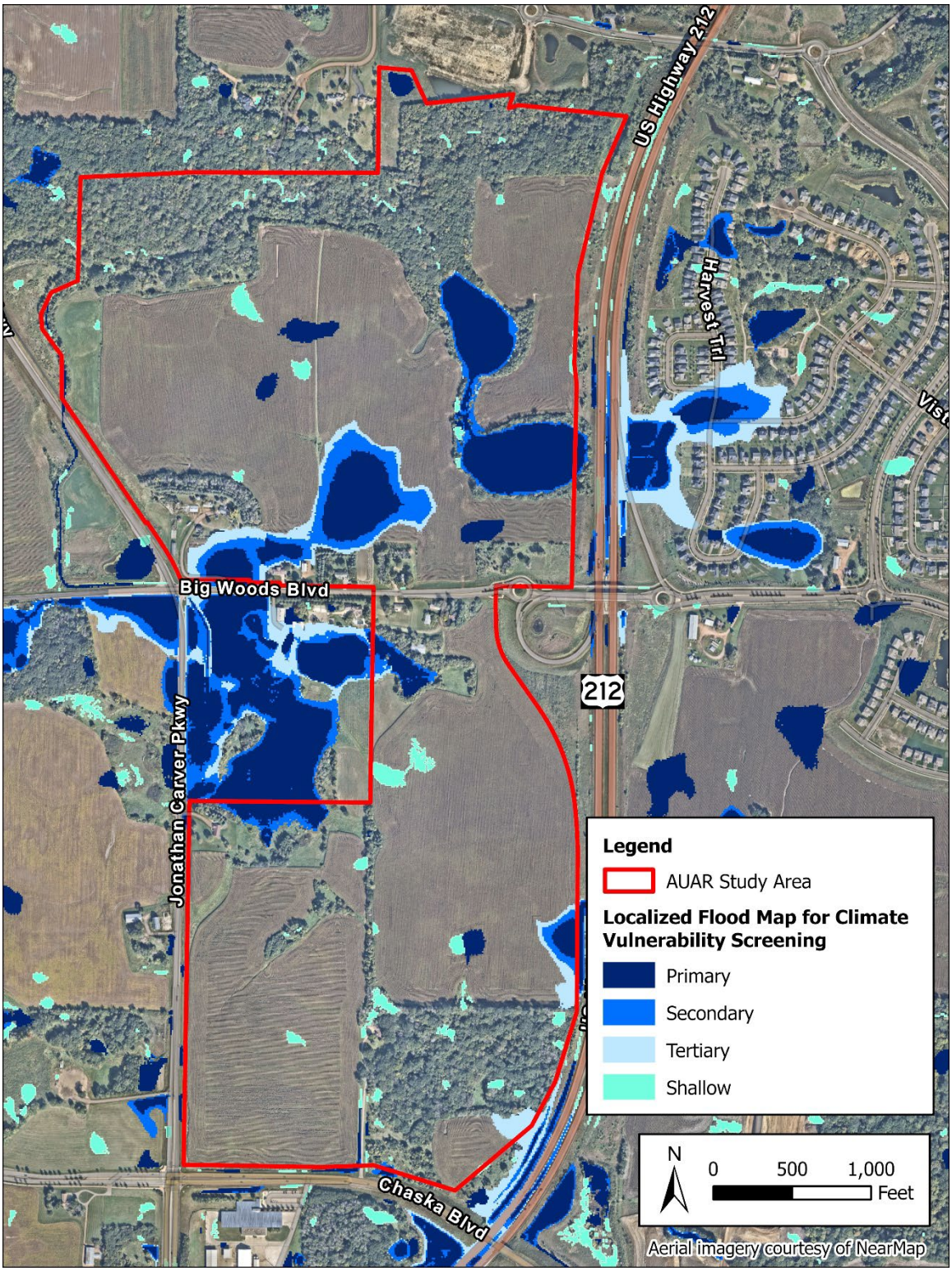
According to Heat Vulnerability in Minnesota,[7] the number of cooling degree days in 2019 for Carver County was 427. The number of cooling days in 2050 for Carver County is projected to be 496 and 650 for RCP 4.5 and 8.5, respectively.

[5] US EPA. *CREAT Climate Change Scenarios Projection Map*. September 2022. Available at https://www.arcgis.com/home/item.html?id=3805293158d54846a29f750d63c6890e

[6] Metropolitan Council. *Localized Flood Map Screening Tool*. Available at https://metrocouncil.org/Communities/Planning/Local-Planning-Assistance/CVA/Tools-Resources.aspx

[7] Minnesota Department of Health and the University of Minnesota. *Heat Vulnerability in Minnesota*. Available at https://maps.umn.edu/climatehealthtool/heat_app/.

Figure 5: Metropolitan Council Localized Flood Map



b. For each resource category in the table below, describe the project's proposed activities and how the project's design will interact with those climate trends. Describe proposed adaptations to address the project effects identified.

Table 2: Interaction of Proposed Activities with Each Climate Trend and Projection Listed in 7a

Resource Category	Climate Trends and Climate Projections	Project Components	Potential Environmental Effects	Adaptation Strategies (Scenario 1 and 2)
Project Design	In the coming decades, the location of the study area is anticipated to experience: • Increased annual temperatures • Increased annual precipitation and more frequent heavy rainfall events	Development of the study area will increase impervious surfaces.	Aspects of building architecture/materials choices and site design may impact urban heat island conditions in the surrounding area, including changing climate zones, temperature trends, and potential for extended heat waves.	• Proposed trees and landscaping will reduce runoff and mitigate heat island effect. • Water-efficient design will be incorporated for landscape vegetation choices, landscape irrigation, appliances, and equipment.

Resource Category	Climate Trends and Climate Projections	Project Components	Potential Environmental Effects	Adaptation Strategies (Scenario 1 and 2)
Land Use	Reduction of tree cover may lead to more intense stormwater runoff, increased urban heat island effect, loss of shade for protection during extreme heat, and potential reduction in air quality.	Development of the study area will convert land use from residential/ agricultural use to business park and commercial uses.	Land use change will increase impervious surfaces within the study area.	• Energy end-use efficient appliances and equipment and energy efficient lighting will be incorporated into building design. • Building shells will be energy efficient and developer will consider the use of solar panels. • Design of the site and stormwater management facilities will be completed to reduce the risk of flooding in the AUAR study area. Bioretention benches, which are paired with ponding areas (discussed further in Item 12), filter stormwater water during rainfall events and will be used to improve water quality and reduce stormwater runoff in the project vicinity.

Resource Category	Climate Trends and Climate Projections	Project Components	Potential Environmental Effects	Adaptation Strategies (Scenario 1 and 2)
Water Resources	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence water resources such as extreme storm events, drought, and groundwater depletion.	Development of the study area may impact nearby water resources. Existing water resources are described further in Item 12.	Water resources in the general project area may become warmer, and increase in volume due to increased temperatures, runoff, and impervious surfaces. There may be more evaporation and water available when it rains, leading to an increase in the flood potential. It is projected that there will be more severe storm events with high, intense rain amounts, which will require drainage systems to be adequately designed and maintained to accommodate for the increase in water volume and rate.	• Developer will use native plants and perennials for landscaping and place adjacent to stormwater features to absorb water therefore reducing the water demand for irrigation and to provide water resource buffers. • Stormwater best management practices (BMPs) shall be designed to meet City of Chaska criteria for rate control and runoff volume reduction and criteria for Minnesota Pollution Control Agency (MPCA) and Carver County Water Management Organization (CCWMO) water quality requirements.

Resource Category	Climate Trends and Climate Projections	Project Components	Potential Environmental Effects	Adaptation Strategies (Scenario 1 and 2)
Contamination /Hazardous Materials/ Wastes	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence the potential environmental effects of the generation/use/storage of hazardous waste and materials.	The proposed development is not anticipated to generate hazardous waste or materials.	Any potential business park uses may require storage of hazardous materials and wastes.	The placement of any potential storage of hazardous materials and wastes would not be in floodplain areas.
Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)	Current Minnesota climate trends and anticipated climate change in the general location of the project may influence the local species and suitable habitat.	Development of the study area will change land use and cover.	Suitable habitat for species may become unsuitable due to land use changes, increased temperature, and increased runoff.	Climate-appropriate native plantings and stormwater BMPs will provide suitable habitat for small mammals, insects, and bird species. Wooded steep slopes and high quality wetlands are protected through city ordinance and policy. The greenbelt policy prioritizes preservation of high value natural resources.

8. COVER TYPES

AUAR Guidance: The following information should be provided:

- *A cover type map, at least at the scale of a USGS topographic map, depicting:*
  - *Wetlands (identified by Circular 39 type)*
  - *Watercourses (rivers, streams, creeks, ditches)*
  - *Lakes (identify public waters status and shoreland management classification)*
  - *Woodlands (break down by classes where possible)*
  - *Grassland (identify native and old field)*
  - *Cropland*
  - *Current development*
- *An overlay map showing anticipated development in relation to the cover types. This map should also depict any "protection areas," existing or proposed, that will preserve sensitive cover types. Separate maps for each major development scenario should be generally provided.*

The AUAR study area has approximately 359 acres of woodland, wetlands/watercourses, grassland, agricultural land, and impervious surface. There are several structures, mainly single-family homes and farmstead buildings, within the study area. Existing cover types within the study area are shown in Figure 6. These cover types were determined by reviewing recent aerial photography and wetland delineation data for wetland boundaries. Existing and proposed cover types for each proposed scenario are described in Table 3.

Green infrastructure systems could include bioretention areas without underdrains, vegetated swales with impermeable check dams, and enhanced stormwater ponds. Infiltration is likely not possible within the study area, however, green stormwater infrastructure with bioretention benches (enhanced ponds) are proposed (see Item 12 for further discussion of infiltration feasibility). The project proposer will use native plants in landscape designs and will maintain existing significant floodplain and wetland complexes as feasible.

Table 3: Existing and Proposed Cover Types

Cover Type	Existing (acres)	Scenario 1 (acres)	Scenario 2 (acres)
Woodland	79.2	64.2	64.2
Grassland	18.4	0	0
Agricultural Land	230.8	0	0
Wetlands	27	20	15
Impervious Surface	3.9	130	200
Lawn/Landscaping	0	125.1	55.1
Green Infrastructure	0	20	25
Total	**359.3**	**359.3**	**359.3**

Table 4: Green Infrastructure

Green Infrastructure	Before (acres)	Scenario 1 (acres)	Scenario 2 (acres)
Green stormwater infrastructure with bioretention benches (enhanced ponds)[8]	0	20	25
Total	**0**	**20**	**25**

Table 5: Trees

Trees	Area (acres)
Area of Mature Trees Removed During Development[9]	19
Area of Trees Proposed to be Planted	4

[8] Based on preliminary stormwater requirement calculations based on estimated impervious surface area.
[9] Tree clearing will be limited as much as feasible to support the proposed development scenarios. Tree clearing will be restricted to the winter months when the northern long-eared bat, tricolored bat, and migratory birds are not likely to be present (November 1 – March 31). If winter tree clearing is not feasible, technical assistance from the U.S. Fish and Wildlife Service will be obtained before any trees or shrubs are removed.

Figure 6: Existing Cover Types

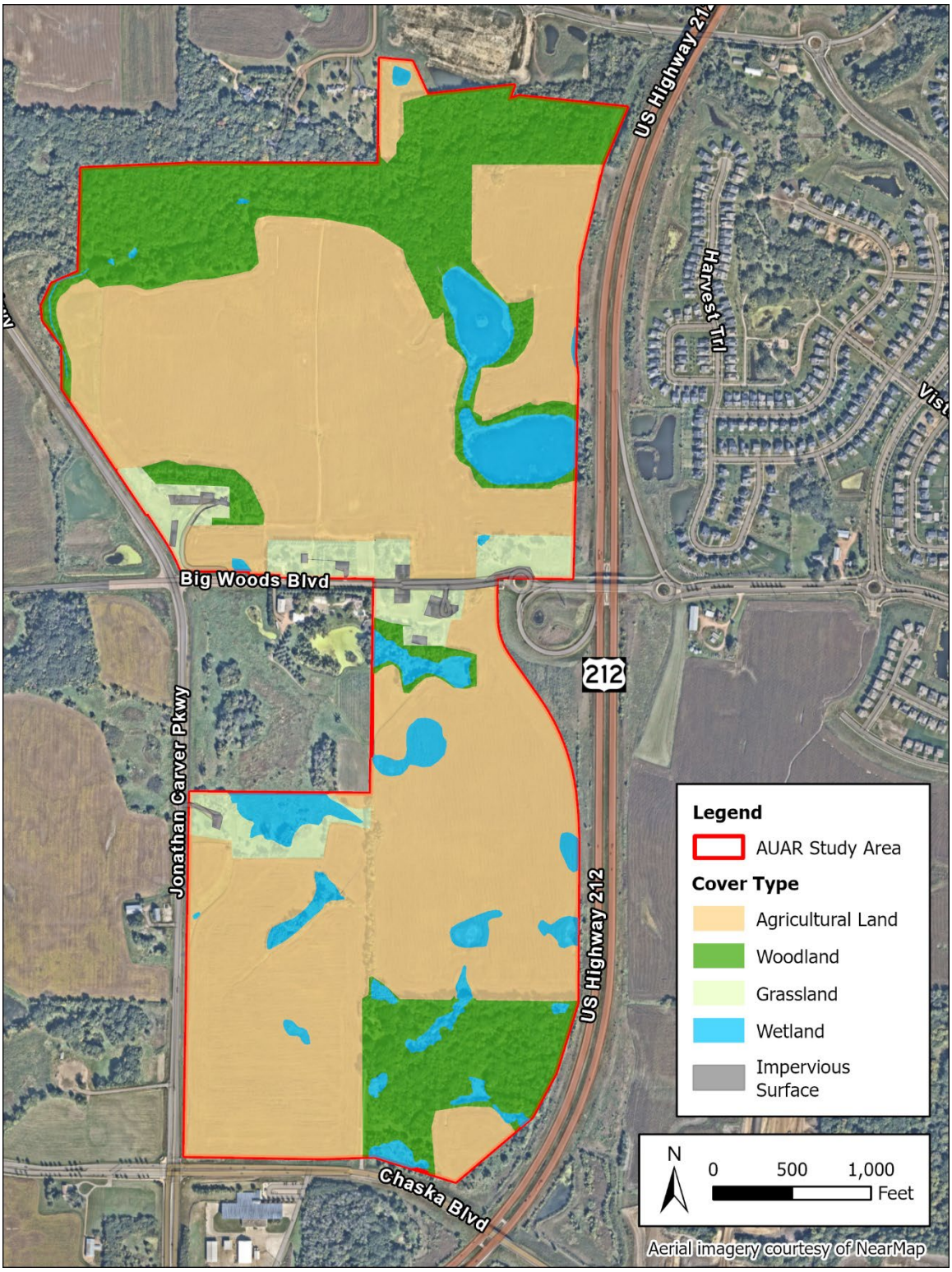
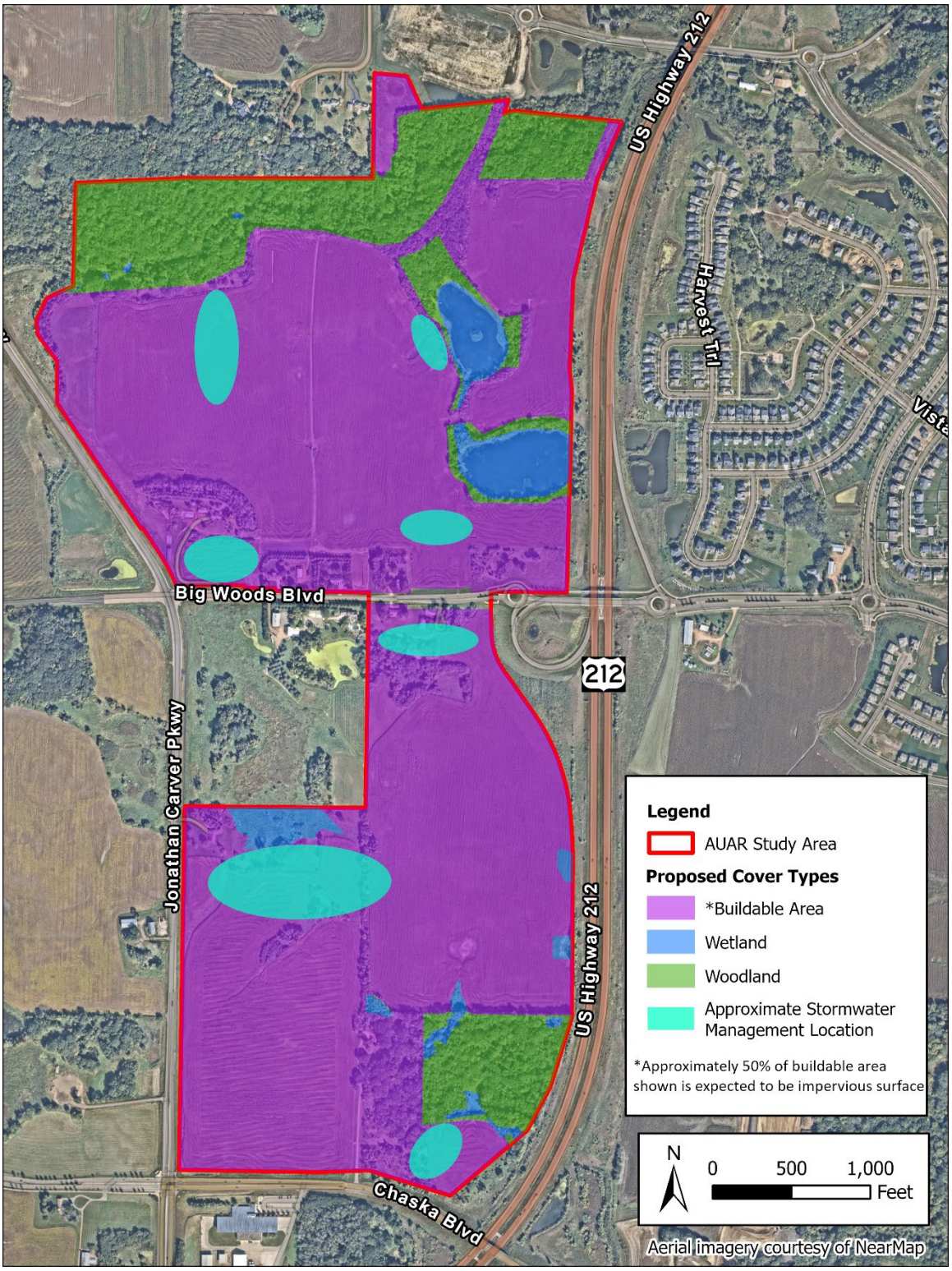


Figure 7: Proposed Cover Types



9. PERMITS AND APPROVALS REQUIRED

AUAR Guidance: A listing of major approvals (including any comprehensive plan amendments and zoning amendments) and public financial assistance and infrastructure likely to be required by the anticipated types of development projects should be given for each major development scenario. This list will help orient reviewers to the framework that will protect environmental resources. The list can also serve as a starting point for the development of the implementation aspects of the mitigation plan to be developed as part of the AUAR.

Table 6: Anticipated Permits and Approvals

Unit of Government	Type of Application	Status
Federal		
US Army Corps of Engineers	Section 404 Permit	To be applied for, if applicable
State		
Minnesota Pollution Control Agency	Section 401 Water Quality Certification	To be applied for, if applicable
	National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities	To be applied for, if applicable
	Sanitary Sewer Extension Permit	To be applied for, if applicable
	Construction Contingency Plan and Response Action Plan approval	To be applied for, if applicable
Minnesota Department of Natural Resources	Temporary Groundwater Appropriation Permit for Construction Dewatering	To be applied for, if applicable
	Utility Crossing License	To be applied for, if applicable
	Public Waters Permit	To be applied for, if applicable
Minnesota Department of Health	Water Main Installation Permit	To be applied for, if applicable
Minnesota Department of Transportation	Miscellaneous Work on Trunk Highway Right of Way	To be applied for, if applicable
	Drainage Permit	To be applied for, if applicable
Regional		
Metropolitan Council	Sewer Connection/Extension Permit	To be applied for, if applicable
	Comprehensive Plan Amendment	To be applied for, if applicable
	Establish Metropolitan Urban Service Area (MUSA) staging	To be applied for, if applicable

Unit of Government	Type of Application	Status
County		
Carver County	Application for Water Management Rules Conformance and Approval	To be applied for, if applicable
	County Right of Way Permit	To be applied for, if applicable
City		
City of Chaska	Concept/Preliminary/Final Plat	To be applied for, if applicable
	Zoning	To be applied for, if applicable
	Comprehensive Plan Amendment	To be applied for, if applicable
	Road, Sewer, and Water Feasibility Study	To be applied for, if applicable
	Grading Permit	To be applied for, if applicable
	Development Agreement	To be applied for, if applicable
	Completion of the Orderly Annexation Process with Dahlgren Township	To be completed
	Land Use/Development Application	To be applied for, if applicable
	Building Permit	To be applied for, if applicable
	Demolition Permit	To be applied for, if applicable
	AUAR Approval	In process

*Note: Coordination with Minnesota Valley Electric Cooperative (MVEC) will continue as design advances, and future permitting/approvals may be required.

10. LAND USE

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, and prime or unique farmlands.

The AUAR study area is located in a rural area in the southwest corner of Chaska, Minnesota. It includes two parcels within Dahlgren Township (west of Chaska) and 15 existing parcels within Chaska. The parcels within Dahlgren Township are under an Orderly Annexation Agreement between the City of Chaska and Dahlgren Township.

According to data from the City of Chaska, the Metropolitan Council[10] and aerial imagery, the majority of the study area is currently used as agricultural land, with some areas of undeveloped land and single family residential (see Figure 8). Land uses adjacent to the study area include agricultural land and single-family residential use.

There is one recreational feature, the Southwest Regional Trail, in the vicinity of the AUAR study area. An existing segment of the Southwest Regional Trail is approximately 500 feet north of the AUAR study area, at the intersection of Creek Road/County Road 10 and Chaska Creek Boulevard.

According to the Natural Resources Conservation Service (NRCS) data, 24.1% of the study area is considered farmland of statewide importance (see Table 9 for more information).

ii. Planned land use as identified in comprehensive plans (if available) and any other applicable plan for land use, water, or resource management by a local, regional, state, or federal agency.

Chaska 2040 Comprehensive Plan

The *Chaska 2040 Comprehensive Plan*[11] acts as a framework and guiding tool for development for the next 20 years in Chaska. According to this plan, the study area is designated mostly as Business Park, with some Rural Residential and Open Space uses (see Figure 10). See Table 7 for a description of this land use designation and allowed uses.

Table 7: Chaska 2040 Comprehensive Plan designations within the AUAR Study Area

Future Land Use Designation	Purpose
Business Park	Areas guided for the integration of office and light industrial uses in order to create employment centers on large sites that provide a greater diversity of jobs, higher development densities and jobs per acre, higher quality site and architectural design, and increased tax revenues. Office, office-showroom-warehousing, research and development services, high-tech electronic manufacturing, medical, and lodging are typical business uses appropriate for this land use category. Supporting retail and services, such as healthcare, fitness, child daycare, dry cleaning, bank, coffee shop, restaurant, and convenience store, should only be allowed as secondary uses, provided no more than 10 percent of the overall business park area is used for these purposes.

[10] Metropolitan Council. *Regional Planned Land Use - Twin Cities Metropolitan Area*. April 2023. Available at https://metrocouncil.org/Data-and-Maps/Research-and-Data/Metadata/Landuse-Planned-Research.aspx

[11] City of Chaska, MN. *2040 Comprehensive Plan*. Available at https://www.chaskamn.gov/605/2040-Comprehensive-Plan

Future Land Use Designation	Purpose
Rural Residential	Lots or parcels of five (5) acres or more guided for rural single-family detached dwellings at four dwelling units per 1/4 1/4 section (40 acres). This land use category is intended to ensure preservation of land identified as part of Chaska's Greenbelt. The objective of the Greenbelt is to physically separate Chaska from adjacent communities to preserve and strengthen Chaska's sense of community and identity. The buffer areas proposed in the development scenarios are consistent with this greenbelt concept and would create a natural open space separating the business park from other land uses.
Open Space Preservation	Land guided for open space preservation, including environmental protection, historic preservation, homeowners' association recreation (e.g. Jonathan), public/semi-public use or other public purposes, and for which development is prohibited through ownership, ordinances or other legal means.

Carver County 2040 Comprehensive Plan

A small portion of the AUAR study area includes land in Dahlgren Township (under Carver County's land use authority). This area is identified in the Carver County 2040 Comprehensive Plan[12] as a future growth area for the City of Chaska. It is also designated as a Transition Overlay District under the Carver County Land Use Map and Zoning Code.

Southwest Chaska Growth and Development Plan

The Southwest Chaska Growth and Development Plan,[13] adopted in January 2013, provides the City with a guide for future land use decision-making, public infrastructure investments, and review of proposed development projects in the southwest growth area. This plan was developed with substantial public involvement from many stakeholders. The AUAR study area occupies the western portion of the area studied by this plan. The plan identifies the majority of the study area as Business Park use, with some areas of open space. These open space areas include portions of the Chaska Greenbelt.

Carver County WMO 2020-2029 Watershed Management Plan

The Carver County Water Management Organization (CCWMO) 2020-2029 Watershed Management Plan is used to fulfill the County's water management responsibilities and provide a framework for water resource management.[14] This plan identifies several water resource features within the AUAR study area including a Priority 1 Stream within

[12] Carver County. 2040 Comprehensive Plan. Available at https://www.carvercountymn.gov/departments/public-services/planning-water-management/planning/plans/2040-comprehensive-plan
[13] City of Chaska, MN. *Southwest Chaska Plan*. Available at https://chaskamn.gov/182/Southwest-Chaska-Plan
[14] Carver County Water Management Organization. *2020-2029 Watershed Management Plan*. Available at: https://www.carvercountymn.gov/home/showpublisheddocument/27334/638762654895100000

the AUAR study area, which is a tributary of the Chaska Creek. Priority 1 waterbodies are considered current priority for implementation of projects.

Carver County Southwest Regional Trail Plan

The Carver County Southwest Regional Trail Plan[15] shows a trail segment from Engler Blvd to an existing segment along Creek Road. This segment of the trail was constructed in 2023.

iii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

AUAR Guidance: Water-related land use management districts should be delineated on appropriate maps, and the land use restrictions applicable in those districts should be described. If any variances or deviations from these restrictions within the AUAR area are envisioned, this should be discussed.

Existing Zoning

The parcels within the study area within the current city limits are mostly zoned as rural residential (RR), as shown in Figure 9. According to Chaska's City Code, the RR zoning regulation permits uses of agriculture, forestry, single family dwellings, parks, and state-licensed residential facilities. Additionally, there are two location-based distinctions in the RR districts: RR1 and RR2. RR1 applies to land located within the west and north central portion of Chaska which in the future may gradually be required for expansion for residential uses as residential facilities and services become available. RR2 is intended for application to land located at the edge of Chaska's corporate limits where a "green belt" separation from adjacent communities is desired. The district is intended to help preserve Chaska's identity as a separate free-standing community as urban expansion of the Twin Cities metropolitan area occurs around Chaska.

The parcels currently within Dahlgren Township are zoned as Transition Area Overlay District according to Carver County Zoning.

FEMA National Flood Hazard

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (panel number 27019C0217D, effective 12/21/2018), the majority of the AUAR study area is located in an area of minimal flood hazard. The northern portion of the study area contains a 100-year floodplain (Zone A) along the tributary of the Chaska Creek (see Figure 13).

Other Special Districts and Zoning Overlays

The unnamed DNR Public Watercourse (M-055-020-001), a tributary of the Chaska Creek, is identified in the City of Chaska's Shoreland Management ordinance and therefore, future development in this area will need to comply with the shoreland

[15] Carver County, MN. *Carver County Southwest Regional Trail Plan*. Available at: https://www.carvercountymn.gov/departments/public-works/parks-recreation/parks-trails/regional-trails

overlay district requirements. According to the City's zoning code, permitted uses within a Shoreland Overlay District include "all permitted uses allowed and regulated by the applicable zoning district underlying this shoreland overlay district as indicated on the Official Zoning Map of the City."[16] Development standards applicable to the study area (effective 2/27/2023) are described in Table 8.

Table 8: Standards Applicable to Shorelands of Tributary Watercourses

Unsewered Areas	
Lot Area (in square feet)	None
Water frontage and lot width at building line (in feet)	100
Structure setback from Ordinary High Water Mark (in feet)	100
Structure setback from roads and highways	50: Federal State, or county 30: Municipal or Private
Structure height limitation (in feet)	None
Maximum lot area covered by impervious surface (in %)	None
Sewage system setback from Ordinary High Water Mark (in feet)	75
Sewered Areas	
Lot Area (in square feet) Water front lots Other lots	None
Water frontage and lot width at building line (in feet)	75
Structure setback from Ordinary High Water Mark (in feet)	50

iv. If any critical facilities (i.e., facilities necessary for public health and safety, those storing hazardous materials, or those housing occupants who may be insufficiently mobile) are proposed in floodplain areas and other areas identified as at risk for localized flooding, describe the risk potential considering changing precipitation and event intensity.

No critical facilities are proposed as part of the development scenarios. No hazardous materials are proposed to be stored in floodplain areas.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

[16] City of Chaska. *Zoning Code*. Available at https://chaska.municipalcodeonline.com/book?type=zoning#name=15.24_Shoreland_Management

AUAR Guidance: The extent of conversion of existing farmlands anticipated in the AUAR should be described. If any farmland will be preserved by special protection programs, this should be discussed.

If development of the AUAR will interfere or change the use of any existing designated parks, recreation areas, or trails, this should be described in the AUAR. The RGU may also want to discuss under this item any proposed parks, recreation areas, or trails to be developed in conjunction with development of the AUAR area.

The AUAR must include a statement of certification from the RGU that its comprehensive plan complies with the requirements set out at Minnesota Rules, part 4410.3610, subpart 1. The AUAR document should discuss the proposed AUAR area development in the context of the comprehensive plan. If this has not been done as part of the responses to Items 6, 9, 11, 18, and others, it must be addressed here; a brief synopsis should be presented here if the material has been presented in detail under other items. Necessary amendments to comprehensive plan elements to allow for the development scenario should be noted. If there are any management plans of any other local, state, or federal agencies applicable to the AUAR area, the document must discuss the compatibility of the plan with the development scenario studied, with emphasis on any incompatible elements.

The existing land within the City of Chaska is expected to transition to different land uses as the city develops. Any new development, redevelopment, change in land use, or change in zoning is required to be consistent with the Comprehensive Plan. The scenarios are generally consistent with the proposed land uses allowed under the City of Chaska 2040 Comprehensive Plan, with the exception of the areas of the Chaska Green Belt that will be developed in accordance with the greenbelt policies within the Comprehensive Plan. Additionally, the two Dahlgren Township parcels within the study area will need to be annexed into the City. The City has certified that the updated Comprehensive Plan complies with the requirements set forth in Minnesota Rules, part 4410.3610, subpart 1. For these parcels, both scenarios will require annexation, preliminary and final plats, and rezoning.

As discussed in item 10.a. above, an existing segment of the Southwest Regional Trail is approximately 500 feet north of the AUAR study area, at the intersection of Creek Road/County Road 10 and Chaska Creek Boulevard. The City intends to promote connections to nearby trails (including the Southwest Regional Trail) and foster pedestrian connections within the overall business park area.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

An amendment to the 2040 Comprehensive Plan would be needed for both scenarios to accommodate development within the Chaska Green Belt and to incorporate the Dahlgren Township parcels that will be annexed. The City would advance a comprehensive plan amendment to also establish MUSA staging for this area prior to development occurring. Additionally, both scenarios would require a zoning change to Business Park use.

Figure 8: Existing Land Use



Figure 9: Existing Zoning

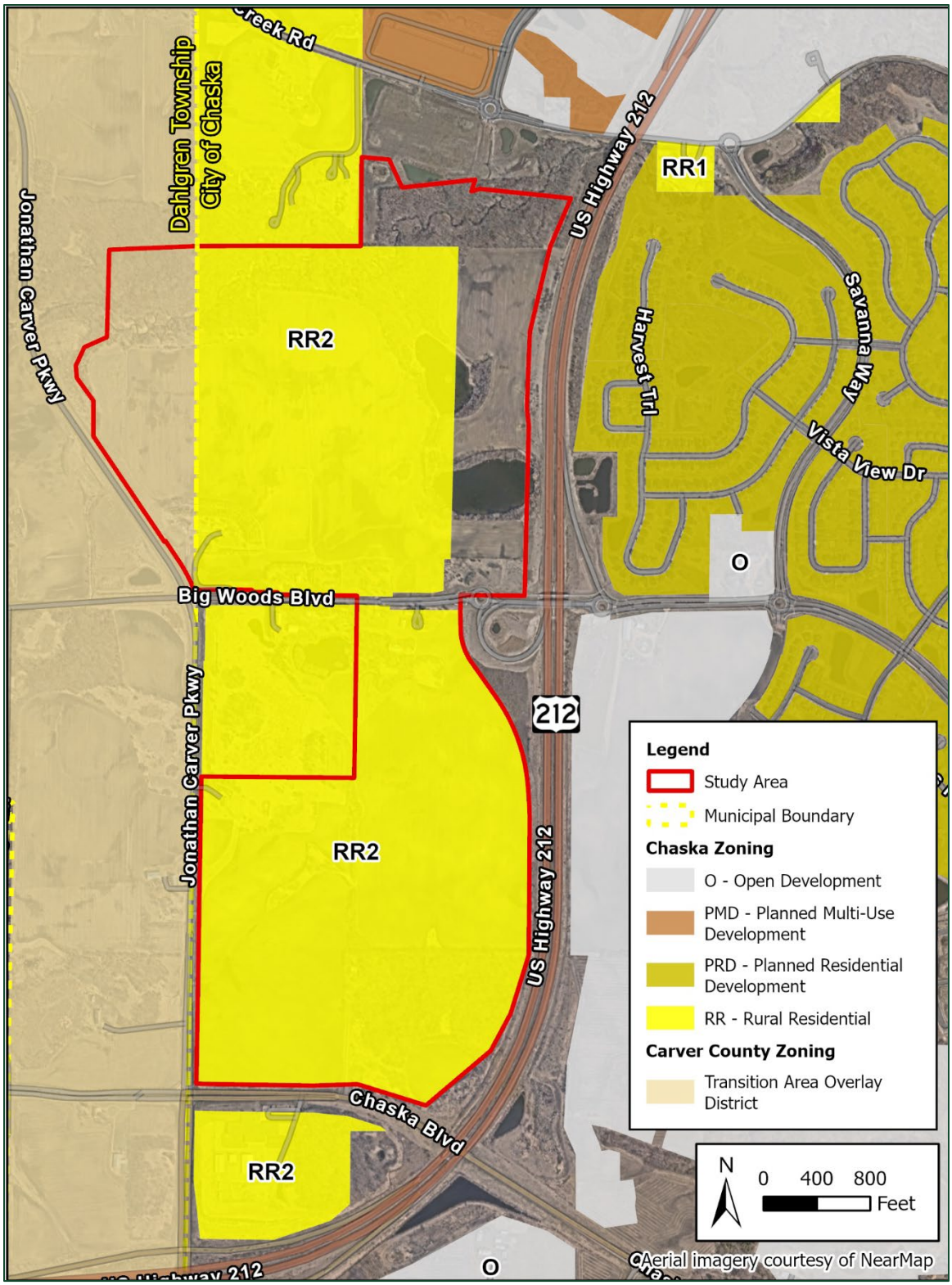
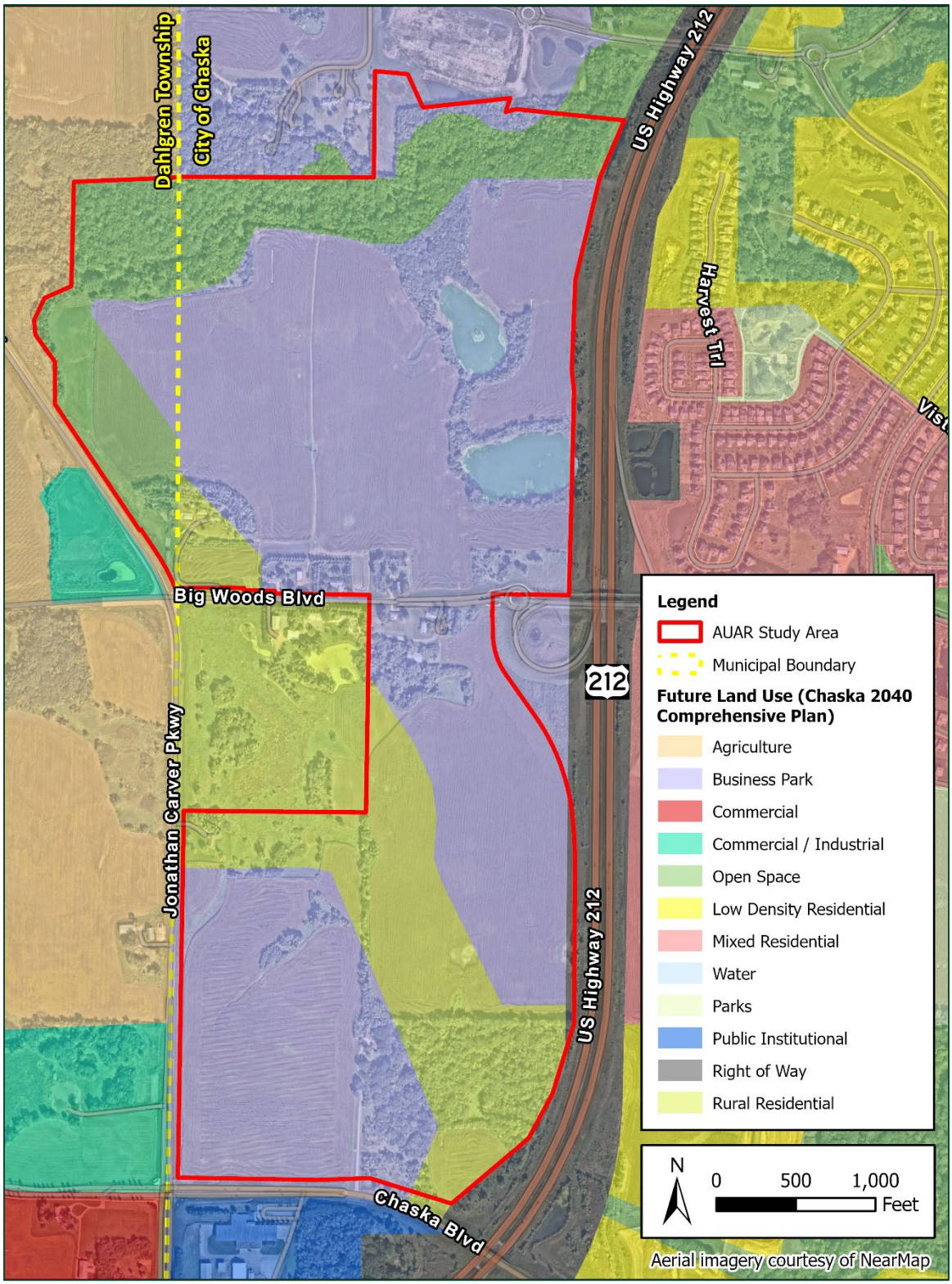


Figure 10: Future Land Use



11. GEOLOGY, SOILS, AND TOPOGRAPHY/LANDFORMS

a. Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

AUAR Guidance: A map should be included to show any groundwater hazards identified.

According to the Geologic Atlas of Carver County[17] (Minnesota Geological Survey, 2020), the AUAR study area is underlain by sand, gravel, and glacial till. The mean depth to bedrock is approximately 300-400 feet below ground surface. Bedrock is predominantly sandstone. In descending order, the upper formations are the Jordan Sandstone, and the St. Lawrence and Lone Rock formations.

There are no known sinkholes, shallow limestone formations, or unconfined/shallow aquifers located within the AUAR study area. There are no known karst conditions located within the study area or within 500 feet from the study area.

b. Soils and Topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability, or other soil limitations, such as steep slopes or highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections, or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

AUAR Guidance: The number of acres to be graded and number of cubic yards of soil to be moved need not be given; instead, a general discussion of the likely earthmoving needs for development of the area should be given, with an emphasis on unusual or problem areas. In discussing mitigation measures, both the standard requirements of the local ordinances and any special measures that would be added for AUAR purposes should be included. A standard soils map for the area should be included.

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the area is comprised of 19 different soil types. Soil information is included in Table 9 and Figure 11. The erosion hazard rating included in Table 9 indicates the hazard of soil loss from off-road areas after the soil surface is exposed from disturbance activities. Within the study area,

[17] University of Minnesota Twin Cities University Digital Conservancy. *Geologic atlas of Carver County, Minnesota*. Available at: https://conservancy.umn.edu/items/f656ce2c-f888-41ab-94fc-2f70cf00e066

approximately 33% of the soil surface is mapped with a “moderate” or “severe” erosion rating, indicating that some erosion is likely in these areas and that erosion control measures may be needed. The remaining 67% of the study area was not rated or was mapped with a “slight” rating, meaning that erosion is unlikely under ordinary climatic conditions.

The topography within the northern portion of the study area varies from 942 feet in elevation at the north center of the study area to 894 feet in elevation along the stream that runs along the northern side. The northern portion of the study area features various lowland areas as well as multiple bodies of water. All drainage generally flows towards these bodies of water or lowland areas. The topography within the southern portion of the study area varies from 970 feet in elevation at the south center of the site to 914 feet at the northwest area. The southern portion of the study area contains various lowland and wetland areas within its boundary. All drainage generally flows towards these lowland or wetland areas.

Desktop review and planning efforts for mass grading have been completed for the northern portion of the AUAR study area to prepare for the development of buildings, roadways, stormwater, public improvements, and landscaping. This grading is anticipated to require approximately 600,000 cubic yards of cut and 700,000 cubic yards of fill. Similar activities will take place within the southern portion of the study area. This will require standard earthmoving equipment. Where appropriate, slope stabilization will be provided by means of vegetation establishment, erosion control blankets, or other standard methods of erosion and sediment control.

A National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Program Construction Stormwater Permit (SWPPP) will be obtained prior to any earthwork or grading activities within the AUAR study area.

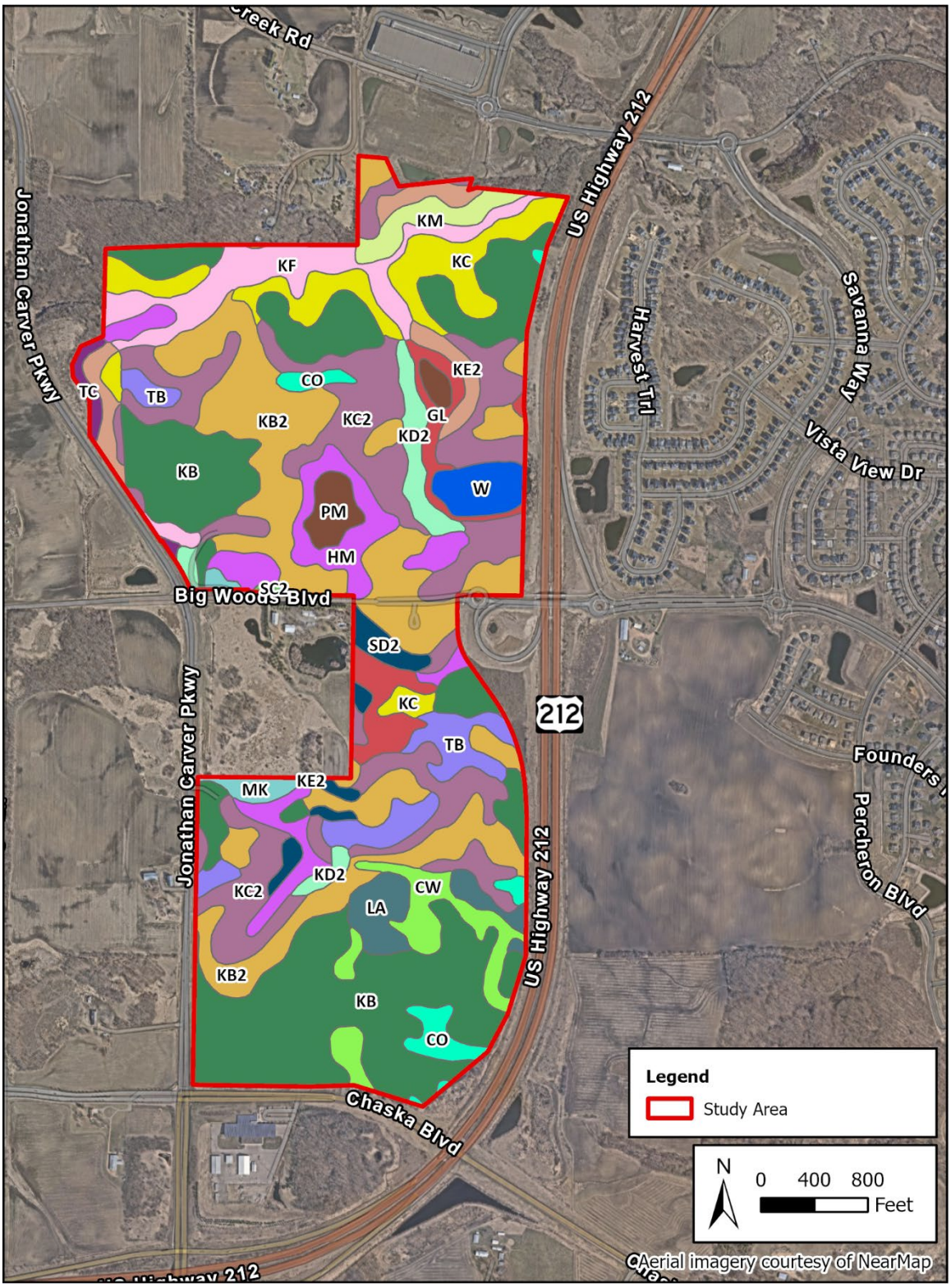
Operational activities from future development are not expected to have an impact on soils within the study area.

Table 9: Soil Types

Map unit symbol	Map unit name	Acres in Study Area	Percent of Study Area	Farmland Rating	Erosion Hazard Rating
CO	Cordova clay loam, 0 to 2 percent slopes	5.9	1.6%	Prime farmland if drained	Slight
CW	Cordova-Webster complex	10.9	3.0%	Prime farmland if drained	Slight
GL	Glencoe clay loam, 0 to 1 percent slopes	10.4	2.9%	Prime farmland if drained	Slight
HM	Hamel loam, 0 to 2 percent slopes	19.5	5.4%	Prime farmland if drained	Slight
KB	Kilkenny-Lester loams, 2 to 6 percent slopes	91.6	25.5%	All areas are prime farmland	Slight

Map unit symbol	Map unit name	Acres in Study Area	Percent of Study Area	Farmland Rating	Erosion Hazard Rating
KB2	Lester-Kilkenny loams, 2 to 6 percent slopes, eroded	62.9	17.5%	All areas are prime farmland	Slight
KC	Lester-Kilkenny loams, 6 to 12 percent slopes	20.6	5.7%	Farmland of statewide importance	Moderate
KC2	Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded	58.5	16.3%	Farmland of statewide importance	Moderate
KD2	Lester-Kilkenny complex, 10 to 16 percent slopes, moderately eroded	7.4	2.1%	Not prime farmland	Moderate
KE2	Lester-Kilkenny complex, 16 to 22 percent slopes	8.3	2.3%	Not prime farmland	Moderate
KF	Lester-Kilkenny complex, 22 to 40 percent slopes	17.3	4.8%	Not prime farmland	Severe
KM	Minneiska-Kalmarville complex, frequently flooded	5	1.4%	Not prime farmland	Slight
LA	Le Sueur-Lester complex, 1 to 6 percent slopes	7.3	2.0%	All areas are prime farmland	Slight
MK	Muskego and Houghton soils, 0 to 1 percent slopes	2.9	0.8%	Not prime farmland	Slight
PM	Klossner muck, 0 to 1 percent slopes	5.2	1.4%	Farmland of statewide importance	Slight
SC2	Lester-Storden complex, 6 to 10 percent slopes, moderately eroded	0.4	0.1%	Farmland of statewide importance	Moderate
SD2	Lester-Storden complex, 10 to 16 percent slopes, moderately eroded	5.5	1.5%	Not prime farmland	Moderate
TB	Terril loam, 2 to 6 percent slopes	12.5	3.5%	All areas are prime farmland	Slight
TC	Terril loam, 6 to 12 percent slopes	1.8	0.5%	Farmland of statewide importance	Moderate
W	Water	5.4	1.5%	Not prime farmland	Not rated
Total		**359.3**	**100%**		

Figure 11: Soil Types



12. WATER RESOURCES

AUAR Guidance: The information called for on the EAW form should be supplied for any of the infrastructure associated with the AUAR development scenario, and for any development expected to physically impact any water resources. Where it is uncertain whether water resources will be impacted depending on the exact design of future development, the AUAR should cover the possible impacts through a "worst case scenario" or else prevent impacts through the provisions of the mitigation plan.

a. Describe surface water and groundwater features on or near the site below.

i. Surface Water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within one mile of the project. Include DNR Public Waters Inventory number(s), if any.

Kimley-Horn completed a level 2 wetland delineation for the southern portion of the AUAR study area in September 2024 and received a Notice of Decision (NOD) from the city approving these boundaries in June 2025. The city also supplied two 2022 NODs for parcels in the northern portion of the study area which were delineated by other professionals. Kimley-Horn delineated wetland boundaries for the remaining parcels in the AUAR study area; however, these boundaries have not been approved by a regulatory agency. There are 27 wetlands mapped within the AUAR study area, see Table 10: and Figure 12.

Kimley-Horn used the Minnesota Routine Assessment Method Version (MnRAM) 2.0 to classify these wetlands based on the city's Local Surface Water Management Plan (LSWMP).[18] The study area is also within the Carver County WMO. Since the city's wetland buffer rules are more restrictive than the WMO's, and the study area is within the city's LGU jurisdiction, the city's LSWMP rules would be followed. Wetlands were categorized as Unique, Manage 1, Manage 2, or Manage 3. The four classes are based on the wetland floral diversity and integrity combined with wildlife habitat ranks determined from MnRAM. The LSWMP provides permanent buffer zone average width for each of the buffer classifications, see Table 11 and Figure 12. These buffers will consist of natural vegetative ground cover. The developer will need to incorporate these buffers into future site design.

[18] City of Chaska. *Local Surface Water Management Plan*. Available at https://www.chaskamn.gov/DocumentCenter/View/4063/Appendix-GLocal-Surface-Water-Management-Plan-PDF.

Table 10: Wetland Summary

Name	Plant Community	Size (acres)	Classification
Wetland 1	Wet meadow/shallow marsh	0.82	Manage 1
Wetland 2	Floodplain forest	0.26	Unique
Wetland 3	Wet meadow	0.45	Unique
Wetland 4	Wet meadow	0.28	Manage 3
Wetland 5	Seasonally flooded basin	0.31	Manage 3
Wetland 6	Floodplain forest	0.14	Manage 1
Wetland 7	Floodplain forest	0.33	Manage 1
Wetland 8-1	Floodplain forest	0.89	Manage 1
Wetland 8-2	Wet meadow	0.28	Manage 3
Wetland 9	Seasonally flooded basin	0.78	Manage 3
Wetland 10	Wet meadow	0.03	Manage 3
Wetland 11	Seasonally flooded basin	1.07	Manage 3
Wetland 12	Wet meadow/floodplain forest	1.39	Manage 2
Wetland 13	Seasonally flooded basin	0.54	Manage 3
Wetland 14	Wet meadow/sedge meadow/shallow marsh	3.55	Unique
Wetland 15	Seasonally flooded basin	2.01	Manage 3
Wetland 16	Wet meadow/floodplain forest	2.1	Manage 1
Wetland 17	Shallow marsh	0.17	Manage 3
Wetland 18	Wet meadow	0.03	Manage 3
Wetland 19	Wet meadow	0.12	Manage 3
Wetland 20	Wet meadow	0.08	Manage 3
Wetland 21	Shallow, open water/floodplain forest	6.35	Manage 1
Wetland 22	Shallow, open water/floodplain forest	4.54	Manage 1
Wetland 23	Shrub-carr	0.11	Manage 1
Wetland 24	Floodplain forest	0.03	Unique
Wetland 25	Floodplain forest	0.06	Unique
Wetland 26	Floodplain forest	0.05	Unique
Wetland 27	Shallow marsh	0.27	Manage 3

Table 11: Wetland Buffer Standards

Classification	Permanent Buffer Zone Average Width (feet)
Unique	75

Classification	Permanent Buffer Zone Average Width (feet)
Manage 1	50
Manage 2	25
Manage 3	16

One surface water resource was identified within the AUAR study area. An unnamed DNR Public Watercourse (M-055-020-001), a tributary of Chaska Creek, flows east through the northern portion of the study area. As discussed in Item 10: Land Use, this stream is classified as a tributary and requires a 100-foot building setback from its Ordinary High Water Mark (OHWM) according to city zoning code. Figure 12 shows this as a 110-foot buffer as the provided NOD only depicted the stream centerline. The extra 10 feet serves as a conservative estimate of the true 100-foot buffer from the OHWM.

There are two MPCA Section 303(d) Impaired Streams within one mile of the AUAR study area identified using the 2024 Impaired Waters List (as shown in Figure 13). An unnamed stream south of the AUAR study area is impaired due to fecal coliform and a total maximum daily load (TMDL) study for this waterbody has been approved by the US Environmental Protection Agency (EPA). Chaska Creek, located northeast of the study area, is impaired for fish bioassessment and invertebrate bioassessment and there are no TMDLs for those impairments. There are several other streams and flowlines identified within one mile of the study area; most of these features are connected to the stream that flows through the study area. There are no trout streams within one mile of the AUAR study area.

The northern portion of the study area contains a 100-year floodplain (Zone A) along the tributary of the Chaska Creek (Figure 13).

Figure 12: Aquatic Resources and Buffers

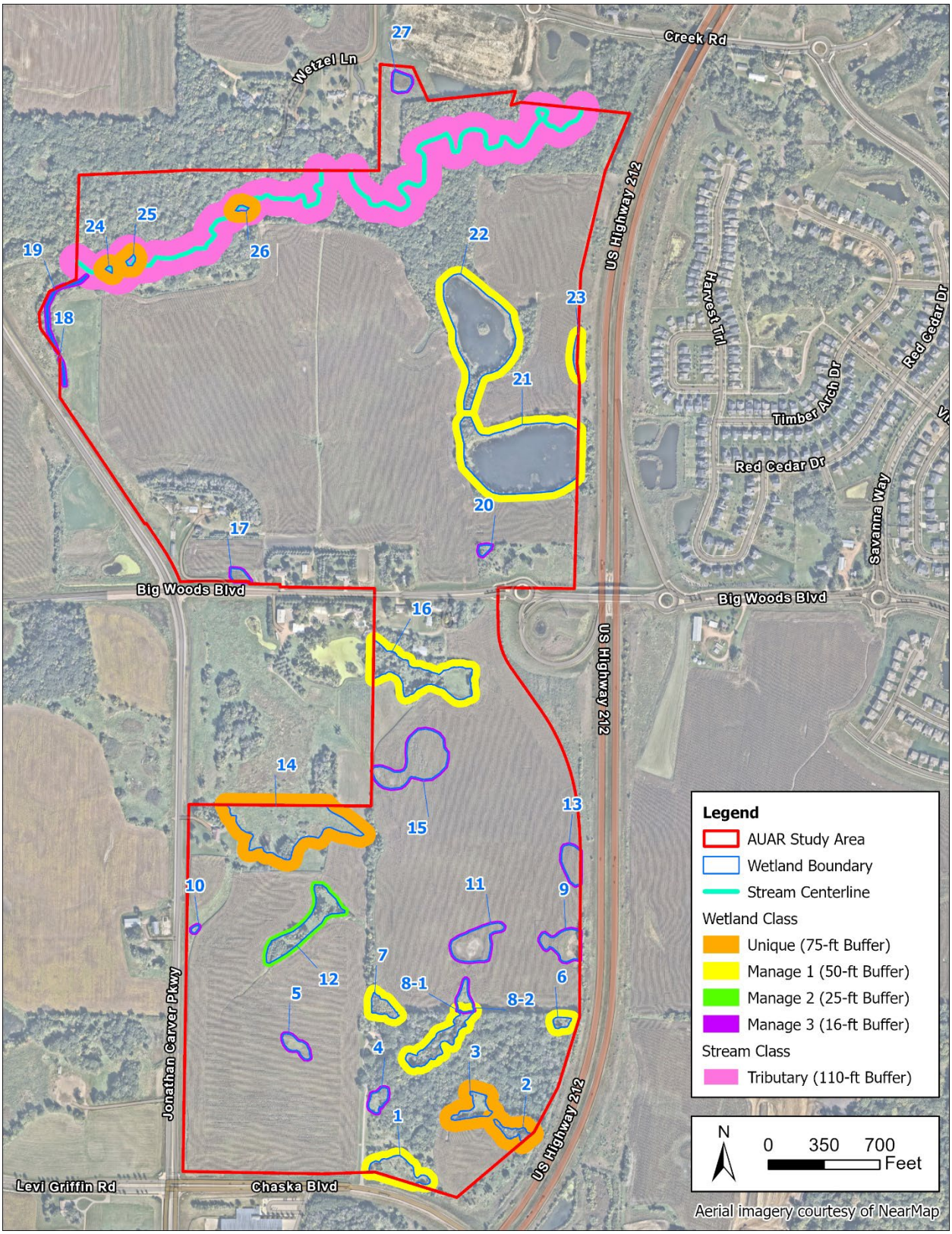
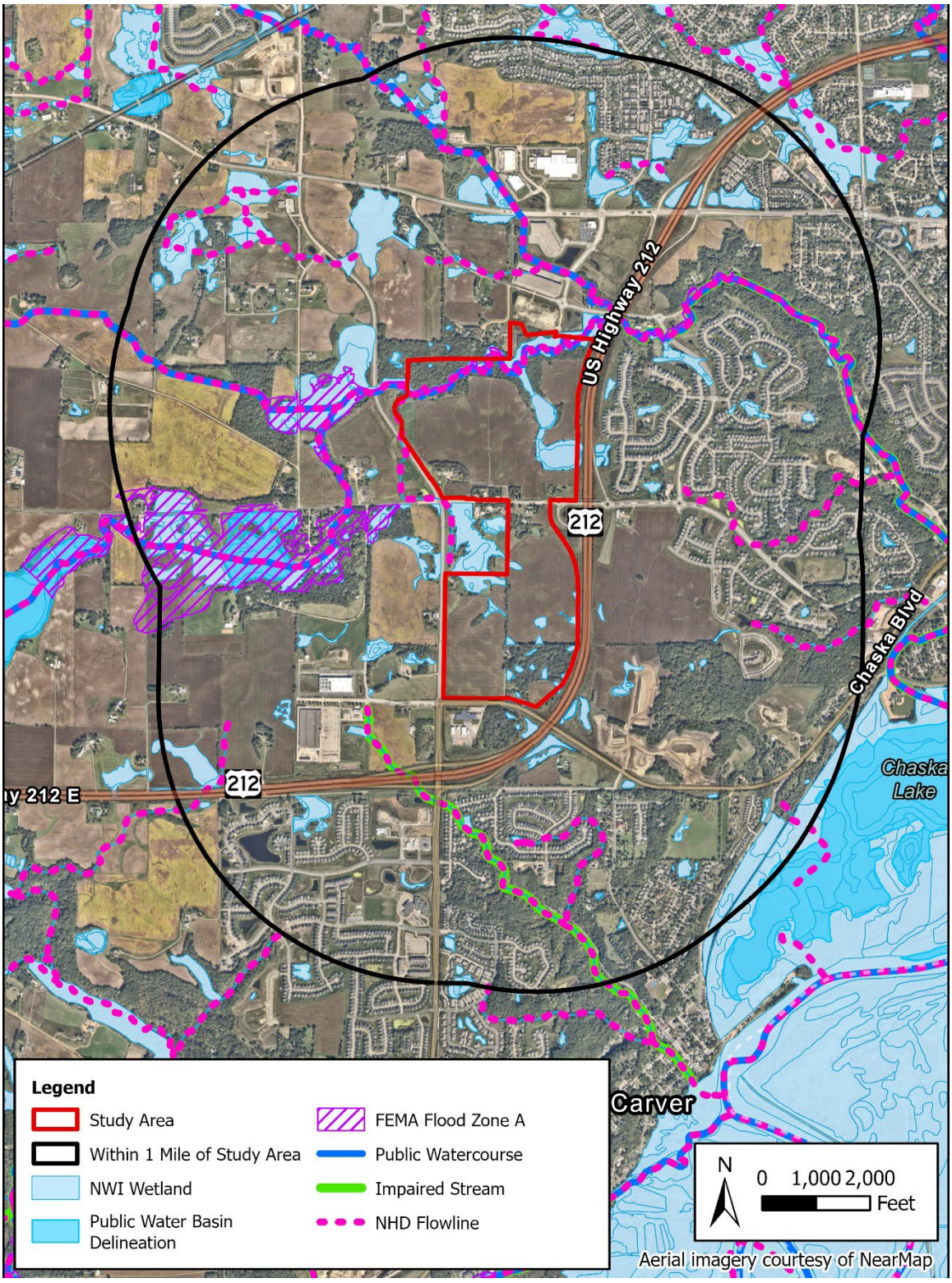


Figure 13: Surface Water Resources



ii. Groundwater – aquifers, springs, and seeps. Include 1) depth to groundwater; 2) if project is within a MDH well protection area; and 3) identification of any onsite and/or nearby wells, including unique numbers and well logs, if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

According to the Minnesota Spring Inventory there are no known springs or seeps within the study area.

The Minnesota Hydrogeology Atlas indicates that groundwater is likely present between 10-20 feet below grade, excluding the wetland areas.[19]

Based on the Minnesota Department of Health Minnesota Well Index (MWI), there are 5 wells located within the AUAR study area and five wells within 250 feet of the AUAR study area (see Table 12 and Figure 14).[20] Wells located within the study area would be properly sealed by a licensed well contractor prior to development within the study area per MPCA and MDH well sealing requirements.

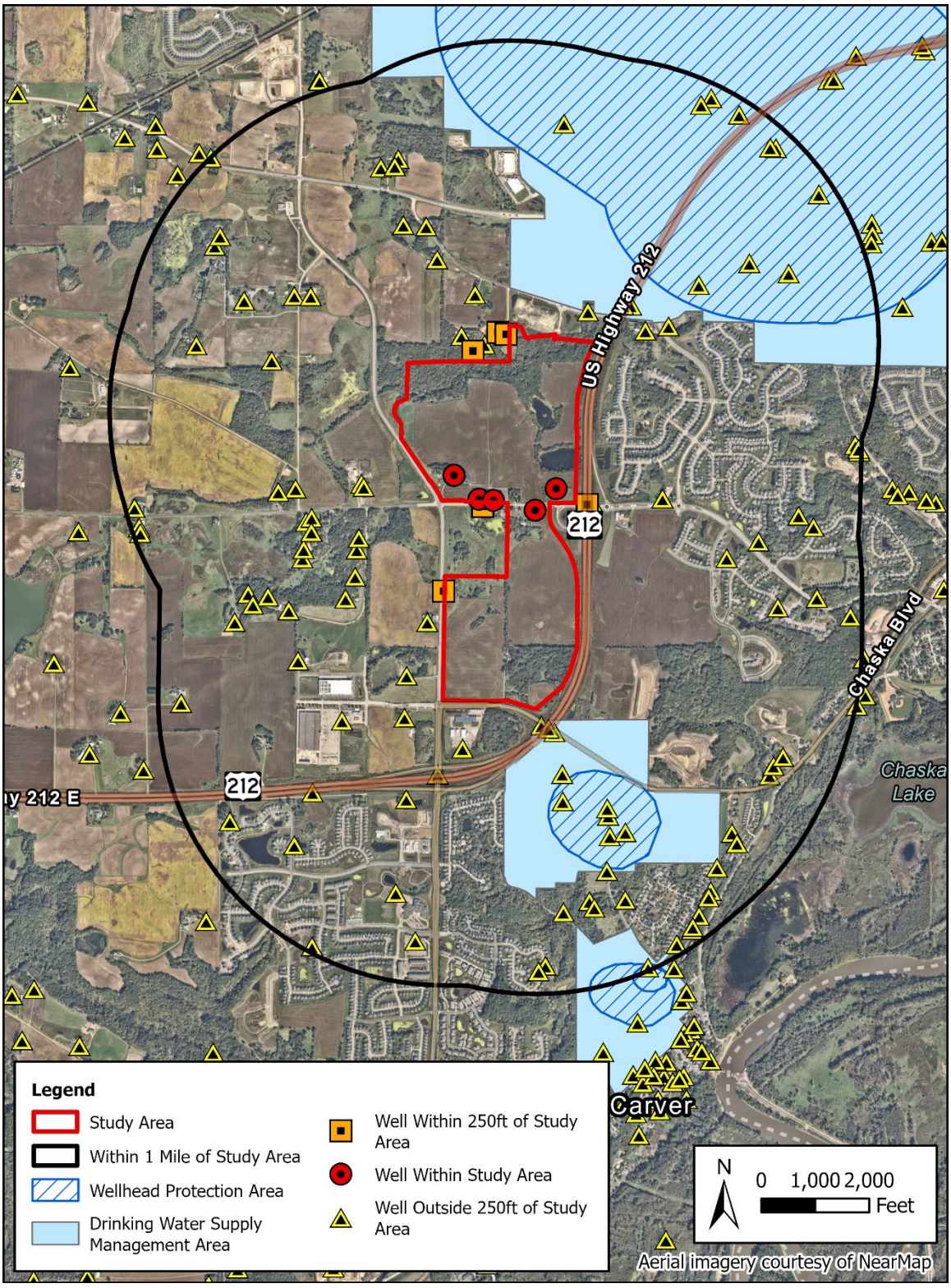
The study area is not located within a wellhead protection area or Drinking Water Supply Management Area (DWSMA). Wellhead protection areas with associated DWSMAs are located approximately 0.1 to 0.3 miles northeast and southeast of the study area.

Table 12: MWI Wells within the AUAR Study Area

Well ID Number	Index Status	Well Use	Well Depth (feet)
221492	Active	Domestic	215
424015	Active	Domestic	211
481235	Active	Domestic	218
546818	Active	Domestic	227
142819	Sealed	Domestic	300

[19] Minnesota DNR. *Water-Table Elevation and Depth to Water Table, Minnesota Hydrogeology Atlas series HG-03*. 2016. Available at https://gisdata.mn.gov/dataset/geos-hydrogeology-atlas-hg03.
[20] Minnesota Department of Health. *Minnesota Well Index*. Accessed October 2025. Available at https://mnwellindex.web.health.state.mn.us/.

Figure 14: Groundwater Resources



b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.

i. Wastewater – For each of the following, describe the sources, quantities, and composition of all sanitary, municipal/domestic, and industrial wastewaters projected or treated at the site.

AUAR Guidance: Observe the following points of guidance in an AUAR:

- *Only domestic wastewater should be considered in an AUAR—industrial wastewater would be coming from industrial uses that are excluded from review through an AUAR process*
- *Wastewater flows should be estimated by land use subareas of the AUAR area; the basis of flow estimates should be explained*
- *The major sewer system features should be shown on a map and the expected flows should be identified*
- *If not explained under Item 6, the expected staging of the sewer system construction should be described*
- *The relationship of the sewer system extension to the RGU's comprehensive sewer plan and (for metro area AUARs) to Metropolitan Council regional systems plans, including MUSA expansions, should be discussed. For non-metro area AUARs, the AUAR must discuss the capacity of the RGU's wastewater treatment system compared to the flows from the AUAR area; any necessary improvements should be described.*
- *If on-site systems will serve part of the AUAR, the guidance in the February 2000 edition of the EAW Guidelines on page 16 regarding item 18b under Residential development should be followed.*

1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.

Wastewater from the proposed development scenarios will be discharged into the City of Chaska collection system. This will require extending the existing infrastructure from Creek Boulevard to the study area. The extension will need to cross an unnamed creek to provide service. A lift station will need to be constructed to complete this extension. A figure of the City's existing trunk sewer system is included in Appendix E.

The City of Chaska pumps their wastewater to the Blue Lake Water Resource Recovery Facility (WRRF) in Shakopee owned by the Metropolitan Council of Environmental Services (MCES). The Blue Lake WRRF currently treats 27 million gallons per day and has

the capacity to treat the permitted average wet weather design flow of 42 million gallons per day (MGD).

The existing average daily flow of wastewater is 2.67 MGD per the Chaska 2040 Comprehensive Sewer Plan (for 2020). The added wastewater flow from the proposed development was estimated from the proposed acreage of business park land and Table 3.1 of the Chaska 2040 Comprehensive Sewer Plan. Table 3.1 states that business park land use type equates to approximately 1,500 gallons per acre per day. Table 13 below summarizes the proposed approximate added flows from Scenarios 1 and 2.

Table 13: Wastewater Discharges

	Average Daily Flow - MGD
Scenario 1	0.07
Scenario 2	0.11

Scenarios 1 and 2 are projected to add 0.07 and 0.11 MGD of wastewater flow (domestic and light industrial) to the system respectively. Thus the Blue Lake WRRF has the capacity to treat the added flow from this development.

2) If the wastewater discharge is to a subsurface sewage treatment system (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.

No subsurface sewage treatment systems (SSTS) are anticipated within the AUAR study area for the proposed development scenario.

3) If the wastewater discharge is to surface water, identify the wastewater treatment methods, discharge points, and proposed effluent limitations to mitigation impacts. Discuss any effects to surface or groundwater from wastewater discharges.

No wastewater discharge to surface waters is anticipated for the proposed development scenario.

ii. Stormwater – Describe changes in surface hydrology resulting from change of land cover. Describe the routes and receiving water bodies for runoff from the project site (major downstream water bodies as well as the immediate receiving waters). Discuss environmental effects from stormwater discharges on receiving waters post-construction, including how the project will affect runoff volume, discharge rate, and change in pollutants. Consider the effects of current Minnesota climate trends and anticipated changes in rainfall frequency, intensity, and amount with this discussion. For projects requiring NPDES/SDS Construction Stormwater permit coverage, state the total number of acres that will be disturbed by the project and describe the stormwater pollution prevention plan (SWPPP), including specific best management practices to address soil erosion and sedimentation during and after project

construction. Discuss permanent stormwater management plans, including methods of achieving volume reduction to restore or maintain the natural hydrology of the site using green infrastructure practices or other stormwater management practices. Identify any receiving waters that have construction-related water impairments or are classified as special as defined in the Construction Stormwater permit. Describe additional requirements for special and/or impaired waters.

AUAR Guidance: For an AUAR the following additional guidance should be followed in addition to that in EAW Guidelines:

- *It is expected that an AUAR will have a detailed analysis of stormwater issues*
- *A map of the proposed stormwater management system and of the water bodies that will receive stormwater should be provided*
- *The description of the stormwater systems would identify on-site and "regional" detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where on-site ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.*
- *If present in or adjoining the AUAR area, the following types of water bodies must be given special analyses:*
    - *Lakes: Within the Twin Cities metro area, a nutrient budget analysis must be prepared for any "priority lake" identified by the Metropolitan Council. Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with the MPCA and DNR staffs.*
    - *Trout streams: If stormwater discharges will enter or affect a trout stream, an evaluation of the impacts on the chemical composition and temperature regime of the stream and the consequent impacts on the trout population (and other species of concern) must be included.*

Environmental Effects

Stormwater runoff can cause a number of environmental problems. When untreated stormwater drains from manmade locations such as agricultural fields, impervious surfaces, and construction sites, it can carry sediments and/or pollutants that harm aquatic ecosystems and wildlife.

Existing Conditions

There are two primary stormwater discharge points from the study area. Approximately 85% of the study area flows north to an unnamed tributary of Chaska Creek. Much of this area flows through multiple wetland complexes and manmade channels before discharging to the tributary. The remaining 15% of the site flows south through

wetlands and channels to an unnamed tributary of Chaska Lake. Additionally, there are three culverts under US 212 that range in size from 24-42" that water from the study area drains to.

The study area contains a minimal amount of impervious surfaces, which are primarily limited to existing roads and farmsteads. The predominant land use within the area is agricultural, characterized primarily as straight row crops.

During Construction

Prior to construction, a comprehensive Stormwater Pollution Prevention Plan (SWPPP) will be completed before submitting the NPDES permit application and commencing construction. It will detail all planned temporary and permanent BMPs, maintenance schedules, responsible parties, and phasing. During construction, erosion and sediment control best management practices (BMPs) will be implemented to prevent impacts to aquatic ecosystems per the City of Chaska and MPCA MS4 and NPDES Standards. The following design/construction standards are to be adhered to during construction:

- Provide necessary precautions to prevent soil erosion, damage to adjacent property, and control runoff to surface water.
- The erosion and sediment control measures shall be maintained and repaired throughout construction and until such time as the property has been either sodded or a seeded vegetative cover has taken hold.
- Preserve topsoil on the site following the guidelines in CCWMO to preserve the structure of undisturbed soils on site and/or maintain comparable to existing quality and permeability of disturbed soils once mass grading is completed and infrastructure is installed.
- Minimize the need for disturbance of portions of the project with steep slopes. When steep slopes must be disturbed, techniques such as slope draining and terracing should be implemented.
- Exposed soil, including stockpiles, shall be stabilized immediately where activity has permanently or temporarily ceased on any portion of this site and will not resume for a period of time exceeding 7 days.
- The last two hundred (200) linear feet of any drainage ditch or swale must be stabilized within 24 hours after connecting to surface water.
- Temporary rock entrances are required on every construction site and are required after backfilling of foundation.
- Perimeter sediment controls (e.g., silt fence, bio-logs, sediment traps) must be installed down-gradient of all land disturbance before construction begins. Storm

drain inlet protection must be in place for all inlets that could receive runoff from disturbed areas.

- Temporary sedimentation basins must be provided for common drainage areas of 5 or more acres that are to be disturbed at any one time.
- If dewatering is to take place, adequate treatment must be provided so that nuisance conditions will not result from the discharge.

Post Construction

Overall impervious surface area is proposed to increase to 130 acres in Scenario 1 and 200 acres in Scenario 2, increasing the runoff rate from existing conditions. To mitigate this, the stormwater basins on-site are proposed to be sized to accommodate runoff from these impervious areas and the outlet control structures designed to discharge at a rate less 0.2 Cubic Feet per Second (cfs) per acre, as required by the City of Chaska. If site constraints inhibit the feasibility of this requirement, these constraints will be well documented in the future Stormwater Management Plan. Under the proposed development, runoff from the impervious areas of the site is proposed to be directed to stormwater management BMPs on-site where the runoff is proposed to be treated according to City of Chaska and CCWMO requirements. Stormwater rates, water quality volume (WQv), and abstraction volumes are all required to follow these standards.

The soils across the AUAR study area primarily consist of hydrologic group C/D and are not suited for infiltration. The size, type, and location of stormwater BMP's will vary throughout the site. Permanent above-ground stormwater management basins are currently proposed for the site. To meet water quality requirements, National Urban Runoff Program (NURP) basins combined with bioretention benches are anticipated to be the most effective and feasible solution. All NURP Basins and bioretention benches will be designed in accordance with the National Urban Runoff Program and CCWMO guidelines. These NURP basins are expected to provide sufficient permanent pool volume, which will facilitate the reuse of stormwater for irrigation of landscaped areas within the property. See Figure 15 for potential stormwater management locations.

Utilizing stormwater reuse is likely the preferred approach to satisfy the volume abstraction requirements set forth by the CCWMO. All stormwater reuse and treatment practices will be designed in accordance with CCWMO guidelines. A more comprehensive and detailed stormwater analysis will be conducted and submitted during subsequent stages of the project design phase.

The CCWMO reviews for potential stormwater-related impacts to upstream and downstream properties. The following requirements will be adhered to:

a. Upstream:

    i. Drainage flowing onto the site from upstream areas must be managed and accommodated. Alterations to flow paths which impound or slow down water

will not be allowed unless it can be shown that the upstream system can accommodate the change.

b. Downstream:

   i. To the greatest extent possible, existing drainage areas and discharge points from the site should be maintained post-development and concentrated flows onto neighboring properties should be avoided or mitigated. The downstream conveyance system (natural or structural) must be able to accommodate, to the nearest major receiving waterbody, increased volumes caused by development.

   ii. If diversions from existing drainage areas and alterations to discharge points are proposed, the responsible party shall provide additional documentation (rates, volumes, velocities, duration of flow, etc.) to demonstrate that the downstream conveyance system can accommodate the change. The party responsible shall provide evidence of easements or other agreements concerning water flow if a plan involves increased impervious or directing concentrated runoff onto a neighboring property.

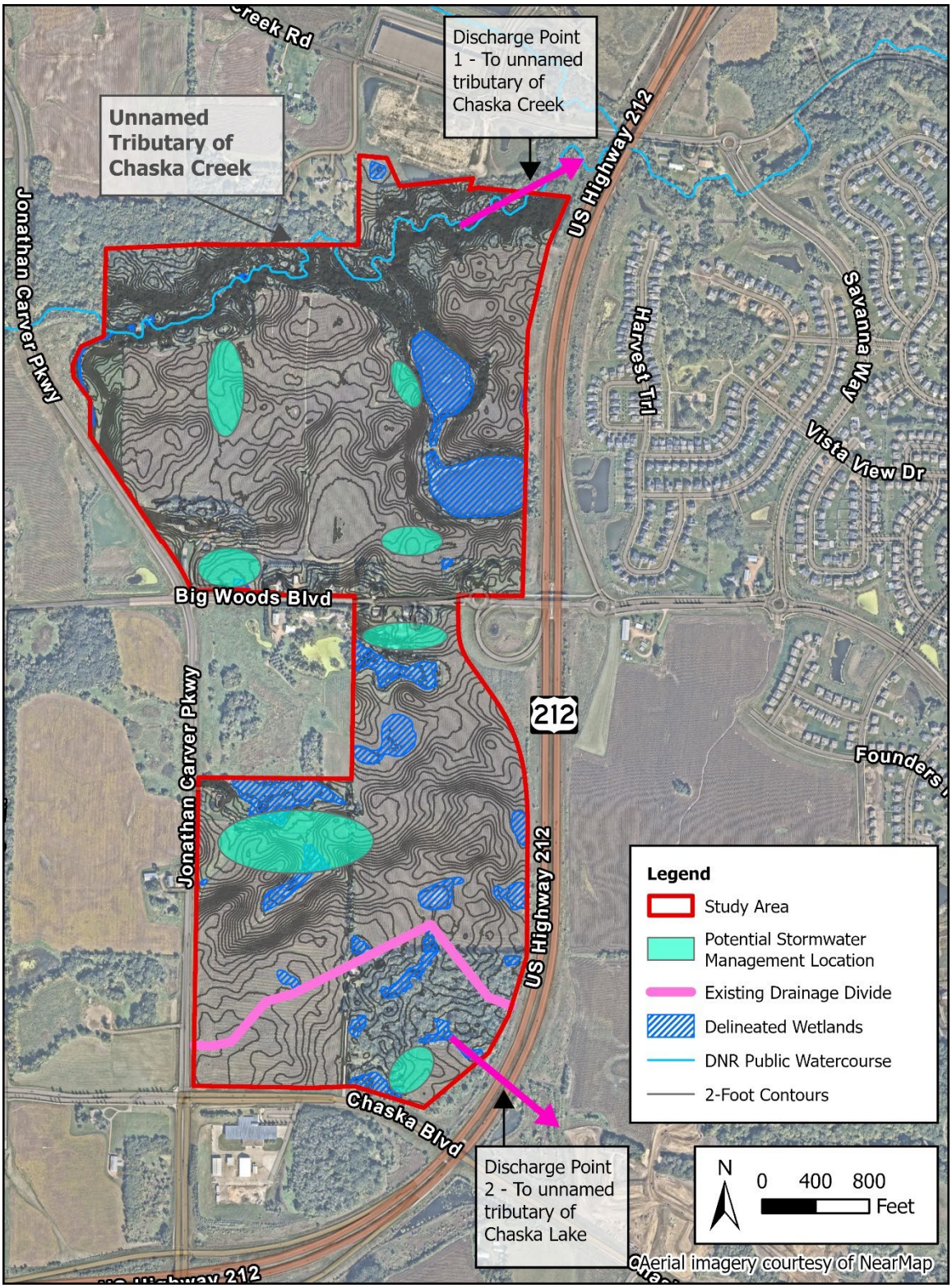
Additionally, the developer will need a MnDOT drainage permit for future development and flow rates to each existing culvert under US 212 must be maintained.

Chloride Management

Both development scenarios would significantly increase the amount of impervious surface within the project area, and consequently the amount of chloride (road salt) used for winter maintenance. Chloride released into local lakes, streams, and groundwater does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants.

The City of Chaska has implemented several policies and measures to reduce overuse of chloride. The City has a 'Winter Road Maintenance Policy' which highlights the impact of chloride on the environment and operators responsibility to properly/responsibly apply chlorides. City plow operators maintain Smart Salting Certification in addition to attending annual internal trainings focusing on proper selection and application of material based on road conditions. The City has also outfitted all plows with sectioned cutting edges on all plow blades to increase snow and ice removal efficiency and decrease reliance on chloride along with routine equipment calibration to ensure accurate application. Additionally, educational information highlighting chloride impacts to the environment and best practices for responsible salt use is distributed to both residents and businesses throughout the winter. As design advances, the project proposer will also use the Minnesota Stormwater Manual for low salt design strategies.

Figure 15: Potential Stormwater Management Locations



iii. **Water Appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use, and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Discuss how the proposed water use is resilient in the event of changes in total precipitation, large precipitation events, drought, increased temperatures, variable surface water flows and elevations, and longer growing seasons. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation. Describe contingency plans should the appropriation volume increase beyond infrastructure capacity or water supply for the project diminish in quantity or quality, such as reuse of water, connections with another water source, or emergency connections.**

AUAR Guidance: If the area requires new water supply wells, specific information about that appropriation and its potential impacts on groundwater levels should be given; if groundwater levels would be affected, any impacts resulting on other resources should be addressed.

A Water Use Appropriations Permit would be required if permanent dewatering is determined to be necessary for construction of development in Scenario 1 and 2. A Water Use Appropriation permit is required for permanent water dewatering and applies to users withdrawing more than 10,000 gallons of water per day or one million gallons per year.

The existing Victoria Drive Water Treatment Plant (WTP) has a capacity of 12.6 million gallons per day (MGD) and the projected 2025 maximum day demand of 9.4 MGD per the Local Water Supply Plan in the Chaska 2040 Comprehensive Plan.

The added water demand from the proposed development was estimated from the wastewater flow as described in Item 12.b.i and the estimated irrigation demand for the lawn and landscaping cover type. Table 14 below summarizes the proposed approximate water demand from Scenarios 1 and 2.

Table 14: Water Demand

	Average Daily Demand - MGD
Scenario 1	0.08
Scenario 2	0.12

Scenarios 1 and 2 are projected to add 0.08 and 0.12 MGD of water demand to the system respectively. Thus, the Victoria Drive WTP has the capacity to treat the added demand to this development. The current water system is estimated to be

approximately 75% utilized per the Chaska 2040 Comprehensive plan. The proposed added water demand for each scenario is estimated to increase the percent utilized by less than 1%.

Water supply to the proposed development scenarios will be provided by the City of Chaska water distribution system. This will require extending the existing infrastructure from Creek Boulevard to the study area. The extension will need to cross an unnamed creek (DNR Public Watercourse M-055-020-001) to provide service. Additionally, a water tower or other infrastructure improvements are necessary to ensure adequate flow and pressure for the development.

iv. Surface Waters

1) Wetlands – Describe any anticipated physical effects or alterations to wetland features, such as draining, filling, permanent inundation, dredging, and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.

The wetland impacts listed in Table 3 are based on anticipated worst case development impact; however, these impacts are dependent on final design for either development scenario. Once specific projects are identified, the developer will be required to comply with all federal, state, and local wetland requirements. These requirements include avoiding and minimizing impacts to the extent practicable as well as mitigating any wetland impacts that are unavoidable. If the end user cannot maintain natural surface flow between wetlands, they may need to install pipe connections to maintain hydraulic connectivity.

2) Other surface waters – Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal, and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features, taking into consideration how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

AUAR Guidance: Water surface use need only be addressed if the AUAR area would include or adjoin recreational water bodies.

A Minnesota DNR public watercourse is mapped in the northern portion of the study area. If impacts to a public watercourse are anticipated, a Public Waters Work permit will be obtained prior to construction activities. Regulatory coordination with the MnDNR Hydrologist and Fisheries specialists is recommended to implement appropriate avoidance and mitigation measures, if required.

No alterations to other surface waters are anticipated as part of the development scenario. The study area does not contain and is not adjacent to any recreational waterbodies.

13. CONTAMINATION/HAZARDOUS MATERIALS/WASTES

a. Pre-project Site Conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site, such as soil or groundwater contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize, or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

The Minnesota Pollution Control Agency's (MPCA) What's In My Neighborhood database and the Minnesota Department of Agriculture's (MDA) Chemical Incidents and Agricultural Spills inventory were reviewed to determine if any known contaminated properties or potential environmental hazards are located within and adjacent to the AUAR study area (within a 250-foot buffer). This review identified four MPCA WIMN properties near the study area, listed below in Table 15 and shown in Figure 16. The nearest MDA site is located over 1,000 feet from the study area and is not anticipated to be a concern.

Using the following criteria established by the Minnesota Department of Transportation (MnDOT), the sites were classified into high, medium, and low risk sites:

- High risk: In general, sites with high environmental risks are properties that have documented releases of chemicals or hazardous or regulated substances (e.g., active and inactive state and federal cleanup sites, active and inactive dump sites, and active leaking underground storage tank sites), strong evidence of contamination (e.g., soil staining, stressed vegetation), or storage of large volumes of petroleum or other chemicals (e.g., bulk storage tank facilities).
- Medium risk: Sites of medium environmental risk are properties where smaller volumes of petroleum, chemicals, or hazardous materials are frequently stored and used (e.g., registered underground and aboveground storage tanks, vehicle repair facilities, metal

working shops), but at which no evidence of spills or releases exists, or properties with documented releases that have been "closed" (signifying no further cleanup actions deemed necessary) by the MPCA. Closed sites, such as closed leaking underground storage tank sites, are considered medium risks because residual soil or groundwater contamination may exist.

- Low risk: Low environmental risk sites include properties where minor volumes of chemicals or hazardous materials have been used or stored (e.g., hazardous waste generators, and possibly some farmsteads and residences).

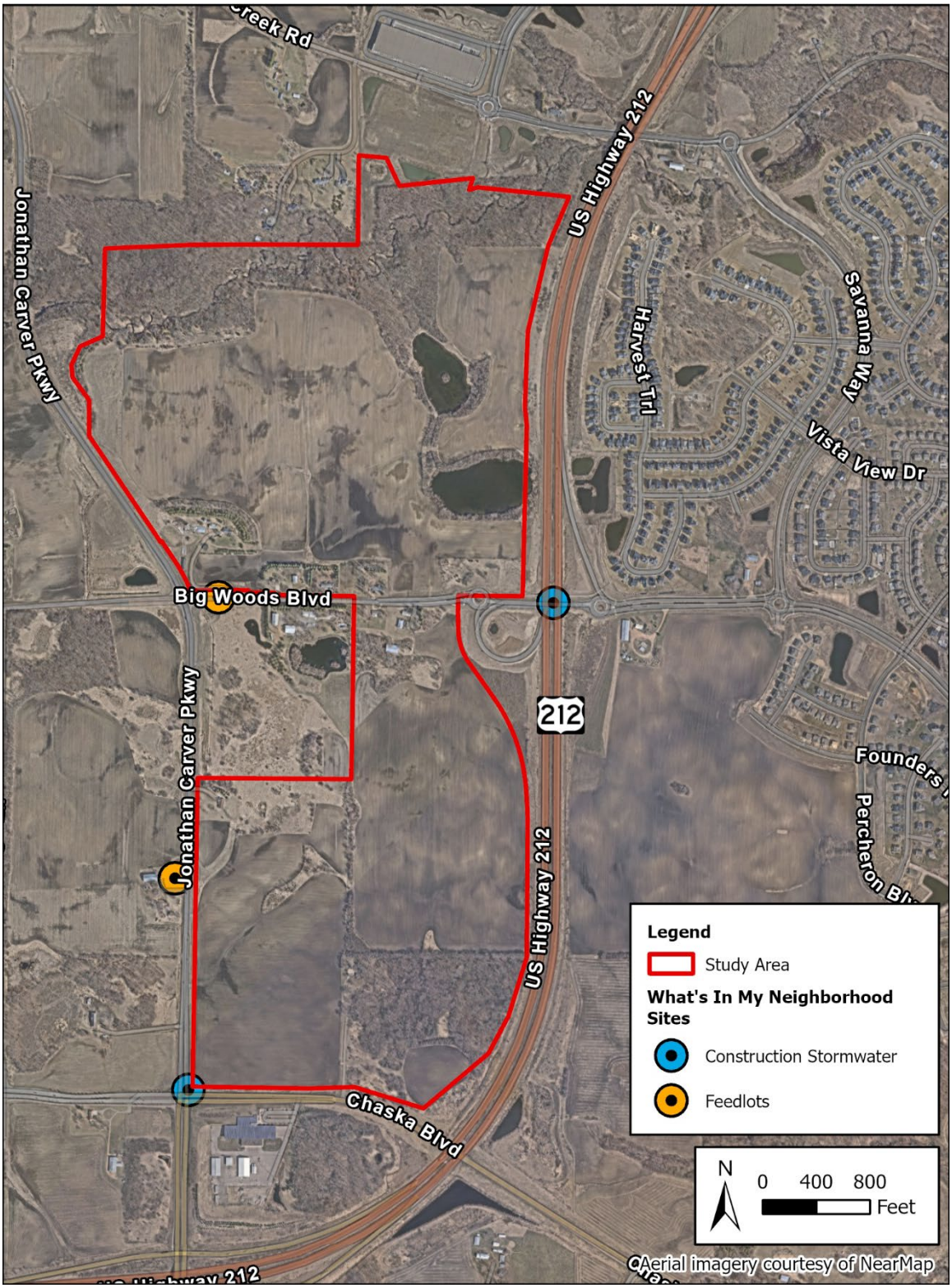
Based on these criteria, these properties are considered low risk for contamination concerns.

Table 15: MPCA What's in my Neighborhood Sites

Site ID	Name	Status	Activity	Risk
228821	TH 212 Interchange and CSAH 44 Improvements	Active	Construction Stormwater	Low
64266	Joe Wickenhauser Farm	Active	Feedlots	Low
95728	Tim Raser Farm	Active	Feedlots	Low
129263	Freeway Commercial District Improvements	Active	Construction Stormwater	Low

A Phase I/II Environmental Site Assessment (ESA) should be completed prior to construction under either Scenario and coordinate with the MPCA on safe handling and disposal of any contamination and hazardous materials found on the site prior to and during construction. An asbestos and regulated materials (ARM) assessment would need to be completed prior to the demolition of any structures, and a demolition notification will be made to the MPCA/Minnesota Department of Health (MDH) if asbestos containing material (ACM) is identified during the ARM assessment. If ACM and/or other regulated solid waste is identified during the ARM assessment requiring removal, generated solid waste will be disposed of at an MPCA permitted landfill.

Figure 16: MPCA What's in my Neighborhood Sites



b. Project Related Generation/Storage of Solid Wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

AUAR Guidance: Generally, only the estimated total quantity of municipal solid waste generated and information about any recycling or source separation programs of the RGU need to be included.

Future development will adhere to applicable laws, rules, and ordinances related to the management of solid and hazardous waste as required by Minnesota Statutes, section 473.811 and Chaska's municipal code.

Construction Generated Solid Waste

Construction under either development scenario would generate construction-related waste materials such as wood, packaging, excess materials, and other wastes, which would either be recycled or disposed of in the proper facilities in accordance with state regulations and guidelines.

Operation Generated Solid Waste

Recycling for industrial buildings in the AUAR study area will be conducted in accordance with the 2016 Recycling Law (Minnesota Statutes Chapter 115A, Section 115A.151 and Section 115A.552).

The proposed development would generate new demands on solid waste management and sanitation services provided in the project area. During operation, it is estimated that the non-residential (commercial/industrial) waste stream be approximately 1,531 tons per year for Scenario 1 and 2,297 tons per year for Scenario 2.[21]

c. Project Related Use/Storage of Hazardous Materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location, and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spills or releases of hazardous materials. Identify measures to avoid, minimize, or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

AUAR Guidance: Not required for an AUAR. Potential locations of storage tanks associated with commercial uses in the AUAR should be identified (e.g., gasoline tanks at service stations).

Any demolition activities must comply with state and federal regulations that require inspection of the structure for hazardous materials such as asbestos, lead based paint, light ballasts,

[21] Estimated based on the Minnesota Environmental Quality Board's Climate Calculator Tool

thermostats, stored chemicals, and ozone depleting chemicals. Both scenarios could potentially require an aboveground storage tank. The necessity of the storage tank and specifications will be determined in later design phases.

d. Project Related Generation/Storage of Hazardous Wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of hazardous wastes including source reduction and recycling.

AUAR Guidance: Not required for an AUAR.

Not applicable.

14. FISH, WILDLIFE, PLANT COMMUNITIES, AND SENSITIVE ECOLOGICAL RESOURCES (RARE FEATURES)

a. Describe fish and wildlife resources as well as habitats and vegetation on or near the site.

AUAR Guidance: The description of fish and wildlife resources should be related to the habitat types depicted on the cover types map. Any differences in impacts between development scenario should be highlighted in the discussion.

The majority of the land within the AUAR study area has been previously disturbed through farming. Based on a review of data from MnDNR,[22] there is one Regionally Significant Ecological Area (RSEA) located within the study area along the tributary of the Chaska Creek that flows through the northern portion of the site. There is one Native Plant Community (NPC), two Sites of Biodiversity Significance (SBS), and one RSEA within one mile of the study area. Most of the study area is agricultural land, with some areas of forest, grassland, and wetland. Forest, grassland, and wetlands may provide habitat for wildlife. Wildlife that can be found within the study area include birds, mammals, and insects. There are several residences located in the center portion of the study area.

b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number and/or correspondence number (ERDB) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe results.

AUAR Guidance: For an AUAR, prior consultation with the DNR Division of Ecological Resources for information about reports of rare plant and animal species in the vicinity is required. Include

[22] Minnesota Department of Natural Resources. Data available at MN Geospatial Commons: https://gisdata.mn.gov/dataset?organization=us-mn-state-dnr&q=DNR

the reference numbers called for on the EAW form in the AUAR and include the DNR's response letter. If such consultation indicates the need, an on-site habitat survey for rare species in the appropriate portions of the AUAR area is required. Areas of on-site surveys should be depicted on a map, as should any "protection zones" established as a result.

State-Listed Species

Kimley-Horn reviewed the Natural Heritage Information System (NHIS) data per license agreement LA-2024-006 for state listed species within one mile of the study area. The database includes known occurrences of any state endangered, threatened, or special concern listed species. One species record, sessile-flowered yellow cress (*Rorippa sessiliflora*), was identified within one mile of the study area. The identification of this species is consistent with the Natural Heritage Review received from the MnDNR on July 17, 2025 (MCE #2025-00616, see

Appendix B).

Sessile-flowered Yellow Cress

Sessile-flowered yellow cress, an annual plant, occurs on exposed river sediments along the Mississippi River, and possibly the lower Minnesota River. This habitat type is ephemeral or seasonal in nature and usually appears as a narrow ecotonal zone between the normal low water line and the normal high-water line. This zone is typically underwater for a period of weeks following spring snowmelt and occasionally during the summer after periods of heavy rain. There are no extant populations of this species in Minnesota, and nearby records of this species are historic (>100 years old).

Federally-Listed Species

The U.S. Fish and Wildlife (USFWS) Service Information for Planning and Conservation (IPaC) tool was used to identify federally-listed species that may be present in the study area. An IPaC Official Species List was generated on October 23, 2025 (see Appendix B). This review identified two federally-listed threatened species, the northern long-eared bat (*Myotis septentrionalis*) and rusty-patched bumble bee (*Bombus affinis*). This review also identified the proposed threatened monarch butterfly (*Danus Plexippus*) and proposed endangered tricolored bat (*Perimyotis subflavus*). This review identified one non-essential experimental species, the whooping crane (*Grus americana*). Non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))). There is currently no federal nexus for the proposed development.

Northern Long-Eared Bat

The northern long-eared bat (NLEB) was identified by the IPaC species list. The NLEB was designated a federally endangered species by USFWS in April 2023. According to the Minnesota DNR, in the southern part of the state, NLEB may use attics, bridges, and buildings for hibernating. In summer, the species is often found within forested habitats, especially around

wetlands. Summer roosts may include under loose tree bark, in buildings, behind signs or shutters, caves, mines, and quarry tunnels. Given that a portion of the study area is forested, there is potential for the northern long-eared bat to utilize the site. Future development may include the removal of trees.

Tricolored Bat

The tricolored bat was proposed to be designated as a federally endangered species by USFWS in September 2022. According to the USFWS, during the winter, tricolored bats are often found in caves and abandoned mines. During the spring, summer, and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss, pine trees, and occasionally human structures. Like the NLEB, the spread of white-nose syndrome across the eastern portion of the United States has become the major threat to the Tricolored Bat, with an estimated decline of more than 90% in affected colonies. According to the DNR's Rare Species Guide, there are no known maternity colonies within the state of Minnesota. Only three live hibernating individuals have been observed in Minnesota. Given that a portion of the study area is forested, there is potential for the tricolored bat to utilize the site. Future development may include the removal of trees.

Rusty Patched Bumble Bee

The rusty patched bumble bee is listed as a federally threatened species by USFWS. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. The AUAR study area was identified within the High Potential Zone[23] for the rusty patched bumble bee. The rusty patched bumblebee High Potential Zones are subject to updates.

Monarch Butterfly

The monarch butterfly was identified by the IPaC species list and is classified as a proposed threatened species by the USFWS. The preferred habitat for this species is prairie where milkweed and flowers are present. According to the USFWS, there are many potential reasons for the butterfly's decline, including habitat loss at breeding and overwintering sites, disease, pesticides, logging at overwintering sites, and climate change. The project may include disturbance to grassland ecosystems.

Ecologically Significant Areas

[23] U.S. Fish and Wildlife Service. *Rusty Patched Bumble Bee Map (Updated 6/9/2025).* Available at: https://www.arcgis.com/apps/mapviewer/index.html?webmap=2716d871f88042a2a56b8001a1f1acae

As noted in the Natural Heritage Review letter, a calcareous fen has been documented in the vicinity of the proposed project (see Appendix B). A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates.

c. Discuss how the identified fish, wildlife, plant communities, rare features, and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

State-Listed Species

Sessile-flowered Yellow Cress

There are no extant populations of this species in Minnesota, and the study area does not contain suitable habitat for the sessile-flowered yellow cress. Impacts to this species are not anticipated.

Federally-listed Species

Northern Long-Eared Bat

The development scenarios will likely require tree clearing. According to the USFWS, tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. Given that the majority of study area has been cultivated for agricultural use and does not contain caves or large expanses of forested habitat, the potential for the northern long-eared bat to utilize the study area is likely low.

Tricolored Bat

The development scenarios will require tree clearing. According to the USFWS, tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. Given that the majority of study area has been cultivated for agricultural use and does not contain caves or large expanses of forested habitat, the potential for the northern long-eared bat to utilize the study area is considered low.

Rusty Patched Bumble Bee

Suitable habitat for the rusty patched bumble bee may be present within the study area. The proposed project may affect vegetation that could harbor rusty patched bumble bee and/or suitable bee habitat; however, ground and vegetation disturbing activities are not expected to appreciably diminish the quality or extent of available suitable habitat within the study area. Reseeding disturbed grasslands with native seed mix is recommended by the DNR to avoid potential impacts to the rusty patched bumble bee.

Monarch Butterfly

Suitable habitat for the monarch butterfly may be present within the study area. The proposed development may affect vegetation that could harbor monarch butterflies and/or suitable monarch habitat; however, ground and vegetation disturbing activities are not expected to appreciably diminish the quality or extent of available suitable habitat within the study area.

Ecologically Significant Areas

The proposed development will likely not have surface water impacts to the calcareous fen given it is over two miles away from the study area and does not have a clear surface connection. Groundwater impacts to the calcareous fen are possible (see Calcareous Fen Fact Sheet in Appendix B).

If future development in the area proposes impacts near or within the mapped RSEA in the northern portion of the study area, a survey may be required. If impacts are proposed to the field surveyed resource, avoidance and minimization measures would be discussed with the DNR to identify next steps.

Invasive Species

Invasive species are a major cause of biodiversity loss and are considered biological pollutants by the DNR. Invasive species can be moved on construction equipment, landscaping equipment, and other debris.

Stormwater

Stormwater run-off can cause a number of environmental problems. When stormwater drains off a construction site, it can carry sediment and pollutants that harm lakes, rivers, streams, and wetlands which in turn may harm wildlife. Strategies for stormwater management and treatment of stormwater run-off within the study area are discussed in Item 12 of the AUAR.

Tree Removal

The study area contains approximately 79.2 acres of wooded land. Forests and forested areas provide an important natural resource in Minnesota. Forest clearing and tree removal creates a variety of environmental impacts including habitat destruction, biodiversity impairment, soil erosion, and loss of carbon sinks. Although some tree removal will be necessary, the scope of removal will be limited as much as feasible to support the proposed development.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

State-Listed Species

Sessile-flowered Yellow Cress

There are no extant populations of this species in Minnesota, and the study area does not contain suitable habitat for the sessile-flowered yellow cress. Impacts to this species are not anticipated.

Federally-listed Species

Northern Long-Eared Bat

Tree clearing activities should be restricted to when northern long-eared bats are not likely to be present, between November 1 to March 31. Coordination with USFWS before tree clearing is recommended.

Tricolored Bat

Tree clearing activities should be restricted to when tricolored bats are not likely to be present, between November 1 to March 31. Coordination with USFWS before tree clearing is recommended.

Rusty Patched Bumble Bee

The use of native plant species in seed mixes is recommended to promote pollinator friendly habitat within the study area.

Monarch Butterfly

The use of native plant species in seed mixes is recommended to promote pollinator friendly habitat within the study area.

Ecologically Significant Areas

Coordination should occur with the DNR to ensure compliance under the Wetland Conservation Act (WCA).

Invasive Species

State requirements necessitate the control and spread of state listed noxious weeds and/or invasive weeds if encountered prior to construction. Disturbed areas would be reestablished using appropriate native and stabilization seed mixes. Methods to avoid spreading noxious weeds and/or invasive species will be incorporated into project specifications (and/or SWPPP when developed). According to the DNR, some methods that can prevent the spread of invasive species during construction include:

- Inspecting construction equipment and removing any visible plant, seeds, mud, dirt clods, and animals when arriving and leaving a site.
- Using certified weed-free products such as weed-free seed or hay whenever possible.
- Using mulch, soil, gravel, etc., that is free of invasive species whenever possible.
- Inspecting soil and plant material during planting for signs of invasive species and removing or destroying the invasive species or the plant and associated soil if the invasive species cannot be separated out.

Tree Removal

Although tree removal will be required for development, some existing trees may be preserved in areas outside construction limits. The City of Chaska has a tree preservation ordinance that pertains to wooded steep slopes. The ordinance currently states wooded land with an eighteen (18) percent slope or greater shall be preserved in its natural state for environmental value, particularly to deter soil erosion on the steep slopes/ravines and protect natural wildlife habitat

areas. In addition, buildings (except for residential decks as regulated in CZO 15.12.200 paragraph J) and parking shall be set back at least fifty (50) feet from the edge of the eighteen (18) percent slope and a thirty (30) foot "no-grade/mow" zone provided for adjacent to the edge of the eighteen (18) percent slope for purposes of erosion control. The point of measurement shall be where slopes of eighteen (18) percent or greater exist. No building or structures shall be constructed on wooded slopes of eighteen (18) percent or more in grade. Additional tree preservation outside of wooded steep slope areas will be reviewed and identified during the development review process.

Stormwater

The proposed development scenarios include stormwater management and treatment of all stormwater run-off within the AUAR study area.

15. HISTORIC PROPERTIES

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include 1) historic designations; 2) known artifact areas; and 3) architectural features. Attach letter received from the Minnesota State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

AUAR Guidance: For an AUAR, contact with the State Historic Preservation Office and State Archeologist is required to determine whether there are areas of potential impacts to these resources. If any exist, an appropriate site survey of high probability areas is needed to address the issue in more detail. The mitigation plan must include mitigation for any impacts identified.

During the Scoping step of this AUAR, the State Historic Preservation Office (SHPO) recommended that an archaeological survey be conducted within the proposed development area with the goals of 1) identifying archaeological sites within the project boundary that have not been previously documented and 2) evaluating any sites that are identified to determine their historical significance and eligibility for listing in the National Register of Historic Places (NRHP). A Cultural Desktop Review was completed by Chronicle Heritage in 2026 and the summary of the findings are described below.

According to the Minnesota Statewide Historic Inventory Portal, five historical sites were identified within 500 feet of the AUAR study area (see Table 16). The Ortlip Farmstead, previously listed as eligible, was demolished in 2005. None of the previously surveyed above-ground structures within the study area are structures recommended eligible for the NRHP.

Table 16: Historic Properties within 500 Feet

Minnesota Historic Property Record #	Type	Demolished	NRHP Evaluation	Intersects with Study Area
CR-CKC-00634	Farmstead	No	Not Eligible	Yes

Minnesota Historic Property Record #	Type	Demolished	NRHP Evaluation	Intersects with Study Area
CR-CKC-00635	House	No	Not Eligible	Yes
CR-CKC-00636	House	No	Not Eligible	Yes
CR-CKC-00637	House	No	Not Eligible	Yes
CR-CKC-00638	Farmstead	Yes	Not Eligible	No

A review of the Minnesota Office of the State Archaeologist (OSA) Portal was conducted to identify previously reported archaeological or cemetery burial sites and previous cultural resource surveys within one mile of the study area. This review resulted in the identification of one cemetery lead, one archaeological site lead, and seven archaeological sites within one mile of the study area (see Table 17). The cemetery lead is the only one of these sites that intersects the study area.

Table 17: Archaeological and Burial Sites Within One Mile

Site #	Name	Type	Affiliation	Intersects with Study Area
	Griffin Cemetery, McBride Cemetery	Site Lead, Cemetery/burial – Inactive/lost	Historic Euro-American	Yes
21CRau		Mound Site - Unverified	Unknown Prehistoric	No
21CR0070		Isolated Find	Unknown Prehistoric	No
21CR0101	Hutchinson	Lithic Scatter	Unknown Prehistoric	No
21CR0135	Engler Boulevard West	Isolated Find	Unknown Prehistoric	No
21CR0138	Chaska Heights	Lithic Scatter	Unknown Prehistoric	No
21CR0139	Chaska Heights II	Lithic Scatter	Unknown Prehistoric	No
21CR0142		Artifact Scatter	Unknown Prehistoric	No
21CR0151		Lithic Scatter	Unknown Prehistoric	No

The results of these findings will be submitted to SHPO and OSA to obtain concurrence on location and type of field survey needed as a next step to be completed prior to development occurring.

If future development requires applying for a Section 404 permit, the project proposer must also consider potential impacts on historic properties under Section 106, which requires consultation with the SHPO and other relevant parties to identify any potential mitigation needed.

16. VISUAL

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

AUAR Guidance: Any impacts on scenic views and vistas present in the AUAR should be addressed. This would include both direct physical impacts and impacts on visual quality or integrity. EAW Guidelines contains a list of possible scenic resources.

If any non-routine visual impacts would occur from the anticipated development, this should be discussed here along with appropriate mitigation.

There are no scenic views or vistas in or near the AUAR study area. The AUAR study area includes existing agricultural land that is not near any unique designated scenic views or vistas. Any development of agricultural land will have an impact on the visual look of a property. Future development would conform with the city ordinances for building height, building form, landscape screening, and lighting to avoid impacts to neighboring properties and species. No significant visual impacts are anticipated.

17. AIR

a. **Stationary Source Emissions – Describe the type, sources, quantities, and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used to assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.**

   AUAR Guidance: This item is not applicable to an AUAR. Any stationary air emissions source large enough to merit environmental review requires individual review.

   Not applicable to an AUAR.

b. **Vehicle Emissions – Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g., traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.**

   AUAR Guidance: Although the MPCA no longer issues Indirect Source Permits, traffic-related air quality may still be an issue if the analysis in Item 18 indicates that development would cause or worsen traffic congestion. The general guidance from the EAW form should still be followed. Questions about the details of air quality analysis should be directed to MPCA staff.

   The Minnesota Department of Transportation (MnDOT) has developed a screening method designed to identify intersections that will not cause a carbon monoxide (CO) impact above

state standards. MnDOT has demonstrated that even the 10 highest traffic volume intersections in the Twin Cities do not experience CO impacts.[24] Therefore, intersections with traffic volumes lower than these 10 highest intersections will not cause a CO impact above state standards. MnDOT's screening method demonstrates that intersections with total daily approaching traffic volumes below 82,300 vehicles per day will not have the potential for causing CO air pollution problems. None of the intersections in the study area exceed the criteria that would lead to a violation of the air quality standards.

c. Dust and Odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under Item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

AUAR Guidance: Dust and odors need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any dust control ordinances in effect.

The proposed development may generate temporary fugitive dust emissions during construction. The City of Chaska does not regulate dust emissions. Dust emissions can be controlled by sweeping, watering, sprinkling, as appropriate or as prevailing weather and soil conditions dictate. Dust emissions are not anticipated during operations as all ground surfaces will either be impervious or vegetated.

18. GREENHOUSE GAS (GHG) EMISSIONS/CARBON FOOTPRINT

a. GHG Quantification – For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.

About Greenhouse Gases (GHGs)

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes

[24] Minnesota Department of Transportation. *MnDOT CO Hot Spot Screening Method.* Available at: https://www.dot.state.mn.us/project-development/subject-guidance/air-quality/process.html#:~:text=The%20Twin%20Cities%20area%20has,carbon%20monoxide%20(CO)%20violations.

through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.[25]

Project Related GHG Emissions

This section estimates emissions of the following GHGs for each scenario:

- Carbon dioxide (CO_2)
- Nitrous oxide (N_2O)
- Methane (CH_4)

Note that an analysis of existing conditions was not completed. The study area currently contains several single-family homes and farmstead buildings; however, the existing greenhouse gas emissions from the study area is considered negligible. The projected GHG emissions are provided on an average annual basis using the CO_2 equivalent (CO_2e) and include the proposer's best estimate of average annual emissions over the proposed life/design service life of future development. The estimates also include emissions from the construction and operating phases of the scenario. Emissions were estimated using the Minnesota Environmental Quality Board's Climate Calculator Tool[26] and are summarized in Table 18, Table 19, and Appendix C by project phase (i.e., construction and operations) and source type (e.g., material inputs, building energy consumption).

Construction emissions for the two proposed scenarios are based on length of construction and are from material inputs, transport of those material inputs, employee commuting, construction equipment, land use change, and construction waste.

Table 18: Construction Emissions

Emissions Source	Scenario 1 Project-Related CO_{2e} Emissions (total)	Scenario 2 Project-Related CO_{2e} Emissions (total)
Material inputs	85,554.92	128,332.38

[25] U.S. EPA. *Overview of Greenhouse Gases*. January 2025. Available at https://www.epa.gov/ghgemissions/overview-greenhouse-gases

[26] Minnesota Environmental Quality Board. *Climate assessments*. Available at https://www.eqb.state.mn.us/environmental-review/climate-assessments.

Emissions Source	Scenario 1 Project-Related CO_{2e} Emissions (total)	Scenario 2 Project-Related CO_{2e} Emissions (total)
Transportation of material inputs	2,199.26	3,298.89
Employee commuting	18,291.17	27,581.35
Construction equipment	13,110.44	13,110.44
Land use change	39.70	48.49
Construction waste	135.58	203.38
Total	**119,331.07**	**172,574.92**

Table 19: Annual Operational Emissions

Emissions Source	Scenario 1 Proposed CO_{2e} Emissions (tons/year)[27]	Scenario 2 Proposed CO_{2e} Emissions (tons/year)
Building energy consumption	71,400.38	107,100.58
HFC leakage	231.17	346.75
On-road vehicles	2,162.13	3,243.19
Treatment of waste off-site	869.33	1,304.00
Total	**74,663.01**	**111,994.51**

b. GHG Assessment

i. Describe any mitigation considered to reduce the project's GHG emissions.

The following are potential design strategies and sustainability measures that are under consideration for both scenarios proposed development to reduce emissions for both scenarios:

- Create new open space with native vegetation and habitat
- Expand urban tree planting
- Require energy efficient appliances
- On-site EV charging

Implementation of the above strategies will be evaluated on a case-by-case basis based on code requirements, feasibility, availability of materials, schedule, and tenant considerations.

ii. Describe and quantify reductions from selected mitigation, if proposed to reduce the project's GHG emissions. Explain why the selected mitigation was preferred.

[27] Note: Scenario 1 and 2 estimated annual emissions are based on the EQB's recommended Climate Calculator Tool and is based on a typical office/warehouse end user.

The following are potential reduction strategies that could be implemented as part of future development within the study area. Note: these are high level strategies and quantification of reduction is not known at this phase.

- By creating new vegetated areas from previously cropped land, the project would sequester carbon dioxide that would not have been captured without the land conversion. Trees and other vegetation also incorporate carbon into their biomass when growing.
- Tree planting can provide shade, which reduces building cooling demands. When this demand is reduced, it also reduces energy consumption and corresponding GHG emissions.
- Selecting energy-efficient appliances reduces energy consumption and corresponding GHG emissions.

The potential mitigation listed in Item 18.b.i. was selected to comply with best management practices for new construction and reduce GHG emissions where practicable during operations.

iii. Quantify the proposed project's predicted net lifetime GHG emissions (total tons per number of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

The Next Generation Energy Act requires the state to reduce greenhouse gas emissions in the state by 80 percent between 2005 and 2050, while supporting clean energy, energy efficiency, and supplementing other renewable energy standards in Minnesota. The MPCA's biennial GHG emissions reduction report from 2021 identifies strategies for reducing emissions in the three economic sectors with the highest emissions – transportation, electricity generation, and agriculture, forestry, and land use.

The expected lifespan of the project is 50 years; this equates to a total estimated 5,121,670.58 $CO2_e$ metric tons over the lifetime of the development under Scenario 1 and 7,676,084.18 $CO2_e$ metric tons over the lifetime of the development under Scenario 2 (including both construction and operations phases). The proposer will evaluate implementing the sustainability measures listed in Item 18.b.i to reduce operational emissions to the extent practicable. The proposed development will be built in compliance with state regulations and city building codes.

19. NOISE

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area; 2) nearby sensitive receptors; 3)

conformance to state noise standards; and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

AUAR Guidance: Construction noise need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any construction noise ordinances in effect.

If the area will include or adjoin major noise sources, a noise analysis is needed to determine if any noise levels in excess of standards would occur, and if so, to identify appropriate mitigation measures. With respect to traffic-generated noise, the noise analysis should be based on the traffic analysis of Item 18.

Existing Noise

The AUAR study area is currently single family residential, agricultural, and undeveloped land. Surrounding nearby receptors are single family residential homes surrounding the study area.

The existing ambient noise sources in the study area consist mainly of the surrounding roadways.

Construction Noise

As stated in the AUAR guidelines, construction noise need not be addressed unless there is some unusual reason to do so. No unusual circumstances have been identified that would necessitate a detailed construction noise analysis. The City of Chaska regulates the hours of operation for construction equipment.[28]

Traffic Generated Noise

A sound increase of 3 dBA is barely noticeable by the human ear, a 5 dBA increase is clearly noticeable, and a 10 dBA increase is heard as twice as loud. For example, if the sound energy is doubled (i.e., the amount of traffic doubles), there is a 3 dBA increase in noise, which is just barely noticeable to most people. On the other hand, if traffic increases by a factor of 10, the resulting sound level will increase by about 10 dBA and be heard approximately twice as loud.

Traffic volumes in the project area are either on roadways that do not have receivers that are sensitive to noise, or the traffic levels attributable to the project are well below the amount that would generate a sound increase that could be noticeable.

The change in traffic noise levels is not anticipated to be readily perceptible.

Operational Noise

The MPCA regulates mechanical noise associated with building operation. As site development progresses, developers would be responsible for assessing whether operational noise exceeds established noise standards which may require studies of ambient and proposed noise conditions and then mitigation for compliance. All future development will be required to comply with these requirements. There are no operational noise concerns for the proposed development under either scenario.

[28] City of Chaska. *Municipal Code*. Available at https://chaska.municipalcodeonline.com/book?type=ordinances#name=6.12_Noise_And_Odors

20. TRANSPORTATION

a. Describe traffic-related aspects of project construction and operation. Include 1) existing and proposed additional parking spaces; 2) estimated total average daily traffic generated; 3) estimated maximum peak hour traffic generated and time of occurrence; 4) source of trip generation rates used in the estimates; and 5) availability of transit and/or other alternative transportation modes.

The information listed below summarizes the findings of the Big Woods Business Park Traffic Impact Analysis (TIA). A brief description of the roadways that make up the adjacent network is provided below.

US 212 is a primarily east-west freeway which locally runs in the north-south direction, forming the eastern boundary of the AUAR area. It is a four-lane divided freeway and is classified by the Metropolitan Council as a Principal Arterial. According to the MnDOT Traffic Mapping Application, the roadway has an Annual Average Daily Traffic (AADT) of 22,650 vehicles per day (vpd) south of CSAH 10, as of 2024. The posted speed limit is 65 miles per hour (mph).

CSAH 44 (Big Woods Boulevard) is a two-lane undivided roadway that runs east-west. This roadway bisects the AUAR area, providing primary access to the study area parcels. The roadway is classified by the Met Council as an A-Minor Expander east of CSAH 11 (Jonathan Carver Parkway) and a Major Collector west of CSAH 11. According to the MnDOT Traffic Mapping Application, the roadway has an AADT of 3,350 vpd west of CSAH 61 (2018) and 1,060 vpd west of CSAH 11 (2025). Directly to the east of the site, Big Woods Boulevard includes a partial interchange with a northbound entrance ramp and southbound exit ramp from US 212. Big Woods Boulevard also connects directly to downtown Chaska east of the AUAR area. There is no posted speed limit along CSAH 44 near the study area.

CSAH 11 (Johnathan Carver Parkway) is a north-south roadway that is primarily two-lanes undivided but widens to four-lanes divided south of CSAH 61. The roadway is classified by the Met Council as an A-Minor Connector. Approximately 1500’ to the south of the AUAR area, Johnathan Carver Parkway includes a full access interchange with US 212. According to the MnDOT Traffic Mapping Application, the AADT of CSAH 11 ranges from 5,100 vpd north of CSAH 61 to 18,100 south of US 212, as of 2025. The posted speed limit is 55 mph.

CSAH 61 (Chaska Boulevard) is a four-lane undivided east-west roadway in the study area. CSAH 61 terminates at CSAH 11 (Jonathan Carver Parkway), but the roadway continues west of CSAH 11 as Levi Griffin Road. CSAH 61 is classified by the Met Council as an A-Minor Reliever while Levi Griffin Road is classified as a local road. According to the MnDOT Traffic Mapping Application, CSAH 61 has an AADT of 5,700 vpd, as of 2022. Chaska Boulevard connects directly to downtown Chaska to the east. The posted speed limit is 50 mph.

CSAH 10 (Engler Boulevard) is a primarily two-lane east-west undivided roadway which widens to four lanes near the US 212 interchange. The roadway is classified by the Met Council as an A-Minor Connector west of CSAH 11 and an A-Minor Expander east of CSAH 11. According to the

MnDOT Traffic Mapping Application, the roadway has an AADT of 14,500 vpd west of US 212, as of 2025. The posted speed limit is 55 mph.

Chaska Creek Boulevard is a four-lane divided north-south roadway that provides access to planned industrial/mixed-use developments north of the AUAR area. At the approach of Creek Road, the roadway narrows to two-lanes undivided. The roadway is classified by the MnDOT Functional Classifications as a local road. AADT data is unavailable. There is no posted speed limit. The roadway becomes Clover Ridge Drive north of CSAH 10.

Creek Road is a two-lane primarily east-west undivided roadway. The roadway is classified by the Met Council Functional Classifications as a Major Collector. According to the MnDOT Traffic Mapping Application, the roadway has an AADT of 2,450 as of 2021. The posted speed limit is 40 mph.

Parking

The development will adhere to the off-street parking standards listed in section 15.27.030 of the City of Chaska's municipal code.

Trip Generation

The amount of traffic generated by the proposed development was calculated using data from the Institute of Transportation Engineer's *Trip Generation Manual, 12th Edition*. The trip generation for both scenarios was calculated using Land Use Code (LUC) 130 – Industrial Park for the business park area, and LUC 820 – Shopping Center for the commercial areas. Trip generation totals for each scenario at buildout are shown below in Table 20.

Table 20: Estimated Buildout Trip Generation

Scenario	AM Peak Hour			PM Peak Hour			Daily
	Total	In	Out	Total	In	Out	
Scenario 1	572	414	158	1,066	435	631	12,102
Scenario 2	858	622	238	1,599	653	947	18,153

Transit

Currently, there is a Southwest Transit Station approximately 1 mile south of AUAR site. It is not anticipated that there will be significant change in transit usage.

Bike and Pedestrian Infrastructure

There are currently multi-use paths on most roadways in the study area. The City's bike and trail network plan identifies future off-street trails along CSAH 61 and along the major internal roadway connections throughout the development site. Public roadways throughout the site will be designed to improve pedestrian connectivity.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total

daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance.

AUAR Guidance: For AUAR reviews, a detailed traffic analysis will be needed, conforming to the MnDOT guidance as listed on the EAW form. The results of the traffic analysis must be used in the response to Items 16 and 17.

A Traffic Impact Analysis was completed as part of the AUAR because the trip generation is anticipated to exceed the 250-trip peak hour vehicle threshold. The detailed Big Woods Business Park TIA is included in Appendix D. Based on the findings of the TIA, the area's transportation network is expected to support development within the AUAR study area with mitigation. The TIA identified improvements that could be constructed to mitigate potential future traffic impacts associated with the development within the AUAR study area. Metrics for traffic analysis include intersection delay as measured by Level of Service (LOS) and queue lengths.

The intersections analyzed in the TIA are shown in Figure 17. In addition, operational analysis was conducted at four (4) potential site access points:

- Proposed right-in/right-out (side street stop) along CSAH 11 north of CSAH 44 ("Access A")
- Proposed full-movement access (roundabout) along CSAH 44 ("Access B")
- Proposed full-movement access (side street stop) along CSAH 11 north of CSAH 61 ("Access C")
- Proposed full-movement access (side street stop) along CSAH 61 ("Access D")

Based on the results of the TIA, the roadway network is anticipated to experience significant increases in delay in the long term due to background growth and development. The CSAH 11 interchange with US 212 is anticipated to be near capacity due to development south of US 212 and construction of a new interchange or improvements to the existing interchange may be required. Additionally, significant increases in delay are anticipated along CSAH 10.

Under Scenario 1 conditions, delays are generally anticipated to see a minor increase as a result of the proposed development. Turn lanes are expected to be required at some of the access points, but other intersections are generally not anticipated to experience major impacts. The proposed access configuration is sufficient for this scenario.

Under Scenario 2 conditions, delays are anticipated to see slightly higher increases but are still not anticipated to cause significant operational issues in the network. The proposed access configuration is sufficient for this scenario.

Table 21: Existing and Projected Intersection LOS

Intersection	Existing LOS	No-Build LOS		Scenario 1 LOS		Scenario 2 LOS	
	2025	2030	2045	2030	2045	2030	2045
AM Peak Hour							
CSAH 10 & US 212 Eastbound Ramps	B	B	C	B	C	B	C
CSAH 10 & US 212 Westbound Ramps	B	B	C	B	C	B	C
CSAH 10 & Chaska Creek Boulevard	C	C	D	B	D	B	D
CSAH 10 & CSAH 11	C	B	C	B	C	B	C
Chaska Creek Boulevard & Creek Road	A	A	A	A	A	A	A
CSAH 44 & US 212 Eastbound Entrance Ramp	A	A	A	A	A	A	B
CSAH 44 & US 212 Westbound Exit Ramp	A	A	A	A	A	A	A
CSAH 44 & CSAH 11	A	A	A	A	B	A	B
CSAH 11 & CSAH 61	B	B	B	B	B	B	B
CSAH 11 & US 212 Westbound Ramps	B	B	B	B	B	B	B
CSAH 11 & US 212 Eastbound Ramps	B	D	**F** / A	C	C	C	C
CSAH 11 & Access A	-	-	-	A	A	A	A
CSAH 44 & Access B	-	-	-	A	A	A	A
CSAH 11 & Access C	-	-	-	-	A	-	A
CSAH 61 & Access D	-	-	-	-	A	-	A
PM Peak Hour							
CSAH 10 & US 212 Eastbound Ramps	B	B	B	B	B	B	B

Intersection	Existing LOS	No-Build LOS		Scenario 1 LOS		Scenario 2 LOS	
	2025	2030	2045	2030	2045	2030	2045
CSAH 10 & US 212 Westbound Ramps	B	B	C	B	C	B	C
CSAH 10 & Chaska Creek Boulevard	B	B	C	B	C	B	C
CSAH 10 & CSAH 11	C	B	C	C	C	C	C
Chaska Creek Boulevard & Creek Road	A	A	A	A	A	A	A
CSAH 44 & US 212 Eastbound Entrance Ramp	A	A	A	A	A	A	**B**
CSAH 44 & US 212 Westbound Exit Ramp	A	A	A	A	A	A	C
CSAH 44 & CSAH 11	A	A	B	A	B	A	C
CSAH 11 & CSAH 61	B	B	C	B	C	B	C
CSAH 11 & US 212 Westbound Ramps	C	C	C	C	D	C	D
CSAH 11 & US 212 Eastbound Ramps	A	A	A	A	B	A	B
CSAH 11 & Access A	-	-	-	A	A	A	A
CSAH 44 & Access B	-	-	-	A	A	B	C
CSAH 11 & Access C	-	-	-	-	A	-	A
CSAH 61 & Access D	-	-	-	-	A	-	A

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

The following provides a summary of the mitigation improvements that were identified as part of the traffic analysis for the Big Woods Business Park development.

Existing (2025) Conditions

- No Mitigation Necessary

Opening Year (2030) No-Build Conditions

- No Mitigation Necessary

Opening Year (2030) Build Scenario 1 Conditions

- Install a dedicated northbound right turn lane and provide side street stop control at CSAH 11 & Access A.
- Install a single lane roundabout at CSAH 44 & Access B.
- As parcels begin to develop on the AUAR area, install sidewalk and trail connections to connect to existing pedestrian and bicycle infrastructure.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length

Opening Year (2030) Build Scenario 2 Conditions

- Install a dedicated northbound right turn lane and provide side street stop control at CSAH 11 & Access A.
- Install a single lane roundabout at CSAH 44 & Access B.
- As parcels begin to develop on the AUAR area, install sidewalk and trail connections to connect to existing pedestrian and bicycle infrastructure.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length.

Design Year (2045) No-Build Conditions

- Install dual northbound right turn lanes at CSAH 11 & US 212 Eastbound Ramps.
- Extend the southbound right turn lane at CSAH 10 & US 212 Westbound Ramps to 450’.
- Extend the dedicated southbound left turn lane at CSAH 10 & Chaska Creek Boulevard to 400’.
- Extend the westbound left turn lane at CSAH 11 & US 212 Westbound Ramps to 550’.

Design Year (2045) Build Scenario 1 Conditions

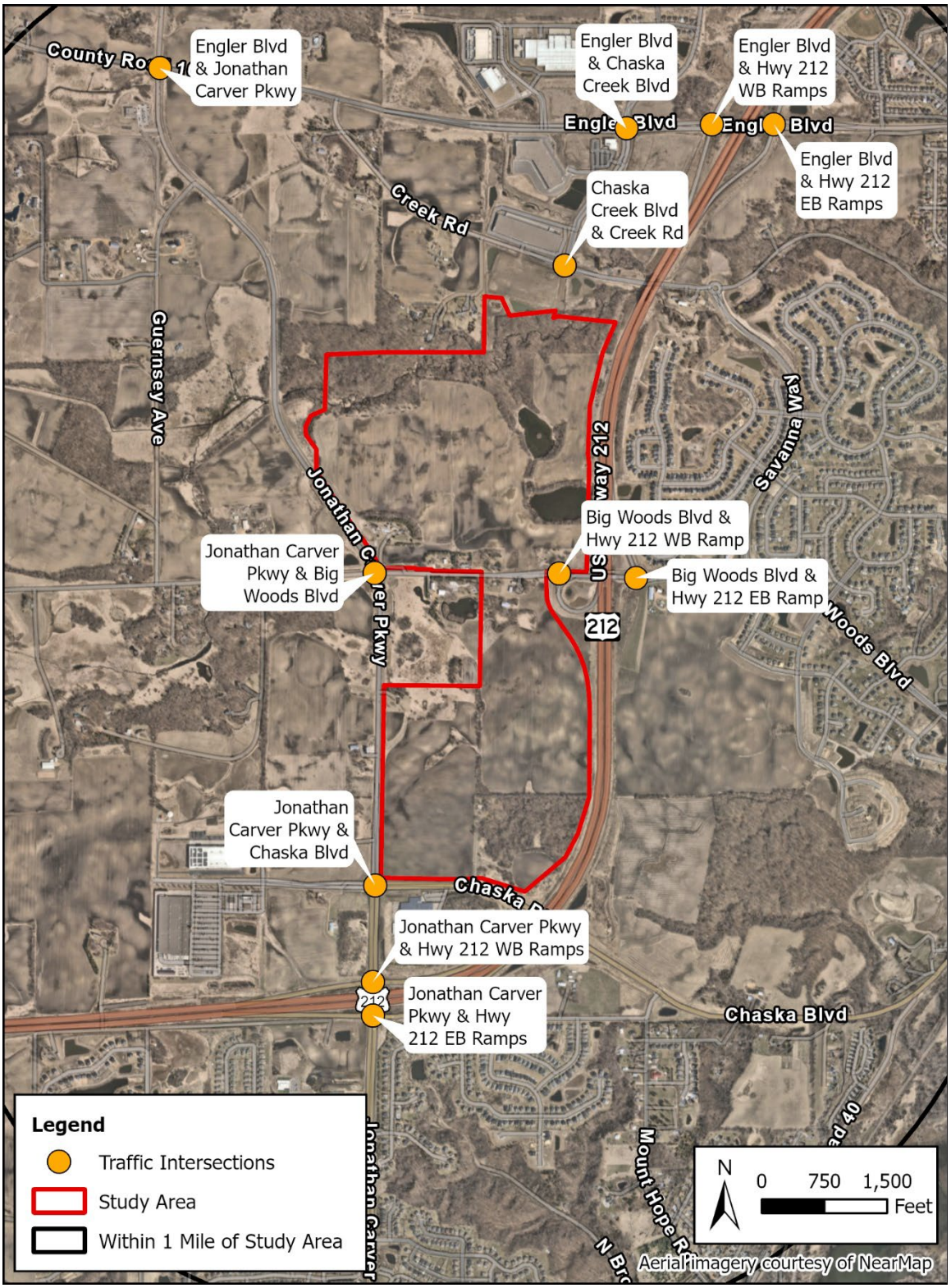
- All modifications from Deign Year (2045) No-Build & Opening Year (2030) Scenario 1 Conditions.
- Install a dedicated eastbound left turn lane at CSAH 61 & Access D.
- Side-street stop control is adequate at accesses A, C, & D.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length.

Design Year (2045) Build Scenario 2 Conditions

- All modifications from Deign Year (2045) No-Build & Opening Year (2030) Scenario 2 Conditions.
- Install a dedicated eastbound left-turn lane at CSAH 61 & Access D.
- Install a dedicated southbound left-turn lane at CSAH 11 & Access C.
- Side-street stop control is adequate at accesses A, C, & D.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length.

Note that the overall roadway network in the area has capacity to accommodate the AUAR development in Scenarios 1 and 2. Analysis of the potential creek crossing which would connect to the Creek Road & Chaska Creek Boulevard roundabout indicated that such a connection is not anticipated to significantly improve traffic operations. As the area develops further, additional traffic analysis should be completed to determine if such a connection and/or completion of the CSAH 44 interchange are appropriate.

Figure 17: Traffic Study Intersections



21. CUMULATIVE POTENTIAL EFFECTS

AUAR Guidance: Because the AUAR process by its nature is intended to deal with cumulative potential effects from all future developments within the AUAR area, it is presumed that the responses to all items on the EAW form automatically encompass the impacts from all anticipated developments within the AUAR area.

However, the total impact on the environment with respect to any of the items on the EAW form may also be influenced by past, present, and reasonably foreseeable future projects outside of the AUAR area. The cumulative potential effect descriptions may be provided as part of the responses to other appropriate EAW items, or in response to this item.

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Cumulative effects are defined as the "effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects."[29]

Development of the AUAR area is anticipated to potentially start in 2026 and would occur over several years. Full buildout is assumed to occur over 5-15 years and would be dependent on market conditions. The geographic areas considered for cumulative effects are those areas adjacent to the study area and generally a combination of the study areas defined in the sections above, and the timeframe considered includes projects that would be constructed in the reasonably foreseeable future (by 2035) by other private and public entities that have made future project plans and timelines publicly available.

b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.

There is one reasonably foreseeable project that may interact with the environmental effects of the development scenarios. The Southwest Growth Area Housing Development in Dahlgren Township is located approximately 1.5 miles southwest of the AUAR study area.

An AUAR is currently in progress for the Southwest Growth Area Housing development. Two scenarios are proposed for evaluation within the AUAR. Scenario 1 is based on the current Carver Comprehensive Plan housing units per acre requirements. This Scenario currently includes an estimated 5,076 housing units built on approximately 492 acres. Scenario 2 contains an overall denser housing units per acre with an estimated 6,078 housing units built on 978

[29] Minnesota Rules, part 4410.0200, subpart 11a

acres. Both scenarios contain approximately 296 acres of preserved open space and 65 acres of parks.

c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.

Based on the information obtained for the Southwest Growth Area Housing Development and summarized in Item 21.b., potential cumulative effects may include stormwater, wastewater/water appropriation, traffic, and land conversion. The potential for adverse cumulative effects is described for each of these items in the following paragraphs.

Stormwater

Stormwater travels along the ground surface in a different manner once lawn/grass is replaced by impervious surfaces including building rooftops and paved parking areas. Future business park and commercial development projects within the AUAR would increase impervious surface area with the development of buildings, parking lots, and roadways. These projects along with the additional nearby development would be required to meet stormwater management requirements, including installation of BMPs, falling under the authority of the MPCA, City of Chaska and CCWMO. Therefore, adverse cumulative water quality impacts are not anticipated.

Wastewater and Water Appropriation

Item 12.b.i and iii outlines the wastewater generation and water demand estimates that would be associated with the development scenarios described in this AUAR. It is anticipated that the City's current water supply and sewer system has sufficient capacity to accommodate the proposed development scenarios for this AUAR. Other proposed future developments, such as the Southwest Growth Area Housing Development Project, would increase the overall demand on the respective city's water supply and sewer system. Any future development would need to provide a detailed projection of wastewater generation, and water demands to the city to determine if any additional infrastructure or water appropriations would be required and individually mitigated for.

Traffic

A traffic analysis for the development scenarios studied in this AUAR was completed and identifies mitigation strategies to improve traffic movement as described in Item 20 (Transportation) and Appendix D. Future developments in the surrounding areas that are anticipated to increase traffic congestion would be required to compete a traffic impact study and identify mitigation measures to address the impacts. Therefore, adverse cumulative impacts related to traffic congestion are not anticipated.

Land Conversion

The proposed development scenarios in this AUAR would convert agricultural land to business park land use. Other proposed future developments such as the Southwest Growth Area Housing Development project would also convert agricultural land to other land uses. The City of Chaska, through their land use policies and zoning requirements, regulates future

development and can protect agricultural land from future development as appropriate. Adverse cumulative impacts on agricultural land are not anticipated.

22. OTHER POTENTIAL ENVIRONMENTAL EFFECTS

AUAR Guidance: If the project may cause any additional environmental effects not addressed by Items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

Additional Environmental Effects

There are no other potential environmental effects that have not been addressed in preceding sections.

MITIGATION PLAN

This Mitigation Plan is submitted as part of the AUAR to provide reviewers and regulators with an understanding of the actions that are advisable, recommended, or necessary to protect the environment and minimize potential impacts by the proposed development scenarios. This Mitigation Plan will be revised and updated based on comments received during the AUAR comment period.

This Mitigation Plan is intended to satisfy the AUAR rules that require the preparation of a mitigation plan that specifies measures or procedures that will be used to avoid, minimize, or mitigate the potential impacts of development within the AUAR study area. Although mitigation strategies are discussed throughout the AUAR document, this plan will be formally adopted by the RGU as their action plan to prevent potentially significant environmental impacts.

The primary mechanism for mitigation of environmental impacts is the effective use of ordinances, rules, and regulations. The plan does not modify the regulatory agencies' responsibilities for implementing their respective regulatory programs nor create additional regulatory requirements. The plan specifies the legal and institutional arrangements that will assure that the adopted mitigation measures are implemented.

In addition to the anticipated permits and approvals listed in Table 6, the mitigation measures developed in the AUAR process are outlined in Table 22. The mitigation items identified are regulatory requirements and/or mitigation measures that reduce the level of potential impact of development within the study area. The plan is formatted consistently with the sections of the AUAR for ease of reference.

Table 22: Mitigation Plan for Scenario 1 and 2

Resource Area	Mitigation
Climate Adaption and Resilience	Water efficient irrigation design will be considered for any landscape irrigation systems.

Resource Area	Mitigation
	Energy efficient building shells, appliances, equipment and lighting will be incorporated into the building design.
	Proposed trees and landscaping will reduce runoff and mitigate heat island effect.
	Enhanced stormwater ponds, which serve as green infrastructure, will be implemented for both scenarios.
Land Use	The city will annex the current Dahlgren Township parcels prior to development and incorporate them into an applicable zoning district and overlay districts, subject to land use permit review.
	An amendment to the 2040 Comprehensive Plan would be needed for both scenarios to accommodate development within the Chaska Green Belt. The comprehensive plan amendment will also establish Metropolitan Urban Service Area (MUSA) staging for this area.
	Both scenarios would require a zoning change to Business Park use.
	Future development within the study area will need to comply with the shoreland overlay district requirements for shorelands of tributary watercourses.
Geology, Soils, and Topography	A National Pollutant Discharge Elimination System (NPDES) and Stormwater Pollution Prevention Program Construction Stormwater Permit (SWPPP) will need to be obtained prior to any earthwork or grading activities within the AUAR study area.
	Where required, slope stabilization will be provided by means of vegetation establishment, erosion control blankets, or other standard methods of erosion and sediment control. The proposed development within the AUAR study area will require compliance with the City of Chaska's erosion and sediment control standards as well as stormwater management requirements.
Water Resources - Stormwater	Infrastructure will be built within the AUAR study area to convey stormwater to stormwater management areas (BMPs) to help achieve the appropriate water quality treatment. Design of the site and stormwater management facilities will be used to reduce the risk of flooding in the AUAR study area. Bioretention benches will be used to improve water quality and reduce stormwater runoff in the project vicinity.
	Maintenance and monitoring of the stormwater management areas will be performed to ensure long term effectiveness of the facilities.
	Best management practices pertaining to stormwater management will be adhered to during construction.
	Stormwater Best Management Practices (BMP) shall meet criteria for Minnesota Pollution Control Agency (MPCA) water quality requirements.
	Stormwater BMPs shall be designed to meet the City's criteria for rate control as well as runoff volume reduction and will be designed to maintain stormwater runoff rates at or below the level of existing conditions.

Resource Area	Mitigation
	The use of native plants will be considered for landscaping and stormwater features to absorb water, reduce water demand for irrigation, and protect water resources from pollution.
	The impact of more severe precipitation events on offsite flows will be evaluated with conveyance and/or storage of offsite flow.
	CCWMO requirements will be adhered to regarding stormwater-related impacts upstream and downstream of the site.
Water Resources - Surface Water	Avoidance measures will be taken to avoid impacts to the wetlands within the AUAR study area to the extent practicable. As design plans advance and if impacts to wetlands are found necessary, the project proposer will obtain appropriate permits and purchase wetland banking credits. Buffers will also be installed around wetlands to protect water quality from adjacent development.
	Future development would need to comply with the shoreland overlay district requirements which applies to the unnamed watercourse in the northern portion of the site.
	If any potential impacts are proposed to FEMA 100-Year Floodplains as part of development within the AUAR study area, the applicable City of Chaska and CCWMO approvals will be obtained.
	Utility crossings of the unnamed stream within the AUAR study area may require additional permitting, to be determined in future design stages.
Water Resources – Water Appropriation	Extend water infrastructure to reach the proposed development.
	The presence or absence of unverified wells will be confirmed and any existing wells will be sealed according to MDH requirements.
Water Resources - Wastewater	Extend wastewater infrastructure to reach the proposed development.
Contamination/ Hazardous Waste	Ensure compliance with applicable laws, rules, and ordinances related to the management of solid and hazardous waste as required by Minnesota Statutes 2020, section 473.811, subdivision 5c.
	Coordinate with the MPCA regarding the required plans, material handling, and disposal.
	Development would both generate construction-related waste materials such as wood, packaging, excess materials, and other wastes, which would be either recycled or disposed in the proper facilities.
	A Phase I/II Environmental Site Assessment (ESA) should be completed prior to construction and coordinate with the MPCA on safe handling and disposal of any contamination and hazardous materials found on the site prior to and during construction.
	The placement of any potential storage of hazardous materials and wastes would not be in floodplain areas.
Fish, Wildlife, Plant Communities, and	Invasive species will be controlled during site construction. Additionally, appropriate measures will be taken to control the spread of invasive species during construction and landscaping:

Resource Area	Mitigation
Sensitive Ecological Resources	• Inspecting construction equipment and removing any visible plant, seeds, mud, dirt clods, and animals when arriving and leaving a site. • Using certified weed-free products such as weed-free seed or hay whenever possible. • Using mulch, soil, gravel, etc., that is free of invasive species whenever possible. • Inspecting soil and plant material during planting for signs of invasive species and removing or destroying the invasive species or the plant and associated soil if the invasive species cannot be separated out. • Native and drought-tolerant species will be utilized in landscaped areas.
	Tree clearing activities should be restricted to when tricolored and northern long-eared bats are not likely to be present, between November 1 to March 31.
	Wildlife friendly erosion control methods will be utilized within the study area to minimize impacts to wildlife using the site during construction.
	The use of native plant species, including flowering plants, in seed mixes may be used to promote pollinator friendly habitat within the study area.
	Climate-appropriate native plantings and stormwater BMPs will provide suitable habitat for small mammals, insects, and bird species.
	Regarding the calcareous fen in the vicinity of the study area, coordination should occur with the DNR to ensure compliance under the Wetland Conservation Act (WCA).
	If future development in the area proposes impacts near or within the mapped RESA in the northern portion of the study area, a survey may be required. If impacts are proposed to the field surveyed resource, avoidance and minimization measures would be discussed with the DNR to identify next steps.
Historic Properties	An archeological survey is currently in process and will be completed prior to construction.
	If future development requires applying for a Section 404 permit, the project proposer must also consider potential impacts on historic properties under Section 106, which requires consultation with the SHPO and other relevant parties to identify any potential mitigation needed.
Visual	Lighting practices will be selected to address known ecological concerns and prevent avoidable impacts to insects, wildlife, rare plants, and adjacent natural areas. Guidance from the USFWS that recommends a lighting system that minimizes uplight and backlight would be adhered to the extent practicable.
Air	Fugitive dust emissions from construction will be controlled by sweeping, watering, sprinkling, as appropriate or as prevailing weather and soil conditions dictate.

Resource Area	Mitigation
GHG Emissions/Carbon Footprint	The following are potential design strategies and sustainability measures that are under consideration for the proposed development to reduce emissions for both scenarios: • Create new open space with native vegetation and habitat • Expand urban tree planting • Require energy efficient appliances
	The developer will also consider implementation of items such as energy efficient building shells, solar ready design, EV charging infrastructure, and incorporating solar as an accessory use to allow for in-boundary energy generation.
Noise	Construction activities may result in temporarily elevated noise levels. To the extent possible, construction activities will be conducted to minimize noise levels and nighttime construction activities. The City regulates the hours of operation for construction equipment.
Transportation	Install a dedicated northbound right turn lane and provide side street stop control at CSAH 11 & Access A.
	Install a single lane roundabout at CSAH 44 & Access B.
	As parcels begin to develop on the AUAR area, install sidewalk and trail connections to connect to existing pedestrian and bicycle infrastructure.
	Install dual northbound right turn lanes at CSAH 11 & US 212 Eastbound Ramps.
	Extend the southbound right turn lane at CSAH 10 & US 212 Westbound Ramps to 450'.
	Extend the dedicated southbound left turn lane at CSAH 10 & Chaska Creek Boulevard to 400'.
	Extend the westbound left turn lane at CSAH 11 & US 212 Westbound Ramps to 550'.
	Install a dedicated eastbound left turn lane at CSAH 61 & Access D.
	Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250' in length.
	Scenario 2 ONLY: Install a dedicated southbound left-turn lane at CSAH 11 & Access C.
	Scenario 1 and 2: Overall roadway network in the area has capacity to accommodate the AUAR development in Scenarios 1 & 2. Analysis of the potential creek crossing which would connect to the Creek Road & Chaska Creek Boulevard roundabout indicated that such a connection is not anticipated to significantly improve traffic operations. As the area develops further, additional traffic analysis should be completed to determine if such a connection and/or completion of the CSAH 44 interchange are appropriate.

APPENDIX A: WETLAND INFORMATION

- Minnesota WCA NOD – Big Woods Blvd (6/6/2025)
- Minnesota WCA NOD – Chaska Club West (5/17/2022)
- Minnesota WCA NOD – Raser Properties (7/27/2022)

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Chaska	**County:** Carver
Applicant Name: Scannell Properties	**Applicant Representative:** Jake Kurth
Project Name: Big Woods Blvd	**LGU Project No. (if any):** 193807390
Date Complete Application Received by LGU: 4/25/25	
Date of LGU Decision: 6/6/25	
Date this Notice was Sent: 6/6/25	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:

Wetland Replacement Type: ☐ Project Specific Credits:
☐ Bank Credits:

Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☐ Approve ☐ Approve w/Conditions ☐ Deny ☒ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied

Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☒ Attachment(s) (specify): Figure 1. Project Location; Figure 3. Delineated Resource Map
☒ Summary: The wetland delineation was reviewed in the field by the Wetland Conservation Act Technical Evaluation Panel on May 29, 2025. The boundaries as they appeared in the field and provided on Figure 3 of the Wetland Delineation Report are approved.

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☒ Project Plan(s)/Descriptions/Reports (specify): Figure 1. Project Location; Figure 3. Delineated Resource Map

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Directoralong with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail.

The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to whythe decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☐ Yes[1] ☒ No

[1]*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

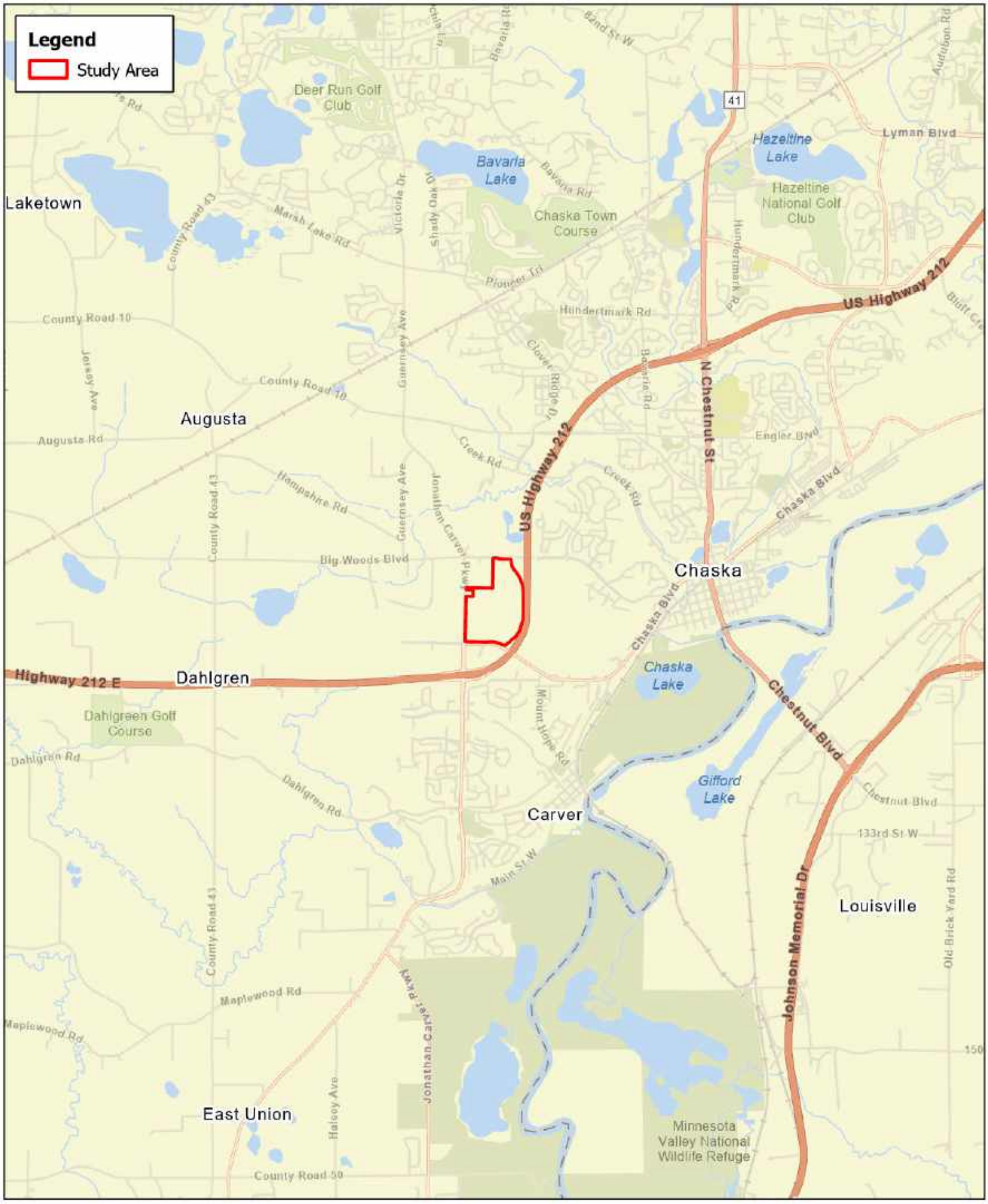
Required on all notices:

☒ SWCD TEP Member: Tyler Polster (tpolster@co.carver.mn.us) ☒ BWSR TEP Member: Alyssa Core (Alyssa.core@state.mn.us)
☐ LGU TEP Member (if different than LGU contact):
☒ DNR Representative: Taylor Huinker (DNR) Taylor.Huinker@state.mn.us
☒ Watershed District or Watershed Mgmt. Org.: Carver County WMO - Kristen Larson
☒ Applicant: See Above ☒ Agent/Consultant: Susan Mayer, Kimley Horn and Associates – susan.mayer@kimley-horn.com

Optional or As Applicable:

☐ Corps of Engineers:
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☒ Members of the Public (notice only): Eric Trelstad – eric@wetlandcreditagency.com ☐ Other:

Signature: 	**Date:** **6/6/25**

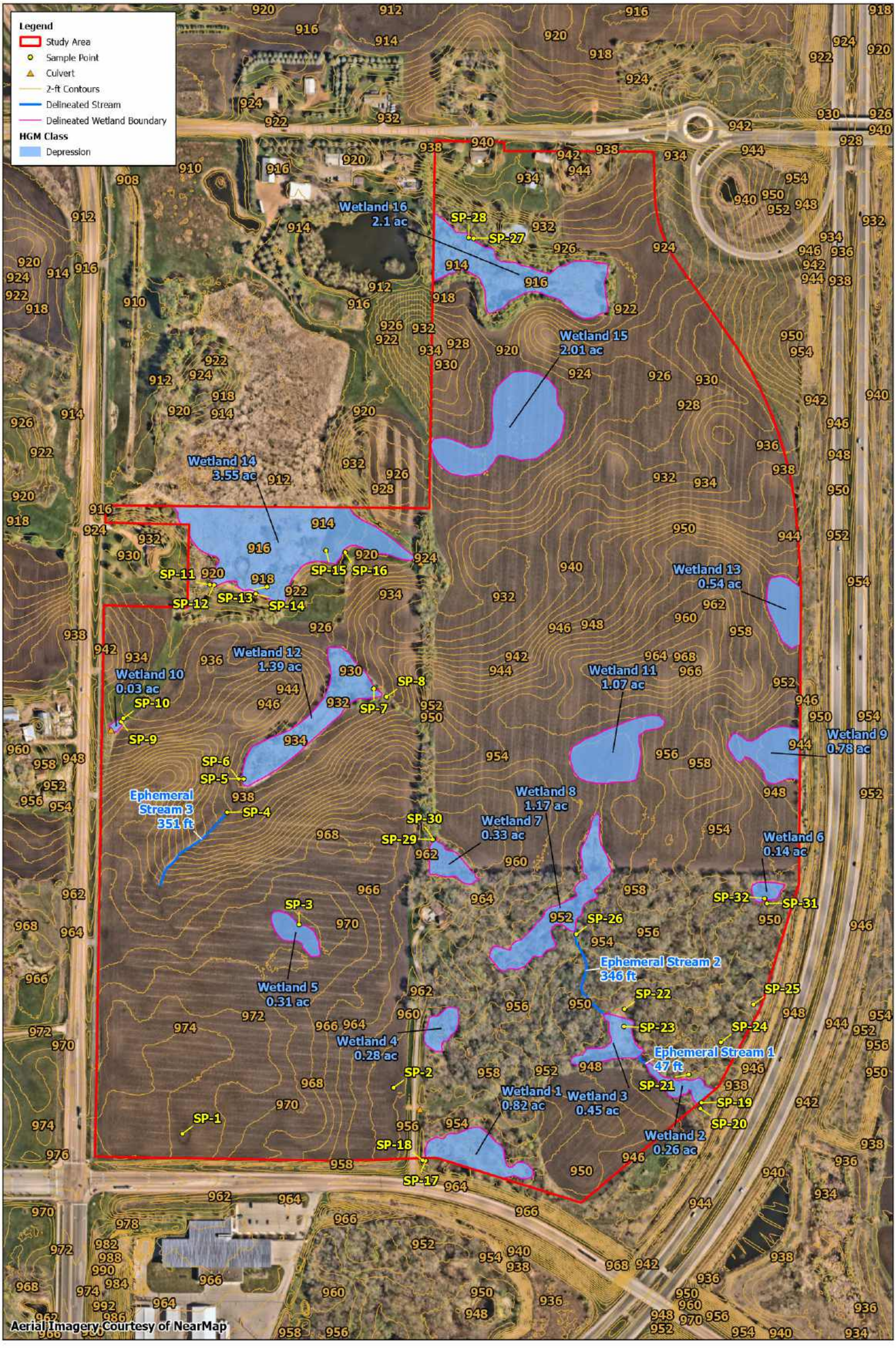


Kimley»Horn

N

0 0.5 1 Miles

Figure 1. Project Location
Scannell - Chaska
Chaska, MN



Kimley»Horn

N

0 150 300 Feet

Figure 3. Delineated Resources Map

Scannell - Chaska

Chaska, MN

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Chaska	**County:** Carver
Applicant Name: Oppidan	**Applicant Representative:** Jay Moore, jay@oppidan.com
Project Name: Chaska Club West	**LGU Project No. (if any):** 193805200
Date Complete Application Received by LGU: Outside Growing Season 2021 (Complete 4/22/22)	
Date of LGU Decision: 5/17/22	
Date this Notice was Sent: 5/17/22	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:

Wetland Replacement Type: ☐ Project Specific Credits:
☐ Bank Credits:

Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☐ Approve ☐ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions:

Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☒ Attachment(s) (specify): Approved Boundary
☒ Summary: Wetland delineation was reviewed in the field on May 10, 2022 with the applicant's agent. The wetland boundary has been approved as presented in the report and reviewed in the field. No changes were made.

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☐ Project Plan(s)/Descriptions/Reports (specify):

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☐ Yes[1] ☒ No

[1]*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

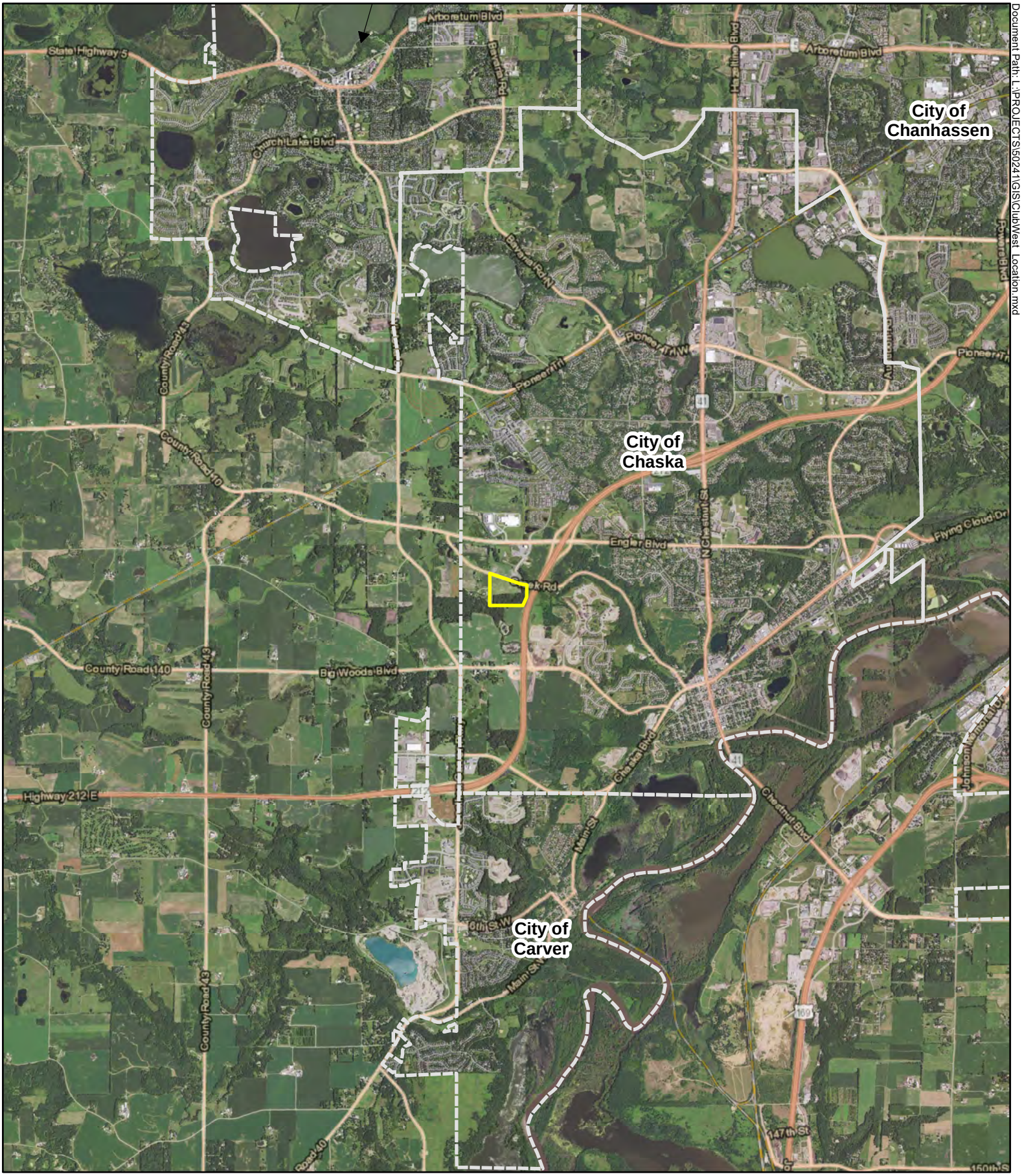
Required on all notices:

☒ SWCD TEP Member: Tom Genelin	☐ BWSR TEP Member: Ben Meyer
☐ LGU TEP Member (if different than LGU contact):	
☒ DNR Representative: Taylor Huinker (DNR) Taylor.Huinker@state.mn.us	
☒ Watershed District or Watershed Mgmt. Org.: Carver County WMO - Kristen Larson	
☒ Applicant: See Above	☒ Agent/Consultant: Todd Ullom – Sambatek, tullom@sambateck.com

Optional or As Applicable:

☐ Corps of Engineers:
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
☒ Members of the Public (notice only): Eric Trelstad – eric@wetlandcreditagency.com ☐ Other:

Signature:	**Date:** 5/17/22



Location Map

Chaska Club West Industrial

Chaska, Minnesota

Legend

- Property Boundaries
- City Boundaries

N W E S

0 1 Miles

Date: 10/18/2021

Project Number: 50241

Notes:

Sambatek

This map was created using Sambatek's Geographic Information Systems (GIS), it is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Sambatek is not responsible for any inaccuracies contained herein.

Document Path: L:\PROJECTS\50241\GIS\ClubWest_Location.mxd



Document Path: L:\PROJECTS\50241\GIS\ClubWest_Wetland.mxd

Wetland Delineation Map

Chaska Club West Industrial

Chaska, Minnesota

Legend

- Project Area
- Wetland Boundary
- Upland Sample Transect
- Wetland Sample Transect

N W E S

0 100 200

Scale in Feet

Date: 10/29/2021

Project Number: 50241

Notes:

Sambatek

This map was created using Sambatek's Geographic Information Systems (GIS), it is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Sambatek is not responsible for any inaccuracies contained herein.

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Chaska	**County:** Carver
Applicant Name: Timothy and Ann Raser, Walter and Rosette Raser, LP	**Applicant Representative:** Sambatek
Project Name: Raser Properties	**LGU Project No. (if any):** 193805200
Date Complete Application Received by LGU: 4/22/22	
Date of LGU Decision: **7/17/22**	
Date this Notice was Sent: **7/27/22**	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☐ Approve ☐ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions:

Decision-Maker for this Application: ☒ Staff ☐ Governing Board/Council ☐ Other:

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☐ Attachment(s) (specify):
☒ Summary: The Raser Wetland Delineation was reviewed in the field by the Wetland Conservation Act Technical Evaluation Panel with the applicants agent. There were several low areas that were being affectively drained by tiles within this site. The approved wetland delineation boundary is provided with this NOD as an attachment.

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☒ Approved Wetland Delineation

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☐ Yes[1] ☒ No

[1] *If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Tom Genelin- tgenelin@co.carver.mn.us ☒ BWSR TEP Member: Ben Carlson
☐ LGU TEP Member (if different than LGU contact):
☒ DNR Representative: Taylor Huinker (DNR) Taylor.Huinker@state.mn.us
☒ Watershed District or Watershed Mgmt. Org.: Carver County WMO - Kristen Larson
☒ Applicant: Timoth and Ann Raser and Walter and Rosette Raser, LP ☒ Agent/Consultant: Todd Ullom, Samatek

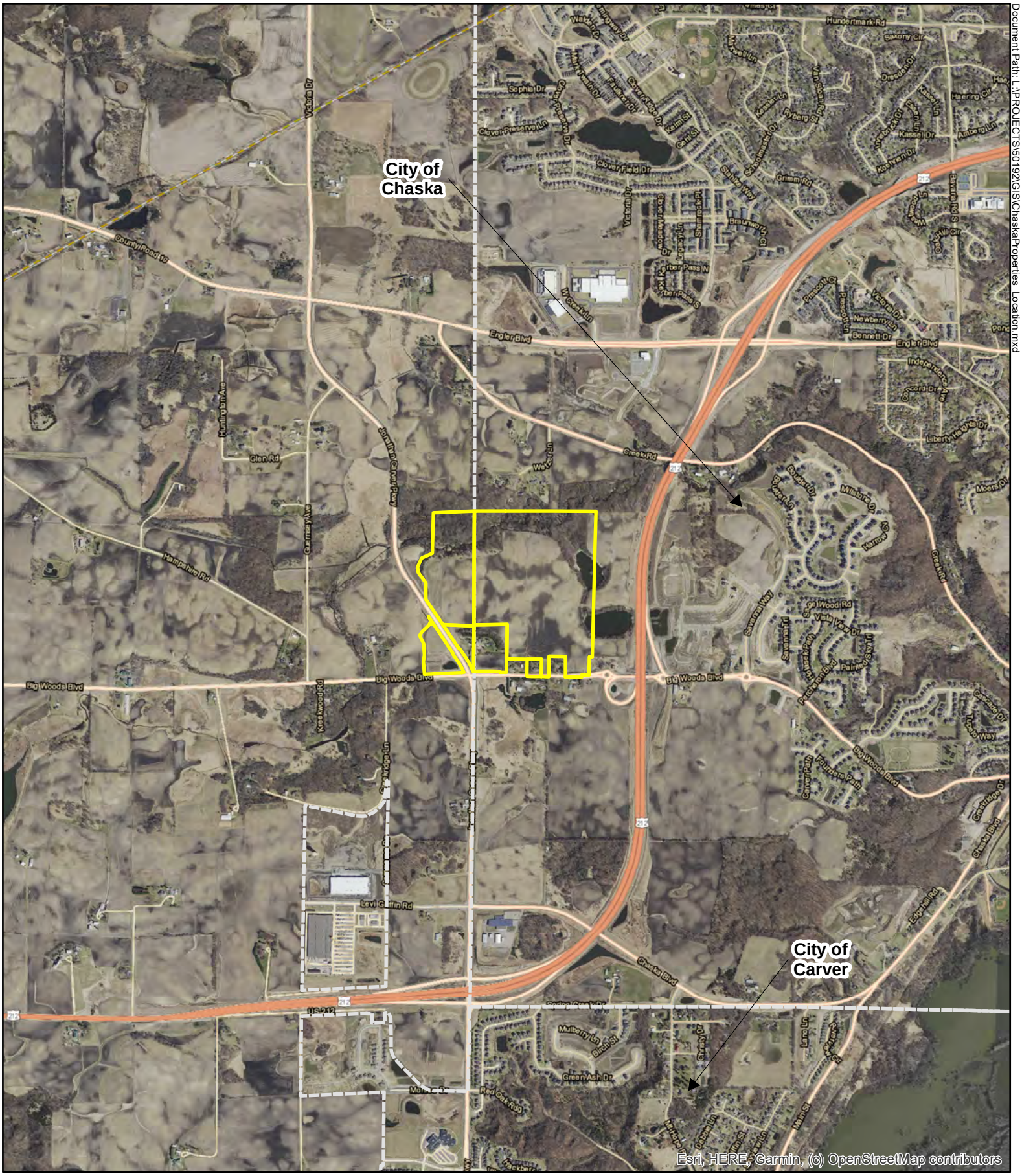
Optional or As Applicable:

☒ Corps of Engineers:
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):

☐ Members of the Public (notice only):	☐ Other:

Signature: 	**Date:** 7/27/22

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.



Location Map

Raser Properties

Chaska, Minnesota

Legend

- Property Boundaries
- City Boundaries

N W E S

0 1,000 2,000

Scale in Feet

Date: 11/10/2021

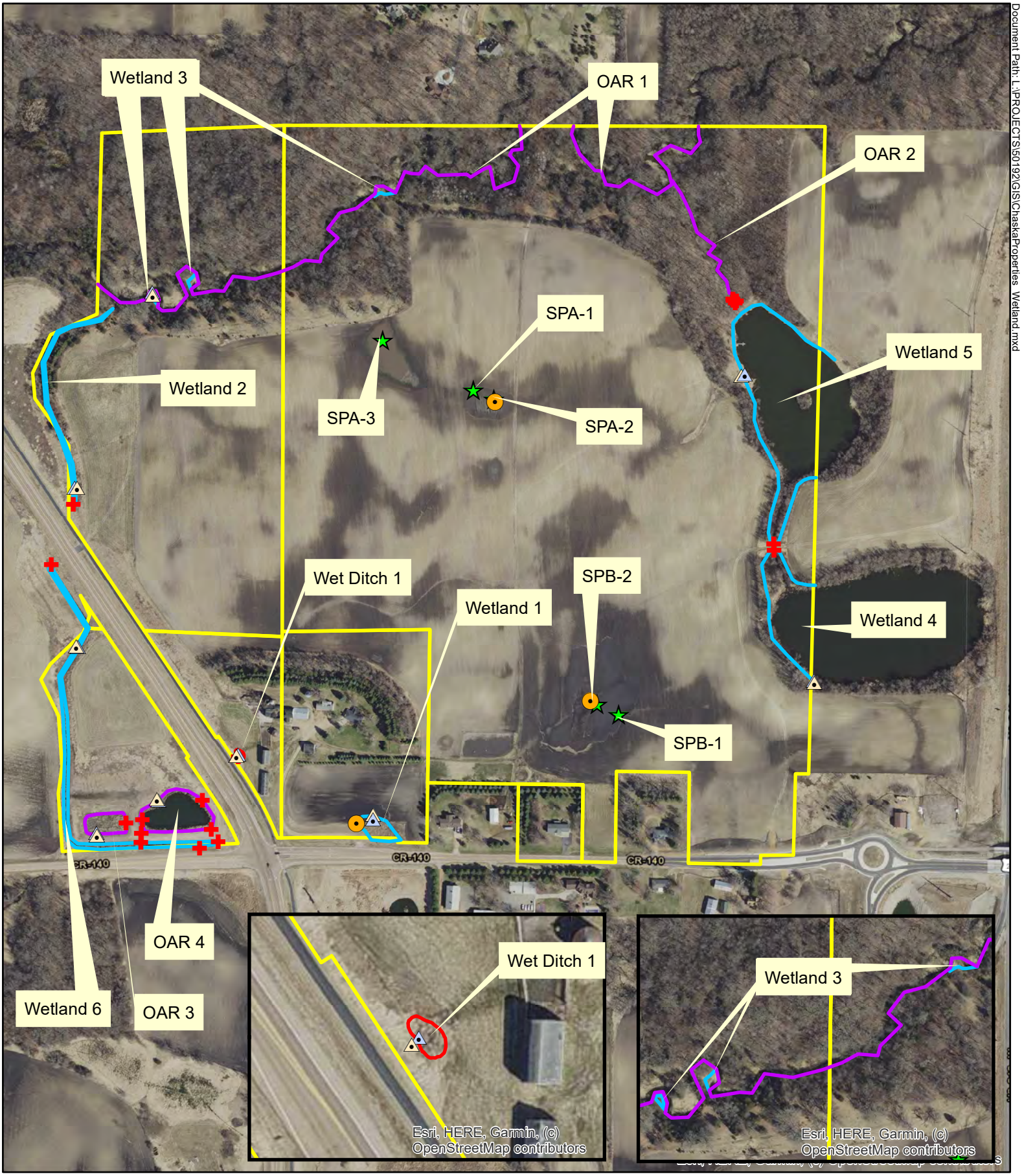
Project Number: 50192

Notes:

Sambatek

This map was created using Sambatek's Geographic Information Systems (GIS), it is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Sambatek is not responsible for any inaccuracies contained herein.

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Wetland Delineation Map

Raser Properties

Chaska, Minnesota

Legend

- Property Boundaries
- Wetland Boundaries
- OAR Boundaries
- Wet Ditch Boundaries
- Upland Sample
- Wet Sample
- Non-wetland area
- Culvert
- Drain Tile Inlet

N W E S

0 225 450

Scale in Feet

Date: 11/30/2021

Project Number: 50192

Notes:

Sambatek

This map was created using Sambatek's Geographic Information Systems (GIS), it is a compilation of information and data from various sources. This map is not a surveyed or legally recorded map and is intended to be used as a reference. Sambatek is not responsible for any inaccuracies contained herein.

Document Path: L:\PROJECTS\50192\GIS\ChaskaProperties_Wetland.mxd

APPENDIX B: AGENCY PROJECT CORRESPONDENCE

- USFWS IPaC Species List
- MnDNR Natural Heritage Review Letter
- Calcareous Fen Fact Sheet

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 10/23/2025 22:09:52 UTC
Project Code: 2026-0008185
Project Name: Big Woods Business Park

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected. For bat activity dates, please review Appendix L in the Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC

species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the northern long-eared bat and tricolored bat range-wide D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter. Additional information about available tools can be found on the Service's northern long-eared bat website.

Whooping Crane
Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities
Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. It is the responsibility of the project proponent to survey the area for any migratory bird nests. If there is an eagle nest on-site while work is on-going, eagles may be disturbed. We recommend avoiding and minimizing disturbance to eagles whenever practicable. If you cannot avoid eagle disturbance, you may seek a permit. A nest take permit is always required for removal, relocation, or obstruction of an eagle nest. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. **Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.**

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2026-0008185
Project Name: Big Woods Business Park
Project Type: Commercial Development
Project Description: Business Park development in Chaska, Dakota County, Minnesota
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.79071135,-93.6360226572547,14z



Counties: Carver County, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
Rusty Patched Bumble Bee *Bombus affinis* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9383 General project design guidelines: https://ipac.ecosphere.fws.gov/project/HZCF6JNZVJFJ5L4SFWR7L2J7TY/documents/generated/9225.pdf	Endangered

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Rusty Patched Bumble Bee *Bombus affinis* https://ecos.fws.gov/ecp/species/9383#crithab	Proposed

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

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1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information

on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

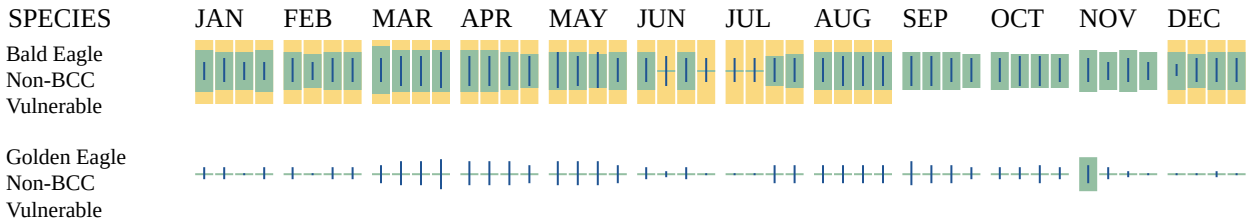
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black Tern *Chlidonias niger surinamenisis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9643	Breeds May 20 to Aug 10
Cerulean Warbler *Setophaga cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 22 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20

NAME	BREEDING SEASON
Grasshopper Sparrow *Ammodramus savannarum perpallidus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Henslow's Sparrow *Centronyx henslowii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Le Conte's Sparrow *Ammospiza leconteii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9469	Breeds Jun 1 to Aug 15
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Marbled Godwit *Limosa fedoa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere

NAME	BREEDING SEASON
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

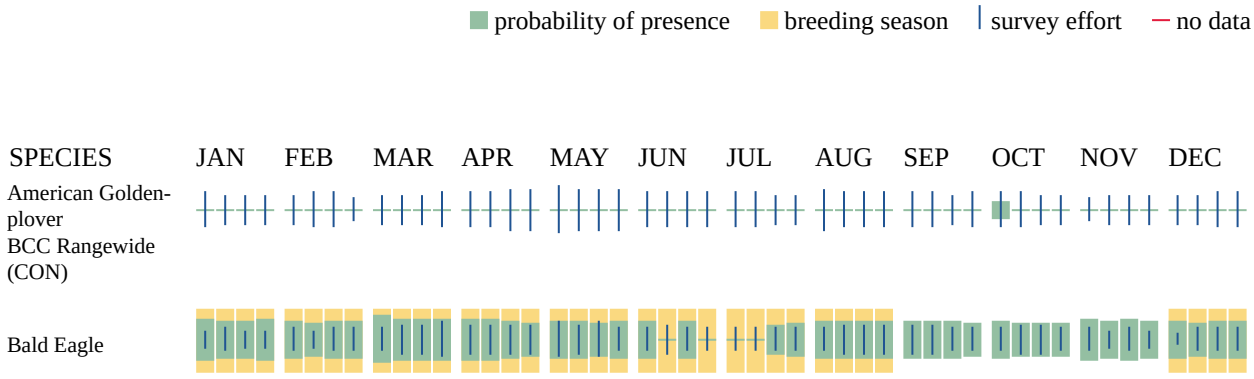
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Non-BCC
Vulnerable

Black Tern
BCC Rangewide
(CON)

Black-billed
Cuckoo
BCC Rangewide
(CON)

Bobolink
BCC Rangewide
(CON)

Canada Warbler
BCC Rangewide
(CON)

Cerulean Warbler
BCC Rangewide
(CON)

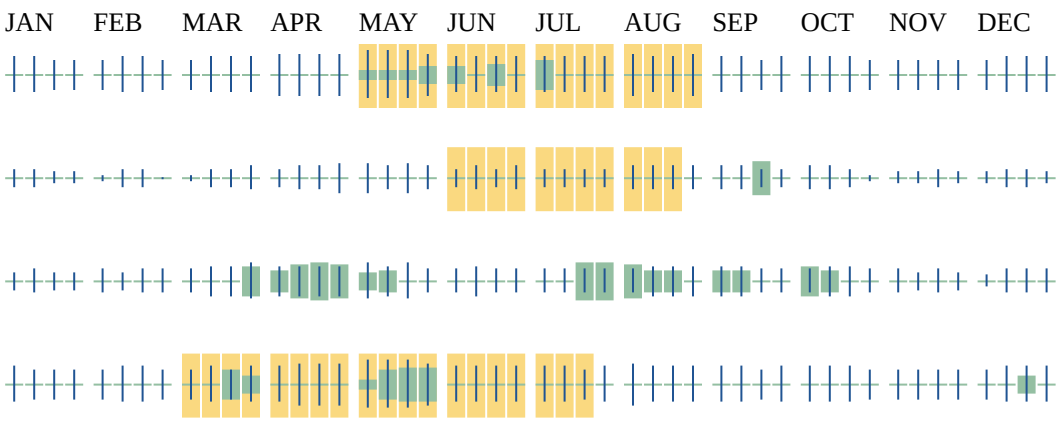
Chimney Swift
BCC Rangewide
(CON)

Eastern Whip-poor-
will
BCC Rangewide
(CON)

Golden Eagle
Non-BCC
Vulnerable

Golden-winged
Warbler
BCC Rangewide
(CON)

Grasshopper
Sparrow
BCC - BCR

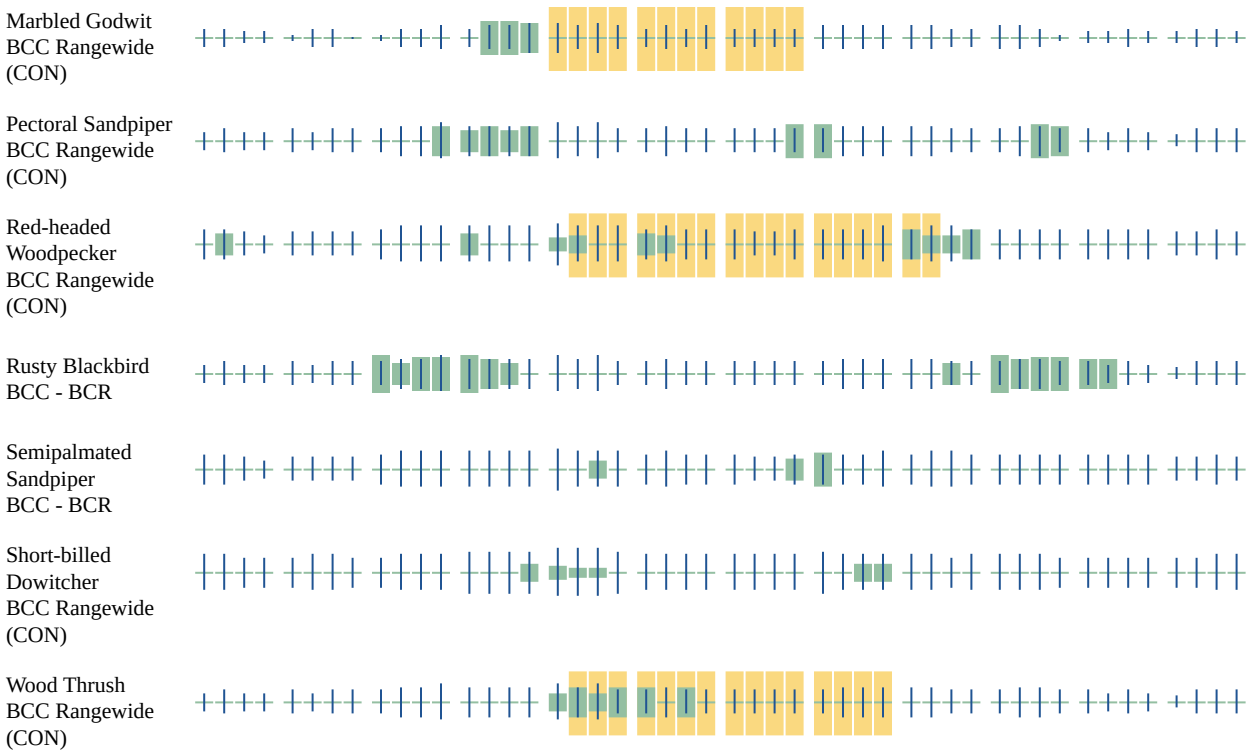


Henslow's Sparrow
BCC Rangewide
(CON)

Le Conte's Sparrow
BCC Rangewide
(CON)

Lesser Yellowlegs
BCC Rangewide
(CON)

Long-eared Owl
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1A

- PFO1Ad

RIVERINE

- R4SBC
- R2UBH

FRESHWATER EMERGENT WETLAND

- PEM1C
- PEM1Ad
- PEM1F
- PEM1Cd
- PEM1Af
- PEM1A

FRESHWATER POND

- PABHx
- PUBH

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Madeline Roess
Address:	767 Eustis Street
Address Line 2:	#100
City:	St. Paul
State:	MN
Zip:	55114
Email	madeline.roess@kimley-horn.com
Phone:	6128456789

DEPARTMENT OF NATURAL RESOURCES

Formal Natural Heritage Review - Cover Page

See next page for results of review. A draft watermark means the project details have not been finalized and the results are not official.

Project Name: Big Woods Business Park - 160846040.1

Project Proposer: Scannell

Project Type: Development, Commercial/Institutional/Industrial

Project Type Activities: Wetland impacts (e.g., dewatering, tiling, drainage, discharge, excavation, fill, runoff, sedimentation, changes in hydrology);Tree Removal

TRS: T115 R23 S6, T115 R23 S7

County(s): Carver

DNR Admin Region(s): Central

Reason Requested: State EAW

Project Description: The project is proposing a business park development.

Existing Land Uses: Agricultural land, undeveloped land, farmsteads

Landcover / Habitat Impacted: Agricultural land, forest, grassland, wetland

Waterbodies Affected: Potential wetland impacts

Groundwater Resources Affected: N/A

Previous Natural Heritage Review: No

Previous Habitat Assessments / Surveys: No

SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	Comments	Tree Removal - Recommendations
Ecologically Significant Area	Comments	Protected Wetlands: Calcareous Fens
State-Listed Endangered or Threatened Species	No Comments	No Further Review Required
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	Comments	Visit IPaC for Federal Review RPBB High Potential Zone

DEPARTMENT OF NATURAL RESOURCES

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

July 17, 2025

Project ID: MCE #2025-00616

Twin Cities - Environmental (Kimley-Horn)
Kimley-Horn and Associates, Inc.
767 North Eustis Street, Suite 100
St. Paul, MN 55114

RE: Automated Natural Heritage Review of the proposed Big Woods Business Park - 160846040.1
See Cover Page for location and project details.

Dear Twin Cities - Environmental (Kimley-Horn),

As requested, the above project has been reviewed for potential effects to rare features. Based on this review, the following rare features may be adversely affected by the proposed project:

Project Type and/or Project Type Activity Comments

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed below, all of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, the DNR recommends that tree removal be avoided from June 1 through August 15.

Ecologically Significant Area

- One or more calcareous fens have been documented in the vicinity of the proposed project. A calcareous fen is a rare and distinctive peat-accumulating wetland that is legally protected in Minnesota. Many of the unique characteristics of calcareous fens result from the upwelling of groundwater through calcareous substrates. Because of this dependence on groundwater hydrology, calcareous fens can be affected by nearby activities or even those several miles away. Calcareous fens are fragile and may be impacted by activities within the fen, activities that affect surface water flows (e.g., stormwater flow/runoff, erosion), or activities that affect groundwater hydrology (e.g., groundwater pumping, contamination, or discharge). For more information regarding calcareous fens, please see the Calcareous Fen Fact Sheet. To minimize stormwater impacts, please refer to the Minnesota Pollution Control Agency's General Principles for Erosion Prevention and Sediment Control in the Minnesota Stormwater Manual. Please note that calcareous fens are "Special Waters"

and a buffer zone may be required.

Depending on the distance to the calcareous fen(s), additional guidance may be provided below if you indicated that potential project activities include wetland impacts or groundwater impacts. **If you did not correctly identify wetland or groundwater impacts as part of your project, this impact analysis may be incorrect.**

State-Listed Endangered or Threatened Species

No state-listed endangered or threatened species have been documented in the vicinity of the project.

State-Listed Species of Special Concern

Taxonomic Group	Common Name	Scientific Name	Water Regime	Habitat	Federal Status
Vascular Plant	Sessile-flowered Yellow Cress	Rorippa sessiliflora	wetland	Floodplain Forest, River Shore	

- The above table identifies state-listed species of special concern that have been documented in the vicinity of your project. If suitable habitat for any of these species occurs within your project footprint or activity impact area, the project may negatively impact those species. To avoid impacting state-listed species of special concern, the DNR recommends modifying the location of project activities to avoid suitable habitat or modifying the timing of project activities to avoid the presence of the species. Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts. Species-specific comments, if any, appear below.

Federally Listed Species

- One or more federally listed species may be impacted by the proposed project. To ensure compliance with federal law, conduct a federal regulatory review using the U.S. Fish & Wildlife Service online IPaC tool.
- The area of interest overlaps with a U.S Fish and Wildlife Service (USFWS) Rusty Patched Bumble Bee High Potential Zone. The rusty patched bumble bee *(Bombus affinis)* is federally listed as endangered and is likely to be present in suitable habitat within High Potential Zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. If applicable, the DNR recommends reseeding disturbed soils with native species of grasses and forbs using BWSR Seed Mixes or MnDOT Seed Mixes. To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online Information for Planning and Consultation (IPaC) tool. Please note that all projects, regardless of whether there is a federal nexus, are subject to federal take prohibitions. The IPaC review will determine if prohibited take is likely to occur and, if not, will generate an automated letter. The USFWS RPBB guidance provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and the project description provided on the cover page. If project details change or construction has not occurred within one year, please resubmit the project for review before initiating project activities.

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely, *The Natural Heritage Review Team* Natural Heritage Review Program
Review.NHIS@state.mn.us

Links: USFWS Information for Planning and Consultation (IPaC) tool
Information for Planning and Consultation (IPaC) tool
DNR Regional Environmental Assessment Ecologist Contact Info
https://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html

Big Woods Business Park - 160846040.1

Aerial Imagery With Locator Map



N
W E
S

0 0.2 0.4 0.8 1.2 1.6 Miles

Project Boundary

Project Type: Development, Commercial/Institutional/Industrial

Project Size (acres): 324.72

County(s): Carver

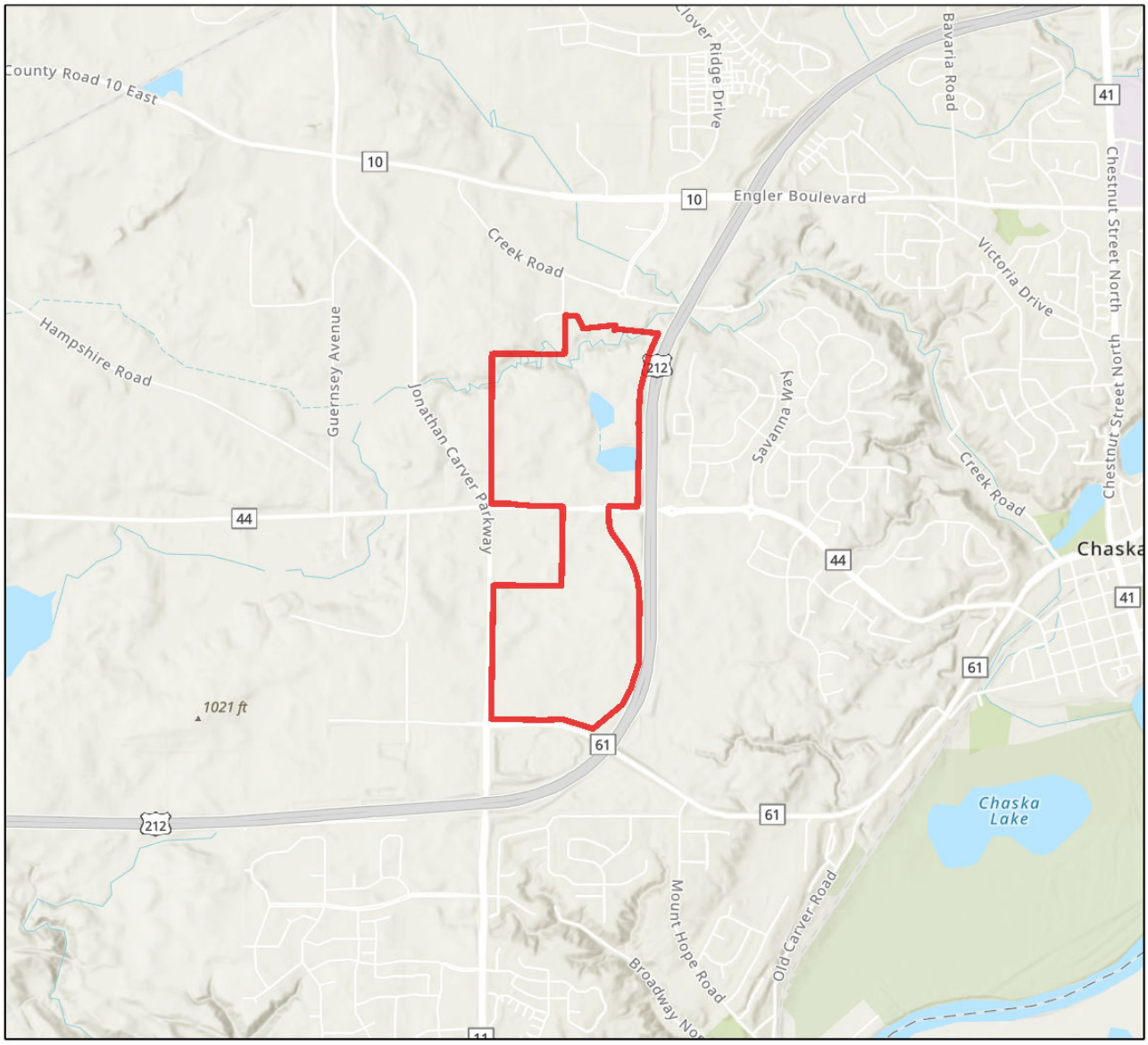
TRS: T115 R23 S6, T115 R23 S7

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Earthstar Geographics
Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, TomTom,



Big Woods Business Park - 160846040.1

USA Topo Basemap With Locator Map



N
W E
S

0 0.2 0.4 0.8 1.2 1.6 Miles

Project Boundary



Project Type: Development, Commercial/Institutional/Industrial

Project Size (acres): 324.72

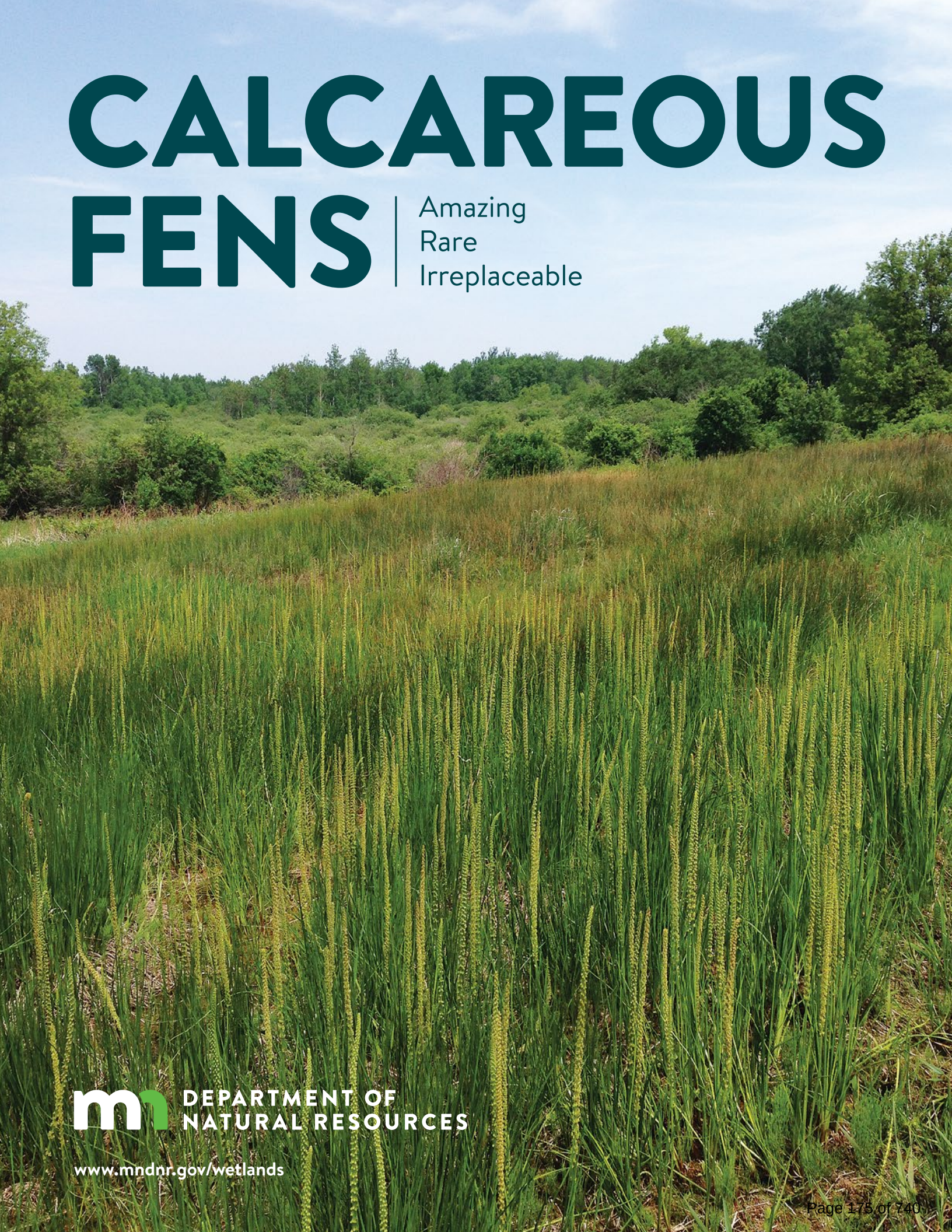
County(s): Carver

TRS: T115 R23 S6, T115 R23 S7

Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Esri, NASA, NGA, USGS, FEMA
Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, TomTom,

CALCAREOUS FENS

Amazing
Rare
Irreplaceable



DEPARTMENT OF NATURAL RESOURCES

www.mndnr.gov/wetlands



American grass of parnassus
Parnassia glauca

What are calcareous fens?

Calcareous fens are rare and distinctive peat-accumulating wetlands. They depend on a constant supply of upwelling groundwater rich in calcium and other minerals. This calcium-rich environment supports highly diverse and unique rare plants that tolerate low oxygen conditions, calcium carbonate deposits, low nutrient availability, and relatively cold organic soils (peat)—the calcareous fen ecosystem.



Iron-stained, marly pools are one sign of a healthy calcareous fen like this one at Sioux Nation Wildlife Management Area.

Where can you find calcareous fens?

In Minnesota, calcareous fens are mostly found in the western part of the state associated with remnant glacial features, along the Minnesota River Valley, and in the limestone-dominated (karst) geologic regions of the southeast. Calcareous fens have been in western Minnesota for at least 4,000 years and in the Minnesota River Valley for more than 10,000 years. They typically occur on slopes where groundwater rises to the surface and saturates the peat before draining away, causing the area to be spongy and wet. The upwelling groundwater can either create a "peat dome," rising a few feet above the ground or an "apron" where the peat spreads out along a hillside. You might also notice shallow pools of water that can be surrounded by sedges growing in small raised clumps, called hummocks. The shallow pools contain white calcium carbonate deposits that look like snow or salt. Water levels in calcareous fens remain at or very near the soil surface, even during summer because groundwater input balances evaporation and the use of water by plants (transpiration). They are rarely, if ever, flooded by surface water because of their position on the landscape.

Calcareous fens are fragile

Fens are highly susceptible to disturbance. The soft peat makes almost any activity within them, by humans or livestock, highly disruptive. A loss of groundwater supply to the fen can break down the peat and release nutrients that can alter the plant community. Flooding can drown fen species and deposit sediment and excess nutrients. Most of these disturbances result in an invasion of shrubs, upland plants, and invasive species such as reed canary grass, which eventually outcompete and crowd out fen species, ultimately leading to the loss of the calcareous fen community.

www.mndnr.gov/wetlands

Cover photo: The Nature Conservancy's Regal Meadow calcareous fen.

State-listed rare plant species found in calcareous fens

Hairy fimbry	*Fimbristylis puberula*	State endangered
Sterile sedge	*Carex sterilis*	State threatened
Hair-like beak rush	*Rhynchospora capillacea*	State threatened
Beaked spikerush	*Eleocharis rostellata*	State threatened
Whorled nutrush	*Scleria verticillata*	State threatened
Cut-leaf water parsnip	*Berula erecta*	State threatened
Edible valerian	*Valeriana edulis*	State threatened
Twig rush	*Cladium mariscoides*	State special concern
Small white lady's-slipper	*Cypripedium candidum*	State special concern
Wild sweet William	*Phlox maculata*	State special concern



Sterile sedge, *Carex sterilis*

Why are calcareous fens protected?

Fens are connected to a larger groundwater system. They are good indicators of groundwater sustainability, contribute to improved water quality and ecological diversity, and are an invaluable part of Minnesota's rich natural heritage. Calcareous fens formed after the glaciers receded, which makes them an old and constant feature in the landscape. Because of this they are irreplaceable and have special protection in Minnesota to prevent them from being lost forever. (Minn. Statutes 103G.223). In addition, any state-threatened or endangered plants occurring in a calcareous fen are protected under Minnesota's endangered species law (Minn. Statutes 84.0895).

Calcareous fens are one of the rarest natural communities and are threatened throughout much of their range by land use conversion, changes in groundwater supply, and development. There are approximately 200 known calcareous fens in Minnesota. They range in size from a tenth of an acre to dozens of acres, but most are less than 4 acres. Calcareous fens support a large number of uncommon and rare plant species. Four of these species are found almost exclusively in calcareous fens.



DNR scientist, Jennie Leete, stands on an ice dome formed by upwelling groundwater freezing as it hits the cold winter air.

How can you help calcareous fens?

If you are interested in the conservation of calcareous fens or suspect you have one on your property, the DNR can serve as a resource to help you manage the fen for its long-term health and survival. If you are considering an activity that may impact a calcareous fen, a permit may be required. For more information, contact the DNR, Ecological and Water Resources at 651-259-5100.

CALL US

License, titling and registration: M-F 8 a.m.-4:30 p.m.

General information: M-F 8 a.m.-8 p.m., Sat. 9 a.m.-1 p.m.

888-646-6367 or 651-296-6157

888-MINNDNR

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DEPARTMENT OF NATURAL RESOURCES

ECOLOGICAL AND WATER RESOURCES
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APPENDIX C: GREENHOUSE GAS INFORMATION

- Minnesota Climate Calculator: Scenario 1
- Minnesota Climate Calculator: Scenario 2
- Adaptation Strategies
- Mitigation Measures

Minnesota Climate Calculator: Project Summary Report

Date Prepared: 2/11/2026

The results shown below were generated using the Minnesota Climate Calculator. The emissions quantified account for the full greenhouse gas impact of a potential project throughout the construction and operational phases of the project. This includes emissions from project activities that occur on-site as well as emissions that occur upstream and downstream of the project. The results are based on user inputs and assumptions; actual project emissions may vary.

Background Information

Project Name	Big Woods Business Park AUAR - Scenario 1
Project Category (primary)	Subp. 14, Industrial, commercial, institutional facilities
Project Category (secondary)	
Location (County)	Carver
Construction Start Date	6/1/2026
Operational Year	2037
Operational Lifetime (Years)	50

Electricity Provider	Grid Average
Portion of Building Electricity Consumption to be Generated On-Site via Renewables or Supplied through the Purchase of Renewable Energy Credits (RECs)	0%
Portion of Building Natural Gas Consumption to be Supplied from Renewable Sources	0%

Building Construction Project?	Yes

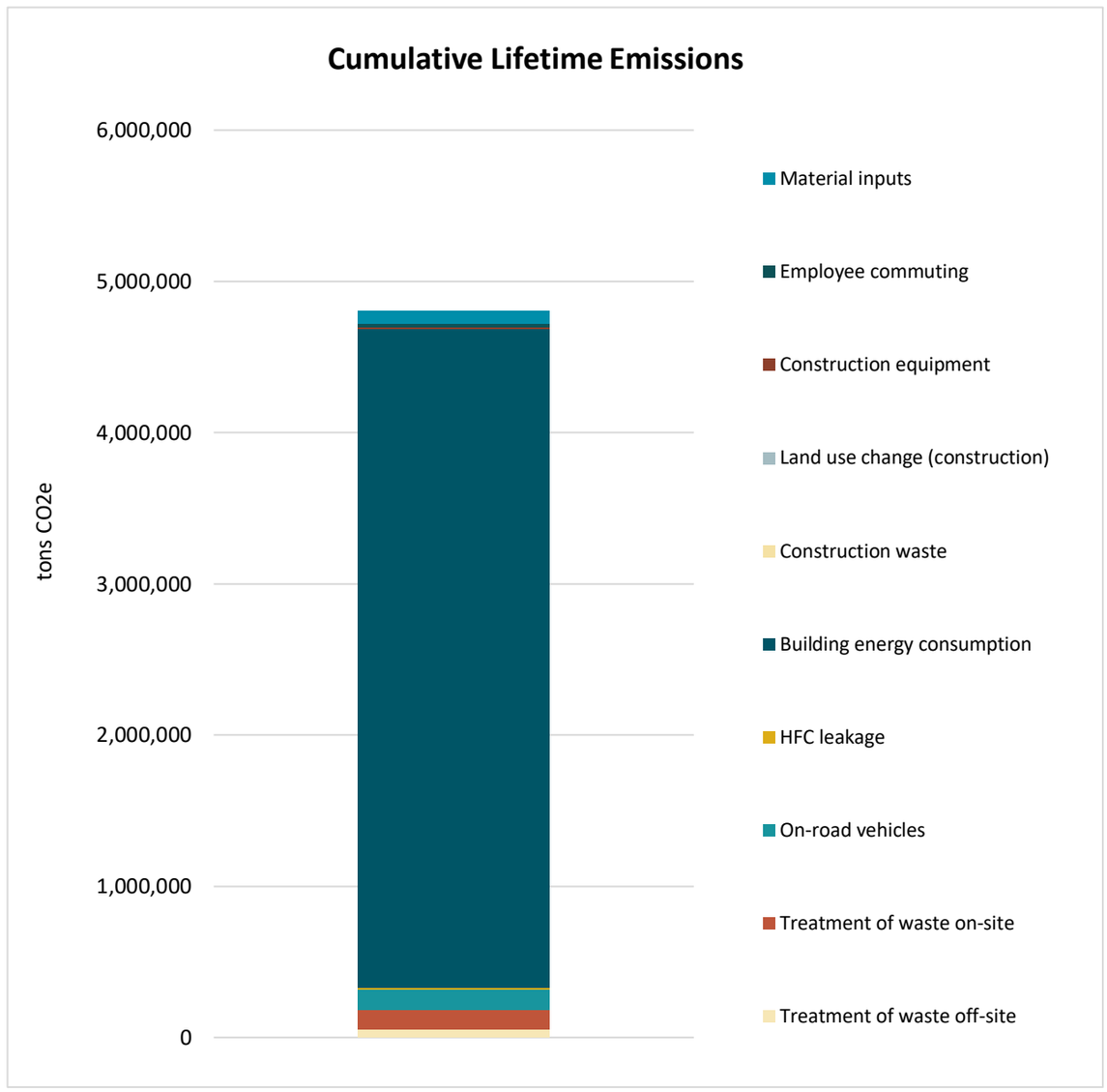
Construction Stage	Duration (Days)
Demolition	359
Site Preparation	215
Grading	556
Building Construction	5,565
Architectural Coatings	395
Paving and Landscaping	395

Summary Results

Project Lifetime	61
Unit	tons

Phase	CO_2e Emissions	
	Cumulative	Annualized
Construction		
Material inputs	85,554.92	1,402.54
Transportation of material inputs	2,199.26	36.05
Employee commuting	18,291.17	299.86
Construction equipment	13,110.44	214.93
Land use change (construction)	39.70	0.65
Construction waste	135.58	2.22
Operation		
Building energy consumption	4,355,423.43	71,400.38
Coal production	NA	NA
Natural gas and oil products	NA	NA
Industrial processes	NA	NA
HFC leakage	14,101.12	231.17
Land use change (operations)	NA	NA
On-road vehicles	131,889.76	2,162.13
Treatment of waste on-site	NA	NA
Treatment of wastewater on-site	NA	NA
Treatment of waste off-site	53,029.21	869.33
Enteric fermentation	NA	NA
Manure management	NA	NA
Total	**4,673,774.59**	**76,619.26**

Note: NA indicates that emissions were not quantified and/or are not applicable.



User Inputs

Note: NA indicates that emissions were not quantified and/or activity is not applicable.

Material Inputs

Material Type	Quantity	Unit	Geographical Sourcing
Aluminum	5,000.00	Tons	Unknown
Asphalt	2,500.00	Tons	Domestic
Brick	7,000.00	Tons	Unknown
Concrete	150,000.00	Tons	Domestic
Glass	1,500.00	Tons	Unknown
Insulation (residential)	0.00	Tons	Unknown
Insulation (commercial)	500.00	Tons	Unknown
Steel	10,000.00	Tons	Unknown
Wood Products	3,000.00	Tons	Unknown

Employee Commuting

Construction Stage	Daily Average Number of Employees Commuting
Demolition	15
Site Preparation	25
Grading	15
Building Construction	300
Architectural Coatings	40
Paving and Landscaping	40

Transportation Mode	Percent of Employees
Single Occupancy Vehicle	90%
Carpool	10%
Motorcycle	0%
Bus	0%
Transit Rail	0%
Bike/Walk	0%

Average One-Way Commute Length (miles)	13.2

Construction Equipment

Equipment Type	Fuel Type	Number of Hours per Day by Construction Stage					
		Demolition	Site Preparation	Grading	Building Construction	Architectural Coatings	Paving and Landscaping
Air Compressors	Diesel	0	0	0	0	6	0
Cement and Mortar Mixers	Diesel	0	0	0	0	0	0
Concrete/Industrial Saws	Diesel	8	0	0	0	0	0
Cranes	Diesel	0	0	0	7	0	0
Excavators	Diesel	24	0	16	0	0	0
Forklifts	Diesel	0	0	0	24	0	0
Generator Sets	Diesel	0	0	0	8	0	0
Graders	Diesel	0	0	8	0	0	0
Pavers	Diesel	0	0	0	0	0	16
Paving Equipment	Diesel	0	0	0	0	0	16
Rollers	Diesel	0	0	0	0	0	16
Rubber Tired Dozers	Diesel	16	24	8	0	0	0
Scrapers	Diesel	0	0	16	0	0	0
Tractors/Loaders/Backhoes	Diesel	0	32	16	21	0	0
Welders	Diesel	0	0	0	8	0	0

Land Use Change

Land Use Type	Acres		
	Pre-Construction	Post-Construction	Post-Operation
Wetlands, forested	0.00	0.00	NA
Wetlands, not forested	40.30	20.00	NA
Forest	62.60	60.00	NA
Rivers and streams	0.00	0.00	NA
Brush and grassland	17.80	0.00	NA
Cropland	234.70	0.00	NA
Livestock rangeland/pastureland	0.00	0.00	NA
Lawn/landscaping	0.00	129.30	NA
Green Infrastructure: Constructed wetlands, paved	0.00	0.00	NA
Green Infrastructure: Constructed wetlands, vegetated	0.00	20.00	NA
Green Infrastructure: Constructed green roofs	0.00	0.00	NA
Green Infrastructure: Constructed permeable pavements	0.00	0.00	NA
Impervious surface	3.90	130.00	NA
Stormwater pond (wet sedimentation basin)	0.00	0.00	NA

Trees	Number
Number of mature trees removed	1000
Number of new trees planted	500

Construction Waste

Material Type	Quantity (tons)
Aluminum	0.00
Asphalt	0.00
Brick	280.00
Concrete	4500.00
Glass	45.00
Insulation	50.00
Steel	0.00
Wood Products	150.00
Mixed Waste	0.00

Building Energy Consumption

Building Type	Energy Intensity (Btu/sq ft/year)			
	Electricity	Natural Gas	Propane	Kerosene or Fuel Oil
Residential	18,096.91	24,460.01	3,619.38	233.51
Commercial	30,766.13	35,534.88	0.00	1,661.56
Industrial	229,952.20	656,392.90	0.00	8,191.66
Institutional	46,860.06	48,219.03	0.00	3,659.93
Other	0.00	0.00	0.00	0.00

Emissions from Coal Production

Coal Type	Incremental Production (tons/year)
Mixed Coal	NA
Anthracite Coal	NA
Bituminous Coal	NA
Subbituminous Coal	NA
Lignite Coal	NA
Coal Coke	NA

Emissions from Natural Gas and Oil Products

Fuel Type	Incremental Throughput	Unit
Natural Gas	NA	Cubic Feet/year
Renewable Natural Gas	NA	Cubic Feet/year
Propane	NA	Gallons/year
Gasoline	NA	Gallons/year
Distillate Fuel Oil No. 1	NA	Gallons/year
Distillate Fuel Oil No. 2	NA	Gallons/year
Distillate Fuel Oil No. 4	NA	Gallons/year
Residual Fuel Oil No. 5	NA	Gallons/year
Residual Fuel Oil No. 6	NA	Gallons/year
Liquified Petroleum Gas (LPG)	NA	Gallons/year
Kerosene	NA	Gallons/year
Kerosene Jet Fuel	NA	Gallons/year
Biodiesel 100	NA	Gallons/year
Biodiesel 20	NA	Gallons/year
Renewable Diesel	NA	Gallons/year

Natural Gas Assumptions

Percent Reduction in Leakage and Venting Emissions	NA
Leakage and Venting Emissions ($kgCO_2e/MMBtu$)	NA

Industrial Processes

Product Type	Quantity (tons/year)	Emission Factor ($kgCO_2e/ton$)
Cement	NA	NA
Lime	NA	NA
Limestone Use	NA	NA
Magnesium	NA	NA
Iron and Steel	NA	NA
Ammonia	NA	NA
Aluminum	NA	NA
Nitric Acid	NA	NA

HFC Leakage

Building Type	Percent of Building Area Utilized
Residential	100%
Commercial	100%
Industrial	100%
Institutional	100%

On-Road Vehicles

Speed Bin (miles/hr)	Additional VMT (miles/year)
Fleet Average	10000000
0-30	0
31-55	0
56-75	0

Treatment of Waste On-Site

Waste Treatment Practice	Quantity of Waste Treated (tons/year)
	NA
	NA
	NA

Treatment of Wastewater On-Site

Population Served by Treatment Plant	NA

Product Type	Production (MT/year)
	NA

Treatment of Waste Off-Site

Activity	Quantity	Waste Generation Rate	Unit
Number of single family households	0	7.00	lb/household/day
Number of employees (commercial)	100	10.53	lb/employee/day
Number of employees (industrial)	900	8.93	lb/employee/day
Number of employees (institutional)	0	3.55	lb/employee/day
Visitors per year (public venues)	0	1.72	lb/visitor

Waste Treatment Practice	Percent of Waste
Recycled	0%
Composted	0%
Landfilled	100%
Combusted	0%

Enteric Fermentation and Manure Management

Livestock Type	Population	Percentage of Manure Management System											
		Anaerobic digester	Anaerobic lagoon - liquid	Cattle deep litter	Composting	Daily spread	Deep pit	Dry lot	Liquid/ slurry	Pasture, range, paddock	Poultry with litter	Poultry without litter	Solid storage
Bulls	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef cows	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef heifers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Steer stockers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heifer stockers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Feedlot beef	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef calves	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy heifers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy cows	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy calves	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine, <55 lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine 55-330 lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine 330+ lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, layers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, pullets	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, chickens	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, broilers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkeys	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Percent of manure applied or sold for application to agricultural soils (pasture or cropland) as fertilizer	0%

Notes

General Notes	
Material inputs	
Transportation of material inputs	
Employee commuting	
Construction equipment	
Land use change (construction)	
Construction waste	
Building energy consumption	
Coal production	
Natural gas and oil products	
Industrial processes	
HFC leakage	
Land use change (operations)	
On-road vehicles	
Treatment of waste on-site	
Treatment of wastewater on-site	
Treatment of waste off-site	
Enteric fermentation	
Manure management	
Mitigation Measures	
Adaptation Strategies	

Minnesota Climate Calculator: Project Summary Report

Date Prepared: 2/11/2026

The results shown below were generated using the Minnesota Climate Calculator. The emissions quantified account for the full greenhouse gas impact of a potential project throughout the construction and operational phases of the project. This includes emissions from project activities that occur on-site as well as emissions that occur upstream and downstream of the project. The results are based on user inputs and assumptions; actual project emissions may vary.

Background Information

Project Name	Big Woods Business Park - Scenario 2
Project Category (primary)	Subp. 14, Industrial, commercial, institutional facilities
Project Category (secondary)	
Location (County)	Carver
Construction Start Date	6/1/2026
Operational Year	2037
Operational Lifetime (Years)	50

Electricity Provider	Grid Average
Portion of Building Electricity Consumption to be Generated On-Site via Renewables or Supplied through the Purchase of Renewable Energy Credits (RECs)	0%
Portion of Building Natural Gas Consumption to be Supplied from Renewable Sources	0%

Building Construction Project?	Yes

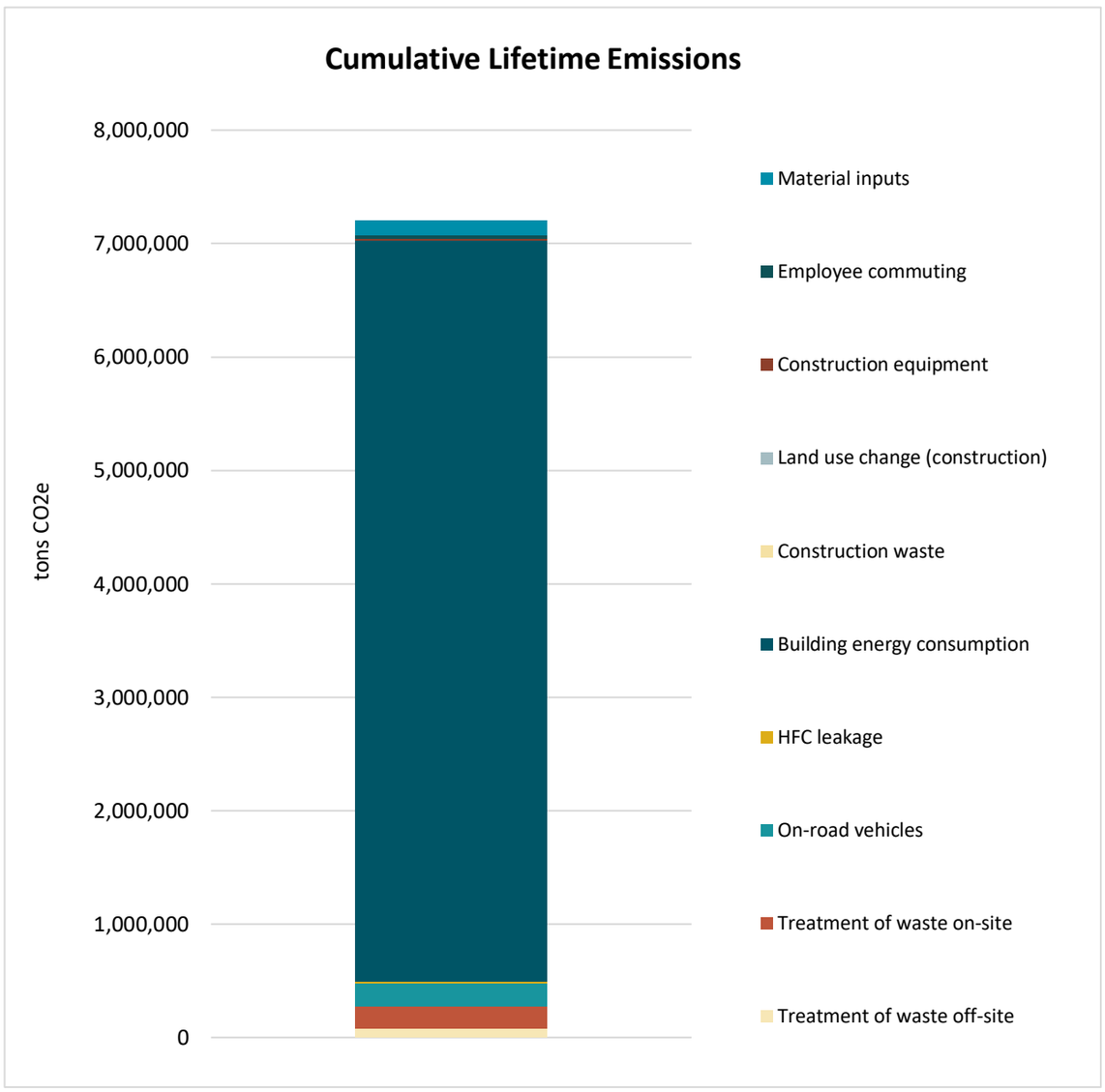
Construction Stage	Duration (Days)
Demolition	359
Site Preparation	215
Grading	556
Building Construction	5,565
Architectural Coatings	395
Paving and Landscaping	395

Summary Results

Project Lifetime	61
Unit	tons

Phase	CO_2e Emissions	
	Cumulative	Annualized
Construction		
Material inputs	128,332.38	2,103.81
Transportation of material inputs	3,298.89	54.08
Employee commuting	27,581.35	452.15
Construction equipment	13,110.44	214.93
Land use change (construction)	48.49	0.79
Construction waste	203.38	3.33
Operation		
Building energy consumption	6,533,135.15	107,100.58
Coal production	NA	NA
Natural gas and oil products	NA	NA
Industrial processes	NA	NA
HFC leakage	21,151.68	346.75
Land use change (operations)	NA	NA
On-road vehicles	197,834.64	3,243.19
Treatment of waste on-site	NA	NA
Treatment of wastewater on-site	NA	NA
Treatment of waste off-site	79,543.81	1,304.00
Enteric fermentation	NA	NA
Manure management	NA	NA
Total	**7,004,240.20**	**114,823.61**

Note: NA indicates that emissions were not quantified and/or are not applicable.



User Inputs

Note: NA indicates that emissions were not quantified and/or activity is not applicable.

Material Inputs

Material Type	Quantity	Unit	Geographical Sourcing
Aluminum	7,500.00	Tons	Unknown
Asphalt	3,750.00	Tons	Domestic
Brick	10,500.00	Tons	Unknown
Concrete	225,000.00	Tons	Domestic
Glass	2,250.00	Tons	Unknown
Insulation (residential)	0.00	Tons	Unknown
Insulation (commercial)	750.00	Tons	Unknown
Steel	15,000.00	Tons	Unknown
Wood Products	4,500.00	Tons	Unknown

Employee Commuting

Construction Stage	Daily Average Number of Employees Commuting
Demolition	25
Site Preparation	35
Grading	25
Building Construction	450
Architectural Coatings	70
Paving and Landscaping	80

Transportation Mode	Percent of Employees
Single Occupancy Vehicle	90%
Carpool	10%
Motorcycle	0%
Bus	0%
Transit Rail	0%
Bike/Walk	0%

Average One-Way Commute Length (miles)	13.2

Construction Equipment

Equipment Type	Fuel Type	Number of Hours per Day by Construction Stage					
		Demolition	Site Preparation	Grading	Building Construction	Architectural Coatings	Paving and Landscaping
Air Compressors	Diesel	0	0	0	0	6	0
Cement and Mortar Mixers	Diesel	0	0	0	0	0	0
Concrete/Industrial Saws	Diesel	8	0	0	0	0	0
Cranes	Diesel	0	0	0	7	0	0
Excavators	Diesel	24	0	16	0	0	0
Forklifts	Diesel	0	0	0	24	0	0
Generator Sets	Diesel	0	0	0	8	0	0
Graders	Diesel	0	0	8	0	0	0
Pavers	Diesel	0	0	0	0	0	16
Paving Equipment	Diesel	0	0	0	0	0	16
Rollers	Diesel	0	0	0	0	0	16
Rubber Tired Dozers	Diesel	16	24	8	0	0	0
Scrapers	Diesel	0	0	16	0	0	0
Tractors/Loaders/Backhoes	Diesel	0	32	16	21	0	0
Welders	Diesel	0	0	0	8	0	0

Land Use Change

Land Use Type	Acres		
	Pre-Construction	Post-Construction	Post-Operation
Wetlands, forested	0.00	0.00	NA
Wetlands, not forested	40.30	15.00	NA
Forest	62.60	60.00	NA
Rivers and streams	0.00	0.00	NA
Brush and grassland	17.80	0.00	NA
Cropland	234.70	0.00	NA
Livestock rangeland/pastureland	0.00	0.00	NA
Lawn/landscaping	0.00	59.30	NA
Green Infrastructure: Constructed wetlands, paved	0.00	0.00	NA
Green Infrastructure: Constructed wetlands, vegetated	0.00	25.00	NA
Green Infrastructure: Constructed green roofs	0.00	0.00	NA
Green Infrastructure: Constructed permeable pavements	0.00	0.00	NA
Impervious surface	3.90	200.00	NA
Stormwater pond (wet sedimentation basin)	0.00	0.00	NA

Trees	Number
Number of mature trees removed	1000
Number of new trees planted	500

Construction Waste

Material Type	Quantity (tons)
Aluminum	0.00
Asphalt	0.00
Brick	420.00
Concrete	6750.00
Glass	67.50
Insulation	75.00
Steel	0.00
Wood Products	225.00
Mixed Waste	0.00

Building Energy Consumption

Building Type	Energy Intensity (Btu/sq ft/year)			
	Electricity	Natural Gas	Propane	Kerosene or Fuel Oil
Residential	18,096.91	24,460.01	3,619.38	233.51
Commercial	30,766.13	35,534.88	0.00	1,661.56
Industrial	229,952.20	656,392.90	0.00	8,191.66
Institutional	46,860.06	48,219.03	0.00	3,659.93
Other	0.00	0.00	0.00	0.00

Emissions from Coal Production

Coal Type	Incremental Production (tons/year)
Mixed Coal	NA
Anthracite Coal	NA
Bituminous Coal	NA
Subbituminous Coal	NA
Lignite Coal	NA
Coal Coke	NA

Emissions from Natural Gas and Oil Products

Fuel Type	Incremental Throughput	Unit
Natural Gas	NA	Cubic Feet/year
Renewable Natural Gas	NA	Cubic Feet/year
Propane	NA	Gallons/year
Gasoline	NA	Gallons/year
Distillate Fuel Oil No. 1	NA	Gallons/year
Distillate Fuel Oil No. 2	NA	Gallons/year
Distillate Fuel Oil No. 4	NA	Gallons/year
Residual Fuel Oil No. 5	NA	Gallons/year
Residual Fuel Oil No. 6	NA	Gallons/year
Liquified Petroleum Gas (LPG)	NA	Gallons/year
Kerosene	NA	Gallons/year
Kerosene Jet Fuel	NA	Gallons/year
Biodiesel 100	NA	Gallons/year
Biodiesel 20	NA	Gallons/year
Renewable Diesel	NA	Gallons/year

Natural Gas Assumptions

Percent Reduction in Leakage and Venting Emissions	NA
Leakage and Venting Emissions ($kgCO_2e/MMBtu$)	NA

Industrial Processes

Product Type	Quantity (tons/year)	Emission Factor ($kgCO_2e/ton$)
Cement	NA	NA
Lime	NA	NA
Limestone Use	NA	NA
Magnesium	NA	NA
Iron and Steel	NA	NA
Ammonia	NA	NA
Aluminum	NA	NA
Nitric Acid	NA	NA

HFC Leakage

Building Type	Percent of Building Area Utilized
Residential	100%
Commercial	100%
Industrial	100%
Institutional	100%

On-Road Vehicles

Speed Bin (miles/hr)	Additional VMT (miles/year)
Fleet Average	15000000
0-30	0
31-55	0
56-75	0

Treatment of Waste On-Site

Waste Treatment Practice	Quantity of Waste Treated (tons/year)
	NA
	NA
	NA

Treatment of Wastewater On-Site

Population Served by Treatment Plant	NA

Product Type	Production (MT/year)
	NA

Treatment of Waste Off-Site

Activity	Quantity	Waste Generation Rate	Unit
Number of single family households	0	7.00	lb/household/day
Number of employees (commercial)	150	10.53	lb/employee/day
Number of employees (industrial)	1350	8.93	lb/employee/day
Number of employees (institutional)	0	3.55	lb/employee/day
Visitors per year (public venues)	0	1.72	lb/visitor

Waste Treatment Practice	Percent of Waste
Recycled	0%
Composted	0%
Landfilled	100%
Combusted	0%

Enteric Fermentation and Manure Management

Livestock Type	Population	Percentage of Manure Management System											
		Anaerobic digester	Anaerobic lagoon - liquid	Cattle deep litter	Composting	Daily spread	Deep pit	Dry lot	Liquid/ slurry	Pasture, range, paddock	Poultry with litter	Poultry without litter	Solid storage
Bulls	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef cows	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef heifers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Steer stockers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heifer stockers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Feedlot beef	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beef calves	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy heifers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy cows	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dairy calves	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine, <55 lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine 55-330 lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Swine 330+ lbs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, layers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, pullets	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, chickens	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poultry, broilers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turkeys	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Percent of manure applied or sold for application to agricultural soils (pasture or cropland) as fertilizer	0%

Notes

General Notes	
Material inputs	
Transportation of material inputs	
Employee commuting	
Construction equipment	
Land use change (construction)	
Construction waste	
Building energy consumption	
Coal production	
Natural gas and oil products	
Industrial processes	
HFC leakage	
Land use change (operations)	
On-road vehicles	
Treatment of waste on-site	
Treatment of wastewater on-site	
Treatment of waste off-site	
Enteric fermentation	
Manure management	
Mitigation Measures	
Adaptation Strategies	

Adaptation Strategies (Step 6)

Use the checkboxes below to identify adaptation strategies relevant to selected climate trends and project characteristics. The list of adapation strategies will filter to show strategies that align with both the climate trends and project characteristics selected. Ensure Macros are enabled for filters to work (see the User Guide tab for instructions on enabling macros). Use the column on the far left to select strategies you plan to implement as part of your proposed project. Select Generate PDF button once you've made your desired selections.

Step 1: Select Climate Trends

- ☑ Heavier, more damaging rain
- ☑ Average annual precipitation increasing
- ☑ Average annual temperature increasing
- ☑ Increasing risk of extreme heat and heatwaves
- ☑ Early thawing (cold weather warming)
- ☑ Increasing risk of drought

Step 2: Select Project Characteristics

- ☑ Hazardous waste
- ☑ Agriculture
- ☑ Livestock
- ☑ Critical infrastructure
- ☑ Waste management
- ☑ New or upgraded buildings
- ☑ Subsurface infrastructure
- ☑ Water management
- ☑ Construction
- ☑ Increased impervious surface
- ☑ New, expanded, or rebuilt transportation route

Reset Climate Trends | Reset Project Characteristics | Select All Unhidden Strategies | Reset all Selected Strategies | Generate PDF

Selection	ID	Adaptation Strategies	Additional Information
	S-1A-01	Clear floodplains and other areas subject to flooding of hazardous contaminants in advance of a flood event from extreme precipitation.	Develop a coordination plan to clear hazardous contaminants ahead of and/or after a flood event.
	S-1A-02	Conduct ongoing and pre-event stormwater infrastructure maintenance.	Clean out the storm drains and culverts; Ensure that all maintenance equipment are readily available and working for extreme events (e.g., generators).
	S-1A-03	Consider and adjust to changes in agricultural pests, due to increased precipitation, including the distribution and prevalence of flood-tolerant pests, and/or increased temperatures.	Monitor changes in distribution/prevalence of pests in the region; utilize plant selection / rotational strategies to address pests.
	S-1A-04	Consider and adopt soil health best practices to address increased precipitation, including flood-affected cropping patterns, and/or increased temperatures.	Plant cover crops; Plant more deep-rooted plants; Adopt no tillage approach or alter tiling to reduce erosion.
	S-1A-05	Enhance/develop adaptive stormwater management practices and technologies.	Implement natural buffers and green infrastructure (e.g., bioswales, tree trench; blue roof; vegetated roof; bioretention; green and blue roofs; preserve or build natural features/ecosystems; Use certified/qualified green infrastructure contractors and engineers; Maintain and/or expand the urban tree canopy); Ensure adequate culvert sizing and/or replace undersized culverts; Remove impervious surfaces and/or install permeable surfaces; Ensure sufficient water storage capacity for extreme flooding; Install underground storage systems to detain runoff in underground receptacles (e.g., culverts, engineered stormwater detention vaults, or perforated pipes); Build a retention pond to manage stormwater; Implement enhanced roof access to inspect and maintain roof and drainage system; Install oversized roof drains; use smart ponds.
	S-1A-06	Incorporate flood-proofing measures into new or upgraded facilities/assets.	Dry or wet-proof facilities (e.g., apply a waterproof veneer); Waterproof key equipment; Install back-up power; Conduct pre-flood event sandbagging; Install hard flood protection structures (e.g., floodwall, levees, dikes); Install removable barriers; Have movable assets; Seal buildings; Place critical equipment in waterproof containers or foundation systems; Consider elevation when selecting the site (e.g., Elevate the facilities and/or assets to be above the flood level).
	S-1A-07	Flood-proof facilities/assets using natural buffers and green infrastructure.	Maintain and/or expand the urban tree canopy; Use green roofs; Preserve or build natural features/ecosystems; Use certified/qualified green infrastructure contractors and engineers.
	S-1A-08	Create redundancy for routes in case of a disruption from an extreme precipitation event.	Expand the active transportation network (e.g., pedestrian walkways, bike routes); Identify alternative routes and evacuation routes in the case of an emergency; Create a map of detours.
	S-1A-09	Implement mechanisms to ensure roadways can withstand increased precipitation and extreme precipitation events.	Increase the capacity of the drainage system; elevate roadways; incorporate green infrastructure for stormwater management (e.g., revegetate with native/deep rooted plants, trees, swale, raingardens); Install permeable pavements; Install ribbin curbs or curb cuts; Conduct regular maintenance and inspections of drainage systems and culverts to make sure they are clear of debris. See climate adaptation materials from New York and Copenhagen for additional strategies to manage cloudburst.
	S-1A-10	Ensure there is adequate redundancy and/or backup energy resources available to maintain necessary operations during extreme precipitation events.	Implement renewable energy and smart grid technology to optimize energy distribution and reduce outages; Develop off-grid sources for redundant power supply; Install easy hookups for temporary power; Install backup generators; Diversify energy sources such as by installing renewable energy; Install battery storage; Incorporate multiple power supplies; Implement a microgrid with integrated energy storage systems; Join a community energy project to pool resources; Utilize a combined heat and power (CHP) system; Ensure these systems are designed to be resilient during a projected extreme flood event.
	S-1A-11	Harden the energy infrastructure systems to withstand extreme precipitation events.	Bury distribution lines; Elevate critical infrastructure above flood levels; Waterproof or seal equipment; Improve drainage systems around critical infrastructure.
	S-1A-12	Improve farm drainage and management systems to address increased runoff and prevent any waterlogging or excessive build up of mud considering increases in average and extreme precipitation without contributing to increased erosion at outlets.	Install subsurface drainage systems; Install permeable surfaces such as for farm roads; Build retention ponds; Plant native and/or deep-rooted vegetation to buffer runoff; Ensure a slope of 3-5% for pastures and pens to facilitate water runoff; Add bedding (e.g., shavings, straw); Add rubber mats; Adjust regular maintenance as needed to remove excess mud and manure.
	S-1A-13	Install additional shelter to protect livestock from prolonged wet conditions and extreme precipitation events.	Install run-in sheds; Maintain and/or plant trees; Use portable shelters; Install elevated flooring.
	S-1A-14	Ensure waste management facilities are prepared for extreme precipitation events.	Waterproof waste storage (e.g., sealed containers; protective barriers); Improve drainage systems around the facility; Elevate the weigh station area to allow continued receipt of waste deliveries; Ensure access roads to the facility do not flood; When siting the facility, consider location (e.g., avoid floodplains; elevate the facility).
	S-1A-15	Ensure water infrastructure can withstand projected increases in average and extreme precipitation.	Install stormwater outfall pumps/lift stations to drain water from the system if outfalls were to become submerged; Implement strong pumps for backflow prevention; Ensure adequate capacity for wastewater and stormwater collection or treatment; Increase water treatment capabilities; Incorporate backup generators and fuels sources, as applicable, in a location safe from flooding, for the water infrastructure system to provide a sustained minimal level of water services in the event of a power outage.
	S-1A-16	Prepare for worst case scenarios regarding extreme precipitation.	Stockpile response materials and store them near areas that will likely need rapid repairs after an extreme rainfall event (e.g., pre-position emergency power generation capacity, portable pumps, and debris removal equipment); Implement early warning systems for extreme weather events.
	S-1A-17	When siting and orienting a facility or asset, consider flood risk from increased precipitation and extreme precipitation events.	Avoid development in erosion zones and floodplains; Select a site at higher elevation.
	S-1A-18	Maintain or improve ecosystem health to act as a natural barrier to increasing precipitation and extreme precipitation events.	Avoid or minimize development on key ecosystem areas (e.g., wetlands, trees) to maintain natural barriers; Revegetate with native and/or deep rooted plants to improve stormwater drainage and flooding; Develop a plan for future ecosystem health; If there is tree planting, plant tree species that are adapted to current and/or future climate conditions (see: https://extension.umn.edu/creating-climate-ready-woodlands/recommended-trees).
	S-1A-19	Incorporate stormwater green infrastructure into site plans to mimic the water storage of natural systems.	Plan installation of bioswales, tree trenches, bioretention cells, raingardens, etc. sized to better address more frequent intense precipitation events.
	S-1A-20	Develop post-storm plans for the construction site.	Develop a coordination plan to clear roads and drainage systems from debris after extreme precipitation events.
	S-1B-01	Ensure hazardous materials are stored in temperature-controlled environments to accommodate for high temperatures and heatwaves.	Insulate storage areas; Install temperature monitoring systems with alarms to alert staff; Conduct regular inspections and maintenance of storage facilities.
	S-1B-02	Consider alternative pavement surfaces and materials that are more heat-resistant to reduce heat impacts and surface temperatures.	Use light-colored asphalt pavement to reduce heat absorption and reflect radiation; Use materials for railway tracks and stations that are resistant to higher heat to prevent buckling and kinks; Install permeable surfaces especially for low-traffic areas such as roadside parking (along curbs) and parking lots.
	S-1B-03	Incorporate flexible pavement design to accommodate thermal expansion and prevent buckling from high temperatures and heatwaves.	Design roads with additional thermal expansion joints; Incorporate polymer-modified asphalt in the pavement mix; Apply reflective coatings.
	S-1B-04	Regularly monitor the condition of roadways and conduct maintenance to address wear and tear from high temperatures and heatwaves.	Implement regular maintenance schedules to address increased wear and tear; As needed, increase the use and frequency of preventative maintenance treatments (e.g., seal coats, crack seals); Install pavement sensors for extreme heat and road failure.
	S-1B-05	Retain mature trees as part of design and during construction.	Inventory trees; mark boundaries around trees to avoid compaction and damage to trunks and roots.
	S-1B-06	Use cooling technologies to reduce surface temperatures during periods of high temperatures and/or heatwaves.	Use reflective coating; Use high-reflectivity hardscape; Decrease impervious surfaces and/or install permeable surfaces; Incorporate green infrastructure (e.g., green roofs); Maintain and/or expand urban tree canopy.
	S-1B-07	Consider and adjust to changes in the distribution and prevalence of heat-tolerant pests by incorporating changes into pest management for buildings and infrastructure.	Resist intrusion of termites as hardiness zones move north.
	S-1B-08	Use building construction materials that maintain indoor temperatures and/or are resilient to increasing temperatures during high heat conditions and heatwaves.	Update building insulation for higher heat thresholds; Use reflective roofing materials; Install energy efficient windows (e.g., double-glazed windows); Install green roofs and/or green walls; Use light-colored building materials (e.g., cool roofing and sliding materials); Optimize natural ventilation.
	S-1B-09	Consider and adjust to changes to agricultural systems because of increased temperatures, including the distribution and prevalence of heat-tolerant pests, heat-affected cropping patterns, and water management needs.	Monitor changes in distribution/prevalence of pests in the region; Plant cover crops; Install sensors to monitor soil moisture levels.

	S-1B-10	Install cooling systems to protect livestock from heat stress during periods of high temperatures and/or heatwaves.	Install shade structures; Install fans or ventilation systems; Install misters or sprinklers; Install water troughs; Incorporate reflective materials for shelter roofing.
	S-1B-11	Consider livestock breeds that are more tolerant to heat.	Introduce heat-tolerant cattle breeds.
	S-1B-12	Consider how higher temperatures and heatwaves may increase decomposition rates and the need to improve waste management practices.	Install a temperature monitoring system to detect and manage heat build-up; Install waste infrastructure that can withstand higher temperatures such as landfill liners, odor control strategies for organics composting.
	S-1B-13	Ensure subsurface infrastructure (e.g., pipes, SSTA installation) can withstand high temperatures and heatwaves.	Install sensors to monitor ground temperatures; Use thermal insulation; Implement cooling systems (e.g., ventilation shafts, cooling pipes); Install temperature sensors for monitoring.
	S-1B-14	Ensure there is adequate redundancy and/or backup energy resources available to maintain necessary operations during increased cooling demand and/or an extreme heat event.	Implement renewable energy and smart grid technology to optimize energy distribution and reduce outages; Develop off-grid sources for redundant power supply; Install easy hookups for temporary power; Install backup generators; Diversify energy sources such as by installing renewable energy; Install battery storage; Incorporate multiple power supplies; Implement a microgrid with integrated energy storage systems; Join a community energy project to pool resources; Utilize a combined heat and power (CHP) system.
	S-1B-15	Harden the energy infrastructure systems to withstand projected increasing temperatures and heatwaves.	Increase tension in transmission lines to reduce sag; Add external coolers to transformers; Use more heat-resistant materials (e.g., high-temperature conductors); Bury lines/cables.
	S-1B-16	Upgrade the electrical systems to handle increased cooling demand especially from extreme heat events.	Consider renewable energy and smart grid technology to optimize energy distribution and reduce outages.
	S-1B-17	Provide cooling systems for critical infrastructure or equipment sensitive to overheating during periods of high temperatures and/or heatwaves.	Install back up air conditioning units; Use battery-powered equipment which is less prone to overheating than gas-powered machinery.
	S-1B-18	Implement cooling strategies for construction equipment vulnerable to high temperatures.	Provide cooling systems for equipment sensitive to overheating; Use battery-powered equipment which is less prone to overheating than gas-powered machinery.
	S-1B-19	Increase the frequency of maintenance checks to ensure construction equipment is functioning optimally in high temperatures and during heatwaves.	Regularly check fluid levels, tire pressure, and hydraulic systems.
	S-1B-20	Use cooling technologies to reduce heat impact on waste management systems during periods of high temperatures and/or heatwaves.	Implement cooling systems for waste facility; Install heat-resistant and sealed containers to store waste; Install green infrastructure on the facility (e.g., green roof; increased vegetation).
	S-1B-21	Maintain or improve ecosystem health to mitigate heat from increasing temperatures and heatwaves.	Avoid or minimize development on key ecosystem areas (e.g., wetlands, trees) to maintain natural cooling systems; Develop a plan for future ecosystem health; If there is tree planting, plant tree species that are adapted to current and/or future climate conditions (see: https://extension.umn.edu/creating-climate-ready-woodlands/recommended-trees).
	S-1B-22	Provide heat protective measures for construction staff who may be exposed to heat during work duties.	Consider different attire/uniforms, more breaks, more shade, more hydration stations, or telecommuting options.
	S-1C-01	Consider impact of increased freeze/thaw cycles for design and construction of building and road foundations.	Use frost-resistant materials (e.g., frost-resistant concrete and asphalt) to minimize damage like cracking; Insulate foundations; Construct deeper foundations; Conduct regular maintenance and monitoring to inspect and repair damage.
	S-1C-02	Consider changing thawing conditions when selecting or upgrading pipes.	Install PVC water pipes (rather than metal cast iron pipes) which are less expensive and easier to install than iron, to minimize breaks and ensure structural integrity.
	S-1C-03	Regularly monitor the conditions of the construction site, roadway, etc. and conduct maintenance to reduce any degradation from increased temperatures and/or freeze/thaw cycles.	Implement regular monitoring and maintenance of potholes; Track thawing with sensors.
	S-1D-01	For landscaping, use drought-tolerant plants or xeriscaping.	Plant more drought-tolerant options (e.g., succulents); Apply mulch around plants; Incorporate hardscaping (e.g., rocks).
	S-1D-02	Consider more drought-tolerant plants for the farms and incorporate drought insights into water management practices.	Select more drought-tolerant plants like millet; Plant cover crops to maintain moisture; Implement efficient irrigation systems (e.g., drip irrigation); Install soil moisture sensors; Install rainwater harvesting infrastructure; Incorporate drought forecasts into farm planning to adjust planting schedules and irrigation accordingly.
	S-1D-03	Reduce agricultural and irrigation water use/needs to account for drought conditions.	Adopt micro-irrigation technology (e.g., drip irrigation); Install soil moisture sensors; Plant more drought-resistant crops; Apply mulch; Implement rainwater harvesting systems; Plant cover crops to retain moisture.
	S-1D-04	Install water storage to retain rainfall on the land for use to meet agricultural and irrigation needs.	Convert low spots that are currently in crop production but prone to flooding / washout into water storage areas.
	S-1D-05	Incorporate water-efficient practices/technology into the waste management facility to account for drought conditions.	Use greywater for cleaning; Install rainwater harvesting systems; Use alternative water sources (e.g., reclaimed water).
	S-1D-06	Ensure water infrastructure can withstand drought conditions.	Build infrastructure needed for aquifer storage and recovery; Diversify sources of water supply.
	S-1D-07	Use technologies and strategies that recycle water for water management systems to account for drought conditions.	Establish systems to recycle water and use reclaimed water; Plumb buildings for greywater separation and reuse; Install wastewater treatment technology (e.g., a Living Machine) to recycle wastewater; Install greywater purification and reuse systems; Develop a closed-loop system.
	S-1D-08	Install water-saving technologies indoors to account for drought conditions.	Use water-efficient household appliances (e.g., low-flow toilets, showerheads, and front-loading washers); Install water meters.
	S-1D-09	Install water-saving technologies outdoors to account for drought conditions.	Install rainwater harvesting tanks; Plant native, deep-rooted, and/or drought-tolerant plants.

Mitigation Measures (Step 5)

Use the filters in the table below to identify potential mitigation measures to reduce GHG emissions from the proposed project. Use the column on the far left to select measures you plan to implement. Select Generate PDF button once you've made your desired selections.

Generate PDF

Select All Unhidden Measures

Reset all Selected Measures

Select	Emissions Source	Phase	ID	Measure Title	Measure Description
	Material inputs	Construction	M-1A-01	Use Sustainable Building Materials	Ensure sustainable building materials comprise at least 20% of total construction materials by volume weight. Sustainable building materials have a less carbon-intensive production process compared to their non-sustainable counterparts. This strategy could include the use of Environmental Product Declarations in bid decisions to ensure the most sustainable materials are procured. This strategy is general to any building material. See 1A-2 through 1A-6 for measures specific to wood, pavement, and cement.
	Material inputs	Construction	M-1A-02	Source Wood Materials from Urban Wood Re-Use Program	Source wood materials from urban wood re-use programs. In areas where removed trees are sent to landfills, they decompose and contribute to methane emissions. Wood re-use programs extend a tree's lifetime by converting it into a range of products and prolonging the sequestration benefit. Re-uses range from logs, lumber, woodchips, mulch, compost, biochar, animal fuel, paper products, engineered wood, furniture, and cellulosic ethanol.
	Material inputs	Construction	M-1A-03	Sustainable Pavements	Use lower-impact materials specially designed for roadway surfaces without compromising the pavement's ability to meet its engineering purposes. For example, warm-mix asphalt (WMA) production methods use temperatures that are 30 to 120 degrees Fahrenheit lower than those of traditional hot-mix asphalt. Because less energy is needed to heat the asphalt mix, less fuel is needed to produce WMA. Fuel consumption during WMA manufacturing is typically reduced by 20%. Sustainable pavements can also result in extended pavement life thereby reducing the need for energy-intensive maintenance.
	Material inputs	Construction	M-1A-04	Purchase Cement from Manufacturers using Low-Carbon Mix Design for Calcination	Purchase cement from manufactures that use low-carbon mix design. Using a low-carbon mix design in addition to renewable power sources and carbon capture can significantly reduce emissions from calcination. The seven most impactful low-carbon mix alternatives, listed from smallest to largest carbon footprint, are 1) granulated blast furnace slag; 2) limestone calcined clay cement; 3) fly ash; 4) Portland limestone cement; 5) biochar; 6) early-stage carbon curing; and 7) recycled concrete aggregate.
	Material inputs	Construction	M-1A-05	Purchase Cement from Efficient Cement Manufacturers	Purchase cement from manufacturers that have implemented measures to improve their production efficiency. Efficiency measures for cement manufacturing can reduce the demand for fuel by addressing the production process itself (such as switching from inefficient wet kilns to dry ones) or through technical and mechanical improvements (such as preventive maintenance to repair kiln leaks).
	Material inputs	Construction	M-1A-06	Purchase Cement from Manufacturers Using Alternative Fuels	Purchase cement from manufacturers that use alternative fuels in their production method. Indirect emissions from burning fossil fuels to heat the kiln can be reduced by switching to alternative fuels, including natural gas, biomass, and waste-derived fuels such as tires, sewage sludge, and municipal solid wastes.
	Material inputs	Construction	M-1A-07	Require Environmentally Responsible Purchasing	Implement an environmentally responsible purchasing plan. Examples of environmentally responsible purchases include but are not limited to: purchasing products made from recycled materials or with sustainable packaging; purchasing post-consumer recycled paper, paper towels, and stationery; purchasing and stocking communal kitchens with reusable dishes and utensils; choosing sustainable cleaning supplies; purchasing products from restaurants, farms, or ranches that source materials or goods from locations that use soil conservation practices; and leasing equipment from manufacturers who will recycle the components at their end of life.
	Material inputs	Construction	M-1A-08	Use Recycled Asphalt Pavement	Use recycled concrete aggregate (RCA) or recycled asphalt pavement (RAP) in place of traditional asphalt. RCA and RAP help reduce energy consumption and thus GHGs of a project by displacing the volume of new asphalt.
	Transportation of material inputs	Construction	M-1B-01	Use Local Building Materials	Ensure locally sourced or recycled construction materials comprise at least 20% of total construction materials by volume weight. Choosing locally made and distributed products reduces the distance required to transport the products from the distribution or manufacturing center to the project, thus reducing GHG emissions associated with transportation.
	Transportation of material inputs	Construction	M-1B-02	Use SmartWay Certified Trucks	Use U.S. Environmental Protection Agency SmartWay certified trucks for deliveries and equipment transport. The SmartWay truck and trailer certification program sets voluntary standards for trucks and trailers that exhibit the highest fuel efficiency and emissions reductions. These tractors and trailers are outfitted at point of sale or retrofitted with equipment that significantly reduces fuel use and emissions including idle reduction technologies, improved aerodynamics, automatic tire inflation systems, advanced lubricants, advanced powertrain technologies, and low rolling resistance tires.
	Transportation of material inputs	Construction	M-1B-03	Limit Delivery Windows	Limit deliveries of materials and equipment to the site to off-peak traffic congestion hours. This will avoid congested vehicle travel, which generates more emissions per mile than travel at free-flow speeds.
	Transportation of material inputs	Construction	M-1B-04	Evaluate Efficient Delivery Options	Evaluate the feasibility of using freight locomotives and other more efficient modes of transportation to deliver construction equipment and vehicles instead of on-road haul trucks. More efficient modes of transportation will reduce delivery emissions and may reduce transportation costs.
	Employee commuting	Construction	M-1C-01	Use Local Construction Contractors	Maximize use of local construction contractors. Contracting construction work with a local company reduces vehicle miles traveled associated with construction employee commute distances and, therefore, reduces emissions from vehicle fuel combustion. Local hire provisions may cover the entire workforce, or a percentage of the workforce based on the project size or employment type.

	Employee commuting	Construction	M-1C-02	Develop a Ride Share Program for Construction Contractors	Develop a project specific ride share program to encourage carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes. Ride share programs reduce employee commute vehicle miles traveled, which in turn reduces emissions from fuel combustion.
	Construction equipment	Construction	M-1D-01	Use Renewable Diesel	Use renewable diesel in construction equipment and vehicles in lieu of similar vehicles powered by gasoline or diesel fuel. Tailpipe GHG emissions from renewable diesel are identical to tailpipe GHG emissions from conventional diesel; thus, the GHG benefits of renewable diesel come from the fact that it is produced from biomass.
	Construction equipment	Construction	M-1D-02	Use Electric or Hybrid Powered Equipment	Use electric- or hybrid-powered construction equipment over conventional diesel-fueled counterparts. Replacing diesel-powered equipment with electric or hybrid-electric equipment reduces fossil fuel combustion and thus GHG emissions. However, all-electric equipment results in GHG emissions from the electricity used to charge the equipment. The indirect GHG emissions increase from electricity must be calculated in addition to the GHG emissions reduction from displaced fossil fuel combustion to estimate the total net GHG emissions reduction achieved by this measure if using all electric equipment.
	Construction equipment	Construction	M-1D-03	Limit Heavy-Duty Diesel Vehicle Idling	Minimize idling time by requiring that equipment be shut down after five minutes when not in use. Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement. Reducing idling time will reduce emissions from fuel combustion.
	Construction equipment	Construction	M-1D-04	Maintain All Equipment in Proper Condition	Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules should be detailed in an Air Quality Control Plan prior to commencement of construction.
	Construction equipment	Construction	M-1D-05	Implement a Tire Inflation Program	Implement a tire inflation program on jobsites to confirm that equipment tires are correctly inflated. Check tire inflation when equipment arrives on site and every two weeks for equipment that remains on site. Check vehicles used for hauling materials off site weekly for correct tire inflation. Procedures for the tire inflation program should be documented in an Air Quality Management Plan prior to commencement of construction.
	Construction equipment	Construction	M-1D-06	Use Conveyors Instead of Trucks	Move material onsite using electric conveyors instead of diesel trucks. While electric conveyors result in GHG emissions from the electricity used to charge the equipment, these indirect emissions are likely much less than emissions from diesel combustion. The indirect GHG emissions increase from electricity must be calculated in addition to the GHG emissions reduction from displaced fossil fuel combustion to estimate the total net GHG emissions reduction achieved by this measure.
	Construction equipment	Construction	M-1D-07	Use Vehicles with Onroad Engines	Perform on-site material hauling during construction with trucks equipped with on-road engines. On-road certified engines often generate fewer GHG emissions per mile traveled when compared to off-road counterparts.
	Construction equipment	Construction	M-1D-08	Evaluate Potential for On-Site Electrical Service	Confirm all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane, or solar power, to power generators to the maximum extent feasible.
	Construction equipment	Construction	M-1D-09	Use High Efficiency Lighting	Reduce electricity use in temporary construction offices by using high efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business.
	Construction equipment	Construction	M-1D-10	Develop a Water Efficiency Plan for Dust Control	Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping or transporting of water.
	Land use change	Construction	M-1E-01	Create New Open Space with Native Vegetation and Habitat	Convert previously developed areas to vegetated open spaces. By creating new vegetated areas from previously settled land, the project would sequester carbon dioxide that would not have been captured without the land conversion. Trees and other vegetation also incorporate carbon into their biomass during their growth phase (stored carbon). Prior to establishing new vegetation, conduct information gathering to assess the site history, soil type, hydrology, topography, and wildlife populations to determine appropriate native vegetation that will be well adapted to the local environment. Establish project goals, including GHG emission reduction and restoration native pollinator and/or native habitat. Other important goals may include expanding contiguous habitat and wildlife corridors for threatened or endangered species or increasing biodiversity. Create a detailed planting and management plan that describes actions for site preparation, planting, habitat enhancement, water management, and invasive species control. Maximize long-term establishment success by conducting regular monitoring. This may involve tracking plant growth, soil conditions, and wildlife movement. Utilize the monitoring data to perform regular maintenance. Adjust the management plan as needed to keep the site healthy and ensure attainment of project goal(s).
	Land use change	Construction	M-1E-02	Expand Urban Tree Planting	Require tree planting in urban areas. Planting trees sequesters carbon dioxide while the trees are actively growing, thereby reducing GHGs. The amount of carbon dioxide sequestered depends on the type of tree and the duration of the active growing period. Urban trees may also provide shade, which can reduce the urban heat island effect and building cooling demands. Buildings that use less electricity for air conditioning reduce energy consumption and associated indirect GHG emission. The selection of tree type is critical to minimize the use of additional water. Trees that have high water demands that are met through GHG-intensive water (such as water transported over long distances) can impact the amount of GHG reductions achieved by this measure.
	Land use change	Construction	M-1E-03	Clear Vegetation from Area to be Flooded	Reduce the amount of organic material flooded during construction. Flooded areas can result in organic decomposition, which can contribute to methane emissions.

	Land use change	Construction	M-1E-04	Land Agreements for Tree Removal	Engage landowners to develop a strategy for composting, chipping, processing, or reusing trees removed from their properties. The strategy should prioritize cost-effective options that minimize GHG emissions from stored tree carbon. If appropriate, consider retaining stumps or logs on the project site to improve soil health and support wildlife habitat.
	Land use change	Construction	M-1E-05	Wetland Restoration	Restore wetlands to improve their function and ability to sequester GHG emissions. For example, rewet drained wetlands, remove non-native plans, exclude livestock, and plant native wetland species. Because wetlands can also represent a GHG source, ensure the restored wetland and selected restoration strategies will effectively reduce GHG emissions.
	Land use change	Construction	M-1E-06	Afforestation	Plant trees on previously deforested land.
	Land use change	Construction	M-1E-07	Establish a Carbon Sequestration Project	Establish a carbon sequestration project. Carbon emissions are sequestered by embedding the carbon in a structure that will hold the emissions and keep them out of the atmosphere. Sequestration can happen through biological, chemical, or physical processes.
	Construction waste	Construction	M-1F-01	Maximize Deconstruction during Site Preparation	Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible. This can also reduce transportation trips required to transport waste products, which in turn reduces vehicle fuel combustion and associated emissions.
	Construction waste	Construction	M-1F-02	Recycle Waste Paint	Recycle waste paint during construction. Recycling waste paint reduces GHG emissions from raw material sourcing and paint production. If the process of recycling waste paint is less carbon-intensive than the processes required to harvest and produce new paint, recycling results in a net reduction in GHG emissions.
	Construction waste	Construction	M-1F-03	Recycle Demolished Construction Material	Recycle general construction waste. Recycling demolished construction material reduces GHGs by displacing new construction materials, thereby reducing the need for new raw material acquisition and manufacturing. If the process of recycling construction materials is less carbon-intensive than the processes required to harvest and produce new construction materials, recycling results in a net reduction in GHG emissions. Using local recycled construction material would also reduce emissions associated with the transportation of new construction materials, which are typically manufactured farther away from a project site. Finally, recycling avoids sending materials to landfills. Wood-based materials decompose in landfills and contribute to methane emissions.
	Building energy consumption	Operation	M-2A-01	Require Energy Efficient Appliances	Install ENERGY STAR-certified appliances that exceed the energy efficiency of conventional appliances. By committing to more efficient appliances, the building's energy use is reduced, thereby reducing GHG emissions.
	Building energy consumption	Operation	M-2A-02	Install Alternative Type of Water Heater in Place of Gas Storage Tank Heater	Install water heaters that are less emissions intensive than a natural gas conventional storage tank water heater. Alternatives may include electric conventional storage tanks, solar water heaters with natural gas backup, or solar water heaters with electric backup. Each alternative reduces GHG emissions in a slightly different way. An electric storage tank heater displaces natural gas consumption with electricity use, replacing more emissions-intensive natural gas with less emissions-intensive electricity. A solar water heater with electric backup reduces GHG emissions by displacing natural gas with zero-emission solar energy when water is heated by the system's solar collectors and grid electricity when the back-up function is utilized. A solar water heater with natural gas backup reduces emissions by displacing natural gas with solar energy when water is heated by the solar collectors.
	Building energy consumption	Operation	M-2A-03	Limit Wood Burning Devices and Natural Gas/Propane Fireplaces	Prohibit installation of any wood burning devices (i.e., woodstoves and fireplaces) or natural gas or propane fireplaces. This avoids the combustion of biomass, natural gas, and propane, thereby reducing associated biogenic and non-biogenic GHG emissions. The most efficient alternatives to wood burning devices or gas fireplaces are electric fireplace inserts and electric heat pumps.
	Building energy consumption	Operation	M-2A-04	Install Electric Ranges in Place of Gas Ranges	Install electric ranges (i.e., cooktop plus oven) in place of gas ranges. An electric range displaces natural gas consumption with electricity use, replacing a more emissions-intensive fossil fuel-based source of energy with electricity from the grid that is increasingly transitioning to renewable sources.
	Building energy consumption	Operation	M-2A-05	Install Electric Heat Pumps	Install electric heat pumps as alternatives to conventional furnaces or air conditioners. Electric heat pumps use electricity to transfer heat between cool and warm spaces to either provide cooling or heating. When cooling is needed during the summer months, the pumps move warmer inside air to outside. The pumps operate in reverse during the winter, moving warmer outdoor air into the building to provide heat. Because heat pumps move warm air instead of generating heat, they are more efficient than conventional heating and cooling systems. When electric heat pumps replace fossil-fuel heating or cooling sources, they achieve a dual efficiency and decarbonization benefit. The most common types of heat pumps collect heat from the air (are air-to-air), water (water-to-air), or ground (geothermal-to-air). The performance and emissions reductions achieved by electric heat pumps depend heavily on the system type, cooling and heating loads, climate zone, season, and other project-specific variables.
	Building energy consumption	Operation	M-2A-06	Require Energy Efficient Boilers	Install boilers with higher energy efficiencies than what is required by regulation. Improving boiler efficiency decreases fuel consumption for the same amount of energy output, thereby reducing associated GHG emissions
	Building energy consumption	Operation	M-2A-07	Install Whole-House Fans	Install whole-house fans in new construction. Whole-house fans draw cooler outdoor air through open windows, exhaust the warmer air into the attic, and then expel the air outside through attic vents. Whole-house cooling using a whole house fan can substitute for an air conditioner most of the year in most climates, resulting in a reduction in emissions associated with building energy use. Whole-house fans may be inappropriate in locations near sources that generate air pollutants during the evening hours, such as major roads and freeways.

	Building energy consumption	Operation	M-2A-08	Install Cool Roofs and/or Cool Walls	Install cool roofs and/or walls in place of dark roofs and/or conventional walls. Cool roofs have been designed to reflect more sunlight and absorb less heat than a standard roof, keeping buildings cooler in the summertime and thus reducing air-conditioning loads. Complementary to cool roofs, cool walls achieve a similar result through using more reflective paints or materials. This reduces the electricity needed to provide cooling but can potentially increase the energy needed to provide winter heating, thereby reducing associated GHG emissions depending on the project parameters (e.g., climate, level of implementation, carbon intensity of local electricity provider). However, the winter heating penalty may be small with lower levels of winter sunlight due to shorter daylight hours and more overcast skies.
	Building energy consumption	Operation	M-2A-09	Install Green Roofs in Place of Dark Roofs	Install green roofs in place of dark roofs. Green roofs consist of a layer of vegetation on top of buildings, which provides natural insulation and climate control benefits. This reduces the electricity and natural gas needed to provide cooling and heating, thereby reducing associated GHG emissions.
	Building energy consumption	Operation	M-2A-10	Install Cool Pavements	Install cool pavement in place of dark pavement. Cool pavement helps to lower ambient outdoor air temperatures when compared to dark-colored, heat-absorbent pavement such as asphalt. This reduces the electricity needed to provide cooling, thereby reducing associated GHG emissions, depending on the project parameters (e.g., climate, carbon intensity of local utility).
	Building energy consumption	Operation	M-2A-11	Improve Insulation Standards	Use building insulation that exceeds minimum code standards. Improving insulation reduces energy demand for both heating and cooling and thus reduces GHG emissions from reduced energy consumption. Adequate insulation improves buildings' thermal regulation as it helps avoid extreme heat gains and losses.
	Building energy consumption	Operation	M-2A-12	Limit Window-To-Wall Ratio	Limit the window-to-wall ratio (WWR) of new buildings. Buildings with fully glazed façades are dependent on heating, ventilation, and air conditioning and tend to be highly exposed to solar. The optimal WWR for energy efficiency depends on the climate and orientation of the building.
	Building energy consumption	Operation	M-2A-13	Maximize Solar Shading	Maximize building shade during the summer months. Shading is a passive and inexpensive way to reduce summer heat loads, and thus the need for air conditioning. Examples include vegetation with seasonal variation and envelope elements that reflect natural light.
	Building energy consumption	Operation	M-2A-14	Optimize Natural Ventilation	Maximize natural building ventilation in new construction. Façade design allows natural ventilation at night to cool the building and reduce peak daytime temperatures in summer. This in turn reduces the need for air conditioning, which reduces building electricity consumption and associated emissions.
	Building energy consumption	Operation	M-2A-15	Obtain Third-party HVAC Commissioning and Verification of Energy Savings	Require third-party review of heating ventilation and air conditioning (HVAC) systems to ensure proper installation and construction of energy reduction features. HVAC commissioning and third-party verification of energy savings may be obtained for thermal efficiency components including HVAC systems, insulation, windows, and water heating.
	Building energy consumption	Operation	M-2A-16	Require Higher Efficacy Public Street and Area Lighting	Install higher efficacy public street and area lighting in place of typical or existing lamps. Installing more efficacious lamps, such as light-emitting diodes, will use less electricity while producing the same amount of light, thereby reducing the associated indirect GHG emissions.
	Building energy consumption	Operation	M-2A-17	Replace Incandescent Traffic Lights with LED Traffic Lights	Replace incandescent traffic lights with more energy-efficient light-emitting diode (LED) traffic lights. Installing LEDs reduces electricity demand and thus results in a reduction in indirect GHG emissions.
	Building energy consumption	Operation	M-2A-18	Procure Electricity from Lower Carbon Intensity Power Supply	Procure electricity with a lower carbon intensity than the primary product offered by the local provider (often an investor-owned utility). This would displace the electricity demand that would ordinarily be supplied by the local electricity provider's energy mix. Electricity provided by local electricity providers has varying carbon intensities based on the portfolio of energy sources. Procurement of electricity of a lower carbon intensity would displace the emissions that would have been produced had the electricity been supplied by the default energy mix and thus results in a reduction in GHG emissions. Green power supply options include utility green power products, community choice aggregation, shared renewables (e.g., community solar), and power purchase agreements.
	Building energy consumption	Operation	M-2A-19	Require All-Electric Development	Install all-electric appliances and end uses. Using electric instead of natural gas-powered appliances and end uses replaces a more emissions-intensive fossil fuel source of energy with a less emissions-intensive source of energy, electricity from the grid that is increasingly transitioning to renewable sources.
	Building energy consumption	Operation	M-2A-20	Require Zero Net Energy Buildings	Design and construct zero net energy (ZNE) buildings. A ZNE building foremost reduces GHG emissions by reducing energy use through more efficient design. Further, the building avoids GHG emissions either by using no emissions-generating energy sources or offsetting the building energy emissions by exporting emission-free energy (typically from onsite renewables).
	Building energy consumption	Operation	M-2A-21	Require Renewable-Surplus Buildings	Install onsite renewable energy in an amount that offsets more emissions than the amount generated from the development's electricity use and onsite fuel consumption. Installing zero-emission renewable energy displaces emissions from grid electricity that would otherwise be used, thereby reducing GHG emissions. Implementation of this measure would result in buildings that reduce more GHG emissions than they generate through surplus generation of energy from renewables, sometimes known as carbon-negative buildings. The amount of renewable energy required for a building to have net negative GHG emissions is largely determined by the number of emissions from onsite fuel consumption and the carbon intensity of the local electricity provider.

	Building energy consumption	Operation	M-2A-22	Establish Onsite Renewable Energy Systems	Generate electricity from an onsite renewable or zero-emission power system. This displaces the electricity demand that would ordinarily be supplied by the local electricity provider. Electricity generation provided by local electricity providers have varying carbon intensities based on the portfolio of energy sources. Some renewable energy systems, such as fuel cells, may not be completely GHG emissions-free, but may still have lower emissions than the electricity provided by the local electricity provider (unless the electricity provider has a relatively high renewable portfolio), thereby reducing GHG emissions. Zero-emissions power systems, such as solar panels, result in the greatest magnitude of emissions reductions. Onsite renewable systems can also provide back-up power as an alternative to diesel generators in the event of grid power outages or demand response events.
	Building energy consumption	Operation	M-2A-23	Use Renewable Natural Gas or Green Hydrogen Fuel	Use renewable natural gas (RNG) in buildings instead of traditional natural gas. RNG has much lower carbon emissions and can be used in standard gas appliances like furnaces and water heaters. Alternatively, consider green hydrogen as a primary fuel source. Use of hydrogen would likely require some buildings retrofits or updates to appliances.
	Building energy consumption	Operation	M-2A-24	Encourage Residential Participation in Existing Demand Response Program(s)	Market and promote the local utility's manual (i.e., behavioral) demand response program(s) to encourage participation from residents in the project area. During demand response events, program users shift or conserve electricity, thereby reducing the associated indirect GHG emissions. Methods of engaging customers in demand response efforts include offering time-based rates, such as time-of-use pricing, critical peak pricing, variable peak pricing, real-time pricing, and critical peak rebates. Users are encouraged to respond to time-based rates or other forms of financial incentives with smart phone app, email, phone call, and/or text notifications.
	Building energy consumption	Operation	M-2A-25	Use Microgrids and Energy Storage	Design, install, and manage a microgrid. Microgrids offer the opportunity to deploy more zero-emission electricity sources, thereby reducing GHG emissions. The microgrid manager (e.g., local energy management system) can balance generation from non-controllable renewable power sources, such as solar, with distributed, controllable generation, such as natural gas-fueled combustion turbines. They can also use energy storage and batteries in electric vehicles to balance energy distribution and usage within the microgrid.
	Building energy consumption	Operation	M-2A-26	Provide Battery Storage	Strategically deploy battery storage. While energy storage has no direct emissions effect, when deployed strategically, energy storage can make the grid more flexible, unlocking renewable energy and reducing GHG emissions. When deployed non-strategically, owners of energy storage assets are more likely to charge their facilities during off-peak periods when power prices are lower, in order to supply power during more expensive peak hours. Off-peak generation times such as nighttime hours are more likely to be dominated by conventional power sources, which, except for nuclear and hydropower, are likely to be more emissions intensive.
	Building energy consumption	Operation	M-2A-27	Utilize a Combined Heat and Power System	Use combined heat and power (CHP) systems in place of separate heat and power (SHP) systems. For the same level of power output, CHP systems use less input energy than traditional SHP generation, resulting in lower GHG emissions. In traditional SHP systems, heat created as a by-product is wasted as it is released into the surrounding environment. CHP systems harvest thermal energy and use it to heat onsite uses or for processes in proximity, which reduces the amount of natural gas or other fuel that would otherwise be combusted for heating or for use in those processes. CHP systems also result in a reduced demand for electricity from the grid, which displaces the GHG emissions from the production of electricity from the grid.
	Building energy consumption	Operation	M-2A-28	Utilize Biomass Energy	Install new biomass or biofuel electricity generation (or cogeneration). Although the direct combustion emissions for biofuels are generally on-par with other forms of fossil fuel energy, biofuels have a lower life-cycle carbon intensity due to the uptake of carbon from plants used to produce that fuel. A reasonable reference point for this carbon intensity would be the average carbon intensity of the electricity in the utility that would receive power from this new biomass plant.
	Natural gas and petroleum systems	Operation	M-2C-01	Conduct Regular Maintenance	Implement a preventative maintenance schedule to replace worn-out components like gaskets, seals, and packing on valves and fittings. Regularly tighten all connections on pipelines, tanks, and equipment. Proper maintenance can avoid leaks, which in turn reduces fugitive emissions.
	Natural gas and petroleum systems	Operation	M-2C-02	Ensure Proper Systemwide Management	Develop a plan to properly and efficiently maintain systemwide performance. For example, ensure proper pressure management, optimize maintenance schedules with preventative maintenance procedures, and implement procedures for proper valve operation and isolation.
	Natural gas and petroleum systems	Operation	M-2C-03	Design New Pipelines to Minimize Leaks	Use advanced materials during pipeline construction, such as high-performance polymers. Consider using advanced materials for gaskets and seals with enhanced leak resistance.
	Natural gas and petroleum systems	Operation	M-2C-04	Install Low-Bleed Pneumatic Controllers	Install low-bleed pneumatic controllers instead of high-bleed ones to reduce fugitive leaks.
	Natural gas and petroleum systems	Operation	M-2C-05	Use Vapor Recovery Units	Use vapor recovery units to capture fugitive emissions during tank loading/unloading.
	Industrial processes	Operation	M-2D-01	Implement Measures to Improve Industrial Electrification, Decarbonization, and Efficiency	While industrial processes vary significantly across types of industry, nearly all industrial processes have opportunities to enhance their thermal or electrical efficiency. Some industrial operations can be cost-effectively decarbonized through electrification tools from heat pumps for low to medium temperature ranges to thermal storage for high temperature processes, and by changing industrial processes that generate GHG emissions. Suitability for electrification might differ by use case, and such efforts are well complemented by further changes to chemical processes, production techniques to reduce process emissions, and/or carbon capture storage (see Measure 1E-4). Deploying industrial electrification, decarbonizing, and improving efficiency can take many forms including: • Build more efficient plants and reduce the amount of electricity purchased. • Use natural gas or waste-derived fuels. • Replace coal burning production facilities with biomass or hydrogen powered facilities. • Expand onsite renewable energy production to supply a portion of onsite electrical demand. • Recover and use waste heat.

	Industrial processes	Operation	M-2D-02	Implement Measures to Reduce GHG Emissions from Cement Production	Implement Measure 2D-1 and consider the following actions specific to the cement industry to further reduce GHG emissions. • Use less clinker in the cement mix. • Use alternative materials to reduce the amount of high-emission clinker. • Use carbonation by cement systems under appropriate conditions.
	Industrial processes	Operation	M-2D-03	Implement Measures to Reduce GHG Emissions from Lime Production	Implement Measure 2D-1 and consider the following actions specific to the lime industry to further reduce GHG emissions. • Use more efficient kilns with direct emission separation technologies. • Increase the commercial use of lime kiln dust, a byproduct of lime manufacturing, as a soil stabilizing agent. • Use alternative fuels, like hydrogen or oxyfuel, in new kiln technologies.
	Industrial processes	Operation	M-2D-04	Implement Measures to Reduce GHG Emissions from Glass Production	Implement Measure 2D-1 and consider the following actions specific to the glass industry to further reduce GHG emissions. • Improve furnace design and insulation to reduce energy consumption and associated emissions. • Use oxyfuel burners, which can reduce energy consumption in glass melting furnaces by up to 20%. • Recycle desulfurization waste as a raw material for glass production.
	Industrial processes	Operation	M-2D-05	Implement Measures to Reduce GHG Emissions from Metals Production	Implement Measure 2D-1 and consider the following actions specific to the metals industry to further reduce GHG emissions. • Reuse and recycle metals scraps. • Improve energy efficiency through continuous casting and rolling, energy recovery, and advanced processes. • Use hydrogen in steelmaking processes. • Use Electric Arc Furnace to heat materials like pig iron, steel scraps, and direct reduced iron (DRI) product with electricity. • Use DRI to directly reduce iron ore in solid-state.
	Industrial processes	Operation	M-2D-06	Implement Measures to Reduce GHG Emissions from Chemicals Production	Implement Measure 2D-1 and consider the following actions specific to the chemicals industry to further reduce GHG emissions. • Use solvent recyclers to reduce reliance on virgin solvent makeup, which eliminates transportation-related emissions and waste processing emissions. • Use heat integration solutions like high-temperature heat pumps, steam mechanical vapor recompression, and heat separation to increase the utilization of primarily generated heat. • Utilize improved platinum-based catalysts with higher selectivity towards nitric oxide (NO) production and reduced nitrous oxide (N2O) formation during the ammonia oxidation stage. • Precisely control reaction temperature and pressure within the ammonia oxidation reactor to minimize N2O production. • Install a dedicated catalyst system between the ammonia oxidation stage and the absorption tower to decompose N2O before it reaches the final tail gas.
	HFC leakage	Operation	M-2E-01	Use Alternative Refrigerants Instead of High-GWP Refrigerants	Replace high-global warming potential (GWP) refrigerants with lower-GWP refrigerants (e.g., natural refrigerants such as carbon dioxide, ammonia, and hydrocarbons, or next generation low-GWP synthetic refrigerants like hydrofluoroolefin-1234yf) in refrigeration and air conditioning equipment. When emitted into the atmosphere, high-GWP refrigerants (e.g., hydrofluorocarbons) absorb significantly more heat than carbon dioxide on a mass basis, resulting in larger global warming effects. Shifting to lower-GWP refrigerants reduces the potency of refrigerant leaks, decreasing GHG emissions.
	HFC leakage	Operation	M-2E-02	Install Secondary Loop and/or Cascade Supermarket Systems in Place of Direct Expansion Systems	Replace conventional direct expansion systems in supermarkets with indirect systems such as secondary loop and cascade systems. Indirect systems employ a primary and secondary refrigerant or heat transfer fluid. The primary refrigerant remains in the machine room and cools the secondary fluid, which is then pumped throughout the store to cool products. Another type of indirect system is a cascade system, which contains two refrigeration systems that share a common heat exchanger. By either confining hydrofluorocarbons to the machinery room as the primary refrigerant or removing hydrofluorocarbons entirely, these systems require significantly lower refrigerant charge and have lower leak rates than conventional direct expansion systems. Decreasing the refrigerant charge and leak rates results in a reduction of potential direct GHG emissions.
	HFC leakage	Operation	M-2E-03	Install Transcritical CO2 Supermarket Systems in Place of High-GWP Systems	Replace conventional direct expansion systems in supermarkets with carbon dioxide (CO2) transcritical systems. CO2 transcritical systems use CO2, which has a global warming potential (GWP) of 1 and a lower leakage rate than typical conventional direct expansion systems. By reducing annual leak rates and replacing high-GWP refrigerants with CO2, these systems result in a reduction of potential direct GHG emissions. CO2 transcritical systems work most efficiently in cooler climates; but can also be used in warmer climates.
	HFC leakage	Operation	M-2E-04	Install Microchannel Heat Exchangers in A/C Equipment in Place of Conventional Heat Exchanger	Replace conventional heat exchangers in air conditioning (A/C) equipment (e.g., unitary A/C) with microchannel heat exchangers (MCHX). A/C equipment using MCHX require 35 percent to 40 percent less refrigerant than those using conventional heat exchangers. The reduction in refrigerant charge in A/C equipment results in a reduction of potential GHG emissions.
	HFC leakage	Operation	M-2E-05	Reduce Service Leak Emissions	Improve refrigerant servicing technologies and practices to reduce refrigerant emissions during equipment servicing. It is estimated that recovering refrigerants can reduce emissions in servicing by up to 95 percent. Equipment should only be serviced by qualified technicians certified under Section 608 of the Clean Air Act. Implementing more widespread and thorough refrigerant recovery practices while servicing refrigeration and A/C systems must go beyond regulatory requirements.
	HFC leakage	Operation	M-2E-06	Reduce Operational Leak Emissions	Deploy leak detection technology and preventative maintenance measures to quickly identify and resolve operational leaks, which in turn will reduce GHG emissions.
	HFC leakage	Operation	M-2E-07	Reduce Disposal Emissions	Properly recover refrigerants prior to the disposal of refrigeration and air conditioning equipment. U.S. Environmental Protection Agency-certified refrigerant recovery equipment must be used, meaning that a least 90 percent of the refrigerant must be recovered if the compressor is operating, and at least 80 percent must be recovered otherwise.

	Land use change	Operation	M-2F-01	Implement Management Practices to Improve the Health and Function of Natural and Working Lands	Implement management strategies aimed at improving the overall health and functionality of natural and working lands as a mechanism for increasing carbon sequestration and reducing GHG emissions. Management practices may include those that change ecosystem carbon exchange rates (e.g., cultivated land soil conservation, use of biochar) and those that involve land cover changes. If land conversion is deemed appropriate, refer to Measure M-1E-1 for recommended implementation and management strategies.
	Land use change	Operation	M-2F-02	Wildfire Resilience and Management	Implement fuel treatments in forested areas to minimize the likelihood of severe or catastrophic wildfire behavior, thereby minimizing pyrogenic carbon emissions during a wildfire event. Fuel treatments have the short-term effect of releasing more carbon emissions as understory, ladder fuels, and forest fuel loads are burned. However, in the long term, treated stands produce fewer emissions compared to untreated stands because treated stands produce low to moderate fire severity that does not disturb the carbon stock in the overstory canopy. Untreated stands are far more likely to experience sever behavior that ignites the canopy and releases the stored carbon in the overstory.
	Land use change	Operation	M-2F-03	Use Rotational Grazing	Regularly move cattle between different grazing areas to promote healthy pasture regrowth before resuming grazing.
	Land use change	Operation	M-2F-04	Reduce Livestock Stocking Density	Decrease the amount of cattle stocked per pasture to reduce grazing pressure, which in turn reduces plant defoliation and soil disturbance, which can mitigate soil carbon loss. Reducing the stocking density also reduces methane emissions by decreasing the animal population.
	Land use change	Operation	M-2F-05	Plant Cover Crops	Plant cover crops during fallow periods to enhance soil carbon storage.
	On-road vehicles	Operation	M-2G-01	Increase Residential Density	Design projects with a higher density of dwelling units compared to the average residential density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing residential density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions.
	On-road vehicles	Operation	M-2G-02	Increase Job Density	Design projects with a higher density of jobs compared to the average job density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing job density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions
	On-road vehicles	Operation	M-2G-03	Infill Development	Support infill housing development programs that allow residents to live closer to downtown areas where there is greater access to jobs and activities. Residents living at infill development projects typically do not need to travel as far to access essential destinations. This leads to lower vehicle miles traveled and associated GHG emissions compared to similar projects located farther from a downtown area.
	On-road vehicles	Operation	M-2G-04	Provide Transit-Oriented Development	Support transit-oriented development (TOD), which achieve lower vehicle miles traveled compared to developed sited in a TOD location. TOD refers to projects built in compact, walkable areas that have easy access to public transit, ideally in a location with a mix of uses, including housing, retail offices, and community facilities. Project site residents, employees, and visitors would have easy access to high-quality public transit, thereby encouraging transit ridership and reducing the number of single-occupancy vehicle trips and associated GHG emissions.
	On-road vehicles	Operation	M-2G-05	Integrate Affordable and Below Market Rate Housing	Require below market rate (BMR) housing. BMR housing provides greater opportunity for lower income families to live closer to job centers and achieve a job/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes.
	On-road vehicles	Operation	M-2G-06	Locate Project in Area with High Destination Accessibility	Site new development in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions (e.g., schools, supermarkets, and health care services) that are reachable within a given travel time or travel distance and tends to be highest at central locations and lowest at peripheral ones. When destinations are nearby, the travel time between them is less, thus increasing the potential for people to walk and bike to those destinations and, therefore, reducing the vehicle miles traveled and associated GHG emissions.
	On-road vehicles	Operation	M-2G-07	Improve Destination Accessibility in Underserved Areas	Construct job centers or other attractions (e.g., schools, supermarkets, and health care services) for residents in underserved areas (e.g., food deserts). When destinations are nearby, the travel time between them is less, thus increasing the potential for people to walk and bike to those destinations, reducing vehicle miles traveled and associated GHG emissions.
	On-road vehicles	Operation	M-2G-08	Limit Residential Parking Supply	Reduce the total parking supply available at a residential project or site. Limiting the amount of parking available creates scarcity and adds additional time and inconvenience to trips made by private auto, thus disincentivizing driving as a mode of travel. Reducing the convenience of driving results in a shift to other modes and decreased vehicle miles traveled and thus a reduction in GHG emissions.
	On-road vehicles	Operation	M-2G-09	Unbundle Residential Parking Costs from Property Cost	Unbundle, or separate, a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost. On the assumption that parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces, this measure results in decreased vehicle ownership and, therefore, a reduction in vehicle miles traveled and GHG emissions.
	On-road vehicles	Operation	M-2G-10	Implement Preferential Parking Permit Program	Provide preferential parking in terms of free or reduced parking fees, priority parking, or reserved parking in convenient locations (such as near public transportation or building entrances) for commuters who carpool, vanpool, ride-share or use sustainably fueled vehicles. Projects should also provide wide parking spaces to accommodate vanpool vehicles. Commercial preferential parking can accommodate workers who work non-standard hours by providing opportunities to participate. Residential preferential parking can consider an equitable distribution of permits, giving priority to owners of sustainably fueled vehicles.

	On-road vehicles	Operation	M-2G-11	Provide Traffic Calming Measures	Include pedestrian/bicycle safety and traffic calming measures above jurisdictional requirements. Roadways should also be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others. Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in vehicle miles traveled.
	On-road vehicles	Operation	M-2G-12	Required Project Contributions to Transportation Infrastructure Improvement	Contribute to traffic-flow improvements or other multi-modal infrastructure projects that reduce emissions and are not considered as substantially growth inducing. The local transportation agency should be consulted for specific needs. Contributions may consist of dedicated right-of-way, capital improvements, or easements.
	On-road vehicles	Operation	M-2G-13	Locate Project near Bike Path/Bike Lane	Locate new development within 0.5-mile bicycling distance to an existing Class I or IV path or Class II bike lane. A project that is designed around an existing or planned bicycle facility encourages sustainable mode use. The project design should include a comparable network that connects the project uses to the existing off-site facilities that connect to work/retail destinations.
	On-road vehicles	Operation	M-2G-14	Provide Bike Parking	Provide short-term and long-term bicycle parking facilities to meet peak season maximum demand. Parking can be provided in designated areas or added within rights-of-way, including by replacing parking spaces with bike parking corrals. Ensure that bike parking can be accessed by all, not just project employees or residents.
	On-road vehicles	Operation	M-2G-15	Orient Project Toward Transit, Bicycle, or Pedestrian Facility	Minimize the setback distance between the project and planned or existing transit, bicycle, or pedestrian corridors. A project that is designed around an existing or planned transit, bicycle, or pedestrian corridor encourages sustainable mode use.
	On-road vehicles	Operation	M-2G-16	Implement Commute Trip Reduction Marketing	Implement a marketing strategy to promote the project site employer's commute trip reduction (CTR) program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing vehicle miles traveled and GHG emissions. This measure can be used to support implementation of either a voluntary CTR program (see Measure 2G-17) or mandatory CTR program (see Measure 2G-18).
	On-road vehicles	Operation	M-2G-17	Implement Commute Trip Reduction Program (Voluntary)	Implement a voluntary commute trip reduction (CTR) program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing vehicle miles traveled and GHG emissions.
	On-road vehicles	Operation	M-2G-18	Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring)	Implement a mandatory commute trip reduction (CTR) program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing vehicle miles traveled and GHG emissions.
	On-road vehicles	Operation	M-2G-19	Provide Ridesharing Program	Implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, vehicle miles traveled, and GHG emissions.
	On-road vehicles	Operation	M-2G-20	Provide Employer-Sponsored Vanpool	Implement an employer-sponsored vanpool service. Vanpooling is a flexible form of public transportation that provides groups of 5 to 15 people with a cost-effective and convenient rideshare option for commuting. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute vehicle miles traveled, thereby reducing GHG emissions.
	On-road vehicles	Operation	M-2G-21	Provide End-of-Trip Bicycle Facilities	Install and maintain end-of-trip facilities for employee use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing vehicle miles traveled and GHG emissions.
	On-road vehicles	Operation	M-2G-22	Provide Shuttles (Gas or Electric)	Provide local shuttle service through coordination with the local transit operator or private contractor. The shuttles should provide service to and from commercial centers to nearby transit centers to help with first and last mile connectivity, thereby incentivizing a shift from private vehicles to transit, reducing associated GHG emissions. Electric shuttle vehicles provide a marginally more effective reduction to GHG emissions compared to gas- or diesel-fueled shuttles due to their use of less emissions-intensive electric power.
	On-road vehicles	Operation	M-2G-23	Implement Subsidized or Discounted Transit Program	Provide subsidized or discounted, or free transit passes for employees and/or residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced vehicle miles traveled and thus a reduction in GHG emissions.
	On-road vehicles	Operation	M-2G-24	Implement Telecommute and/or Alternative Work Schedule Program	Permit employee telecommuting and/or alternative work schedules and monitor employee involvement to ensure forecasted participation matches observed participation. While this measure certainly reduces commute-related vehicle miles traveled (VMT), recent research has shown that total VMT from telecommuters can exceed VMT from non-telecommuters. In addition, telecommuting affects commercial and residential electricity use, complicating the calculation of the net effect and attribution of emissions. More specifically, an office with fewer employees could result in a decrease in the project's energy used to operate equipment and provide space heating and air conditioning. Conversely, an increase in telecommuters using their private homes as workspaces could result in a residential increase in energy for those same end uses and appliances. It is recommended that users review the most recent literature at the time of their project initiation to see if new findings more conclusively support emissions reduction.
	On-road vehicles	Operation	M-2G-25	Price Workplace Parking	Price onsite parking at workplaces. Because free employee parking is a common benefit, charging employees to park onsite increases the cost of choosing to drive to work. This is expected to reduce single-occupancy vehicle commute trips, resulting in decreased vehicle miles traveled, thereby reducing associated GHG emissions.

	On-road vehicles	Operation	M-2G-26	Implement Employee Parking Cash-Out	Offer employee parking cash-out. Cash-out is when employers provide employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to or greater than the cost of the parking space. This encourages employees to use other modes of travel instead of single occupancy vehicles. This mode shift results in people driving less and thereby reduces vehicle miles traveled and GHG emissions.
	On-road vehicles	Operation	M-2G-27	Provide On-Demand Microtransit	Provide small-scale, on-demand public transit services that can offer fixed routes and schedules or flexible routes and on-demand scheduling (e.g., Metro Micro) through coordination with the local transit operator or private contractor. Microtransit aims to offer shorter wait times and improved reliability compared to the bus and rail system to further incentivize alternative transportation modes that are less emissions-intensive than private vehicle trips. On-demand rides can be booked using smartphone applications or call centers.
	On-road vehicles	Operation	M-2G-28	Improve Transit Access, Safety, and Comfort	Improve transit access and safety through sidewalk/crosswalk safety enhancements, bus shelter improvements, improved lighting, and other features. Work with the community to determine barriers to use, most desired improvements, and other access challenges.
	On-road vehicles	Operation	M-2G-29	Provide Real-Time Transit Information	Provide real-time bus/train/ferry arrival time, travel time, alternative routings, or other transit information via electronic message signs, dedicated monitor or interactive electronic displays, websites, or mobile apps. This makes transit service more convenient and may result in a mode shift from auto to transit, which reduces vehicle miles traveled.
	On-road vehicles	Operation	M-2G-30	Provide First and Last Mile TNC Incentives	Require a first-last mile partnership between a municipality/transit agency and a transportation network company (TNC) for subsidized, shared TNC rides to or from the local transit station within a specific geographic area. This measure encourages a shift to transit mode for longer trips. Consider providing inclusive mechanisms so people without bank accounts, credit cards, or smart phones can access the incentives.
	On-road vehicles	Operation	M-2G-31	Implement a School Pool Program	Create a ridesharing program for school children. School pool helps match parents to transport students to private schools, or to schools where students cannot walk or bike but do not meet the requirements for bussing. A school pool program can help reduce onsite air pollutant emissions at the school by reducing private vehicle trips, especially if the pool vehicle is zero emissions.
	On-road vehicles	Operation	M-2G-32	Establish a School Bus Program	Establish or expand a school bus program. Busing provides a practical way to transport students to school while also offering reductions in GHG emissions when there is high enough ridership. When districts establish busing programs, they directly replace automobile trips to take students to and from school.
	On-road vehicles	Operation	M-2G-33	Active Modes of Transportation for Youth	Provide infrastructure to support any form of active transport among youth. Ensuring that children can use active transportation whenever possible can serve to reduce vehicle miles traveled (VMT) and allow them to get the necessary exercise to live healthy lives. Safe Routes to Schools provides federal funding for new sidewalks, bike lanes, off-street pathways, and street crossings to help children use active modes of transportation to get to school, bringing health benefits to children, in addition to reductions in VMT from mode-shifts away from private vehicle trips.
	On-road vehicles	Operation	M-2G-34	Electrify Loading Docks	Plug in transport refrigeration units and auxiliary power units to the electric grid at the loading dock instead of running the units on diesel. The indirect GHG emission from electricity generation can partially offset the emissions reduction from fuel reductions.
	On-road vehicles	Operation	M-2G-35	Provide Electric Vehicle Charging Infrastructure	Install onsite electric vehicle chargers at buildings with designated parking areas (e.g., commercial, educational, retail, multifamily). This will enable drivers of plug-in hybrid electric vehicles to drive a larger share of miles in electric mode, as opposed to gasoline-powered mode, thereby displacing GHG emissions from gasoline consumption with a lesser amount of indirect emissions from electricity.
	On-road vehicles	Operation	M-2G-36	Use Cleaner-Fuel Vehicles	Use cleaner-fuel vehicles in lieu of similar vehicles powered by gasoline or diesel fuel. Cleaner-fuel vehicles may include electric vehicles, natural gas and propane vehicles, and vehicles powered by biofuels such as composite diesel (blend of renewable diesel, biodiesel, and conventional fossil diesel), ethanol, and renewable natural gas. The full GHG emissions impact of cleaner fuels depends on the emissions from the vehicle's tailpipe as well as the emissions associated with production of the fuel (sometimes termed "upstream" emissions). For example, tailpipe GHG emissions from renewable natural gas are identical to tailpipe GHG emissions from conventional natural gas; the GHG benefits of renewable natural gas come from the fact that it is produced from biomass. Similarly, battery electric vehicles have zero tailpipe emissions, but properly accounting for their GHG impacts requires quantifying the emissions associated with the electricity generation needed to charge the vehicle's batteries.
	On-road vehicles	Operation	M-2G-37	Install Hydrogen Fueling Infrastructure	Implement accessible hydrogen fuel cell fueling infrastructure. Drivers of fuel cell electric vehicles (FCEV), from individual passenger vehicles to haul truck fleets, will be able to refuel using this infrastructure. The expansion of hydrogen fueling locations indirectly supports the uptake of FCEV in place of the typical internal combustion engine vehicle fueled by carbon-emitting gasoline and diesel.
	Treatment of waste on-site	Operation	M-2H-01	Establish Methane Recovery in Landfills	Capture and either flare or combust landfill gas (LFG) emitted from decomposition of organic waste in landfills. Flaring LFG will reduce the amount of methane emitted into the atmosphere. Combusting LFG to generate electricity for onsite energy needs reduces GHG emissions in two ways: it reduces direct methane emissions, and it displaces electricity demand and the associated indirect GHG emissions from electricity production.
	Treatment of waste on-site	Operation	M-2H-02	Implement Monitoring and Design Practices to Reduce Landfill Methane	Improve the design and operation of landfills to maximize control of methane emissions. Strategies may include: 1. Monitor to quickly detect and repair fugitive emissions. 2. Use effective cover practices to control surface methane. 3. Design and operate robust gas collection systems. 4. Efficiently destroy or use collected landfill gas.
	Treatment of waste on-site	Operation	M-2H-03	Use Appropriate Additives to Accelerate Composting	Increase compositing additives. Appropriate use of additives can effectively accelerate the composting period. Studies have shown that microbial agents are more conducive to GHG reduction compared to chemical, mineral, and organic physical organic additives. Combined measures, such as biochar and electric field-assisted composting can also be very effective at reducing GHGs during compositing.

	Treatment of waste on-site	Operation	M-2H-04	Improve Digestion Efficiency	Improve the efficiency of methane digestion by using smaller sludge amounts at increased frequency. Homogenizing primary and excess sludge can also improve stabilit8y and efficiency of anaerobic digestion, thus reducing emissions.
	Treatment of wastewater on-site	Operation	M-2I-01	Establish Methane Recovery in Wastewater Treatment Plants	Capture methane from a wastewater treatment plant and either (1) combust or flare it to prevent escape into the atmosphere or (2) combust or flare it and use the heat to generate electricity for onsite energy needs. Using the combusted methane as an energy source reduces GHG emissions by displacing electricity demand and the associated indirect GHG emissions from electricity production. This measure is most applicable to wastewater treatment plants that have anaerobic digestion infrastructure, which facilitates the biological decomposition of the wastewater and produces the methane that is either flared or harnessed for energy.
	Treatment of wastewater on-site	Operation	M-2I-02	Improve Monitoring and Energy Management	Implement a system to improve the monitoring efficiency of each step in the wastewater treatment process. Use sensors to measure dissolved methane and nitrous oxide concentrations, and use this data to reduce the need for aeration. An intelligent system that controls the aeration quantity in biochemical pools with feedback controls and intelligent models could be deployed to maintain a balance of aeration. This system can also be used to improve oxygen management throughout the wastewater treatment process.
	Treatment of wastewater on-site	Operation	M-2I-03	Optimize Treatment Processes to Reduce Energy	Monitor and adjust the parameters of treatment processes (e.g., membrane bioreactor treatment) to reduce energy consumption. Consider new processes and configurations to remove organic matter. For example, use microalgae or partial nitritation-Anammox processes instead of conventional nitrification-denitrification processes. Or, use biological techniques like aerobic granular sludge.
	Treatment of wastewater on-site	Operation	M-2I-04	Recover and Separate Carbon	Recover carbon from waste sludge and separate it from nitrogen after fermentation.
	Treatment of wastewater on-site	Operation	M-2I-05	Implement Energy Efficiency Improvements	Implement facility energy efficiency improvements, such as upgrading sewage-lifting pumps, improving the efficiency of heating ventilation and air conditioning and lighting through controls or replacement equipment, and improving efficiency of aeration equipment. Use of frequency conversion technology to transform old sewage lifting pumps and the direct application of new equipment or facilities (e.g., digital pumps) are two major pathways to reduce the energy consumption needed for the sewage lifting pumps.
	Treatment of wastewater on-site	Operation	M-2I-06	Use Renewable and Heat Energy	Use renewable energy sources like solar, biogas, and heat throughout the wastewater process. Extract waste heat energy using wastewater source heat pump technology.
	Treatment of wastewater on-site	Operation	M-2I-07	Prevent the Release of Untreated Wastewater	Treat wastewater prior to release. While treatment will generate emissions, untreated wastewater has a three-times higher carbon footprint compared to treated wastewater. Thus, treatment emissions will be more than offset by the benefits of wastewater treatment prior to discharge.
	Treatment of waste off-site	Operation	M-2J-01	Institute or Extend Recycling Services	Institute or extend recycling services to reduce the volume of landfilled waste. Decomposition of certain types of landfilled waste produces methane. Increasing waste diversion from landfills therefore reduces GHG emissions. The recycling process generates some emissions, but also reduces upstream emissions from the manufacturing and production of new raw materials and goods.
	Treatment of waste off-site	Operation	M-2J-02	Require Edible Food Recovery Program Partnerships with Food Generators	Require food service, wholesale, and retail sources of edible food to partner with food recovery programs. Food recovery programs collect edible foods from commercial production and distribution channels that would otherwise be transported to a landfill and redistribute them for consumption. This measure would avoid emissions from the decomposition of non-diverted organic material in landfills.
	Treatment of waste off-site	Operation	M-2J-03	Implement Organics Diversion Program	Implement an organics diversion program to reduce the volume of organic waste sent to landfills. An organics diversion program lowers the landfill disposal rate of food waste (both edible and non-edible), food soiled paper, yard waste, and non-hazardous wood waste. Decomposition of organic waste in landfills produces methane. Increasing organic waste diversion from landfills thus reduces GHG emissions
	Enteric fermentation	Operation	M-2K-01	Use Feed Additives	Incorporate feed supplements that can inhibit methane production in the rumen. Examples of methane-reducing feed additives include seaweed, oils, agolin, mootral, certain synthetics (e.g., 3-Nitrooxpropanol), and certain plant extracts
	Enteric fermentation	Operation	M-2K-02	Manage and Balance Diets	Provide a balanced diet with high-quality forage to improve digestibility and reduce methane emissions. Also, balance feed rations to minimize excess nutrients that contribute to emissions.
	Enteric fermentation	Operation	M-2K-03	Manage Herd Composition	Reduce the number of unproductive animals on a farm can potentially reduce GHG emissions while increasing profitability. For example, extending lactation in dairying cows (where cows calve every 18 months rather than annually) can reduce herd energy demand, thereby potentially reducing methane emissions by a similar amount.
	Manure management	Operation	M-2L-01	Require Best Management Practices for Manure Management	Implement best management practices for the management of manure from livestock. Well-managed pasture systems and aerobic dry composting systems tend to have lower emissions, while anaerobic wet handling systems generate more methane. This measure is thus intended for manure collection systems that are currently managed by anaerobic decomposition of manure volatile solids stored in a lagoon or other predominantly liquid anaerobic environment. Utilizing alternative practices to manage manure results in reduced agriculture emissions from livestock by decreasing the amount of volatile manure solids that are stored in wet, anaerobic conditions.
	Manure management	Operation	M-2L-02	Convert to Pasture-Based Management	Convert non-pasture operations to pasture-based management. To achieve emission reduction, the project must currently manage/store some manure in wet/anaerobic conditions and introduce new practices that reduce the quantity of manure managed under such conditions.
	Manure management	Operation	M-2L-03	Install Compost Bedded Pack Barn	Install a compost bedded pack barn that composts manure in situ.
	Manure management	Operation	M-2L-04	Install Slatted Floor Pit Storage Manure Collection	Install slated floor pit storage manure collection that must be cleaned out at least monthly. Pit storage cleaned out at a frequency less than twelve times per year may not reduce GHG emissions since this allows conditions to become anaerobic.

	Manure management	Operation	M-2L-05	Separate Manure Solids	Separate manure solids prior to entry into a wet/anaerobic environment (e.g., lagoon, settling pond, settling basin) in conjunction with one of the following practices (a) through (h): a) Open solar drying of manure (manure is dried in a paved or unpaved open confinement area without any significant vegetative cover where accumulating manure may be removed periodically); b) Closed solar drying (drying of manure in enclosed environment); c) Forced evaporation with natural-gas fueled dryers; d) Daily spread (manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion); e) Solid storage (storage of manure, typically for a period of several months, in unconfined piles or stacks); f) Composting in vessel (composting in an enclosed vessel, with forced aeration and continuous mixing) or in aerated static pile (composting in piles with forced aeration but no mixing); g) Composting in intensive windrows (with regular – at least daily – turning for mixing and aeration) or passive windrows (with infrequent turning for mixing and aeration); or h) Composting in aerated vermifiltration system (solids separated by vermifilter are also processed by worms within the vermifilter)
	Manure management	Operation	M-2L-06	Convert from Flush to Scrape Manure Collection	Convert from a flush to scrape manure collection system in conjunction with one of the practices (a) through (h) listed in Measure 2L-5.
	Manure management	Operation	M-2L-07	Install An Anaerobic Digester	Install an anaerobic digester to capture methane from manure and utilize it to generate energy.

APPENDIX D: TRAFFIC IMPACT ANALYSIS

Traffic Impact Analysis

Big Woods Business Park AUAR

CHASKA, MINNESOTA

FEBRUARY 2026

Prepared By:

Kimley»Horn

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1. INTRODUCTION

Kimley-Horn and Associates, Inc., (Kimley-Horn) was hired to prepare a traffic impact study included in the Big Woods Business Park AUAR in Chaska, MN. An aerial view of the study location and surrounding roadway network is presented in **Exhibit 1**. All exhibits for this report are included in the appendix.

For purposes of this analysis, two (2) development scenarios were analyzed. Scenario 1 consists of a 2 million square foot Business Park while Scenario 2 consists of a 3 million square foot Business Park. For both scenarios, 90% of the total floor area is anticipated to become industrial land uses while the remaining 10% of the area is anticipated to become retail or similar commercial developments. In order to assess the potential impact of the development scenarios on the area roadway network, site-generated trips were estimated and added to the background traffic volumes. Future traffic conditions were evaluated for the approximate Opening Year of the near term developments (2030) and a long term "Design Year" (2045).

This report presents and documents data collection, summarizes the evaluation of existing and projected future traffic conditions on the surrounding roadways, and identifies recommendations to address the potential impact of site-generated traffic on the adjacent roadway network for Scenarios 1 and 2.

1.1 Report Purpose and Objectives

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the AUAR guidelines. The following specific information, per AUAR recommended content, should be provided:

- A description and map of the existing and proposed roadway system, including state, regional, and local roads to be affected by the development of the AUAR area. This information should include existing and proposed roadway capacities and existing and projected background (i.e. without the AUAR development) traffic volumes;
- Trip generation data – trip generation rates and trip totals – for each major development scenario broken down by land use zones and/or other relevant subdivisions of the area. The projected distributions onto the roadway system must be included;
- Analysis of impacts of the traffic generated by the AUAR area on the roadway system, including: comparison of peak period total flows to capacities and analysis of Level of Service and delay times at critical points (if any);
- A discussion of structural and non-structural improvements and traffic management measures that are proposed to mitigate problems.

Note: in the above analyses the geographical scope must extend outward as far as the traffic to be generated would have a significant effect on the roadway system and traffic measurements and projections should include peak days and peak hours, or other appropriate measures related to identifying congestion problems, as well as ADTs (average daily traffic).

2. EXISTING CONDITIONS

Kimley-Horn conducted a review of the AUAR area including existing land uses in the surrounding area, the adjacent street system, current traffic volumes and operating conditions, lane configurations and traffic controls at nearby intersections, and other key roadway characteristics. This section of the report details information on the existing conditions. An aerial view of the existing conditions and lane movements are shown in **Exhibit 2**.

2.1 Area Land Uses & Connectivity

The site is directly west of US Highway 212 and would have direct access to multiple County State Aid Highways (CSAHs). US Highway 212 is the primary connecting route between Chaska/nearby communities and most of the Twin Cities metro area. There are three (3) interchanges to access US Highway 212 near the site, along CSAH 10 (Engler Boulevard), CSAH 44 (Big Woods Boulevard), and CSAH 10 (Jonathan Carver Parkway). The CSAH 10 and CSAH 11 interchanges are full-access diamond interchanges, while CSAH 44 is a partial interchange with access to/from the north along US Highway 212 with room to expand to a full interchange in the future.

The existing land use of the surrounding area is primarily classified as RR2, Rural Residential on the Chaska Zoning Map. Other nearby areas are classified as O, Open Development and north of the development area there are planned multi-use and industrial developments.

2.2 Existing Roadway Characteristics

The following provides a description of the public roadways within the AUAR area.

U.S. Highway 212 is a primarily east-west freeway which locally runs in the north-south direction, forming the eastern boundary of the AUAR area. It is a four-lane divided freeway and is classified by the Met Council as a Principal Arterial. According to the MnDOT Traffic Mapping Application, the roadway has an Annual Average Daily Traffic (AADT) of 22,650 vehicles per day (vpd) south of CSAH 10, as of 2024. The posted speed limit is 65 miles per hour (mph). Three (3) freeway interchanges are included in the TIA study area. Approximately 1500’ to the south of the AUAR area, Johnathan Carver Parkway provides a full access interchange with U.S. Highway 212. Directly to the west of the site, Big Woods Boulevard provides a northbound entrance ramp and southbound exit ramp to U.S. Highway 212. Approximately 3000’ northwest of the site, Engler Boulevard provides a full access interchange with U.S. Highway 212.

CSAH 44 (Big Woods Boulevard) is a two-lane undivided roadway that runs east-west. This roadway bisects the AUAR area, providing primary access to the study area parcels. The roadway is classified by the Met Council as an A-Minor Expander east of CSAH 11 (Jonathan Carver Parkway) and a Major Collector west of CSAH 11. According to the MnDOT Traffic Mapping Application, the roadway has an AADT of 3,350 vpd west of CSAH 61 (2018) and 1,060 vpd west of CSAH 11 (2025). Directly to the east of the site, Big Woods Boulevard provides a northbound entrance ramp and southbound exit ramp to U.S. Highway 212. Big Woods Boulevard also connects directly to downtown Chaska.

CSAH 11 (Johnathan Carver Parkway) is a north-south roadway that is primarily two-lanes undivided but widens to four-lanes divided south of Chaska Boulevard. The roadway is classified by the Met Council as an A-Minor Connector. Approximately 1500’ to the south of the AUAR area, Johnathan Carver Parkway has a full access interchange with U.S. Highway 212. According to the MnDOT Traffic Mapping Application,

the AADT of CSAH 11 ranges from 5,100 vpd north of CSAH 61 to 18,100 south of US Highway 212, as of 2025. The posted speed limit is 55 mph.

CSAH 61 (Chaska Boulevard) is a four-lane undivided east-west roadway in the study area. CSAH 61 terminates at CSAH 11 (Jonathan Carver Parkway), but the roadway continues west of CSAH 11 as Levi Griffin Road. CSAH 61 is classified by the Met Council as an A-Minor Reliever while Levi Griffin Road is classified as a local road. According to the MnDOT Traffic Mapping Application, CSAH 61 has an AADT of 5,700 vpd, as of 2022. Chaska Boulevard connects directly to downtown Chaska to the east. The posted speed limit is 50 mph.

CSAH 10 (Engler Boulevard) is a primarily two-lane east-west undivided roadway which widens to four lanes near the US Highway 212 interchange. The roadway is classified by the Met Council as an A-Minor Connector west of CSAH 11 and an A-Minor Expander east of CSAH 11. According to the MnDOT Traffic Mapping Application, the roadway has an AADT of 14,500 vpd west of US Highway 212, as of 2025. The posted speed limit is 55 mph.

Chaska Creek Boulevard is a four-lane divided north-south roadway that provides access to planned industrial/mixed-use developments north of the AUAR area. At the approach of Creek Road, the roadway narrows to two-lanes undivided. The roadway is classified as a future major collector in the City of Chaska's 2040 Comprehensive Plan. AADT data is unavailable. There is no posted speed limit. The roadway becomes Clover Ridge Drive north of CSAH 10.

Creek Road is a two-lane primarily east-west undivided roadway. The roadway is classified by the Met Council Functional Classifications as a Major Collector between Chaska Creek Boulevard & Savannah Way, and a local road otherwise. According to the MnDOT Traffic Mapping Application, the roadway has an AADT of 2,450 as of 2021. The posted speed limit is 40 mph.

The existing geometry and intersection control for the intersections in the study area that will be included in this analysis are shown in **Exhibit 2**.

2.3 Traffic Count Data

Turning movement count data was collected during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM), with one 24-hour count collected at CSAH 11 & CSAH 44. Data was collected at the eleven (11) study intersections listed below.

- CSAH 10 (Engler Boulevard) & US Highway 212 Westbound Ramps
- CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
- CSAH 10 (Engler Boulevard) & Chaska Creek Boulevard
- CSAH 10 (Engler Boulevard) & CSAH 11 (Jonathan Carver Parkway)
- Chaska Creek Boulevard & Creek Road
- CSAH 44 (Big Woods Boulevard) & Westbound U.S. Highway 212
- CSAH 44 (Big Woods Boulevard) & Eastbound U.S. Highway 212
- CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard) ***24-hour count***
- CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
- CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
- CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Eastbound Ramps

Turning movement data was collected on Tuesday, October 21, 2025, with the exception of the AM peak hour data at CSAH 11 & US Highway 212 Eastbound Ramps which were collected the following morning

of Wednesday, October 22 due to hardware issues. The traffic count data indicates that peak traffic volumes occur within the study area from 7:15 to 8:15 AM and 4:00 to 5:00 PM on a typical weekday. Existing peak hour traffic volumes are summarized in **Exhibit 3**. Detailed TMC data is provided in the appendix.

2.4 Pedestrian and Bicycle Infrastructure

There is a multi-use path along the east side of CSAH 11 (Jonathan Carver Parkway) within the development site. The CSAH 44 (Big Woods Boulevard) interchange with US Highway 212 includes a dedicated pedestrian bridge north of the interchange bridge but this trail does not connect west to CSAH 11. This trail connection will be completed during the planned reconstruction of CSAH 44 as driven by development west of US 212. Additionally, there is a planned Southwest Regional Trail connection across the ravine on the north end of the AUAR site.

2.5 Existing (2025) Capacity Analysis

Synchro 12/SimTraffic capacity software was used to evaluate existing operational conditions at the signalized and stop-controlled study intersections. The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS), measured in average delay per vehicle. LOS grades range from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions).

The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 2-1**.

Table 2-1: Level of Service Grading Descriptions

Level of Service	Description[1]
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

[1]*Highway Capacity Manual, 7th Edition.*

The range of control delay for each rating (as detailed in the HCM) is shown in **Table 2-2**. HCM considers roundabouts to be unsignalized intersections when determining LOS grades.

Table 2-2: Level of Service Grading Criteria

Level of Service[1]	Average Control Delay (s/veh) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F[2]	> 50	> 80

[1]*Highway Capacity Manual, 7th Edition*

[2]*All movements with a Volume to Capacity (v/c) ratio greater than 1 receive a rating of LOS F.*

For the purposes of this study, the worst individual movement delay was reported as the overall intersection delay at side street stop control intersections. The results of capacity analysis for existing conditions are summarized in **Table 2-3**. The results are based on analysis conducted with Synchro 12/SimTraffic for signalized and stop controlled intersections. Roundabout analysis software Rodel was used to evaluate the operations at roundabouts. All Rodel analysis was carried out with the default 50% confidence level, representing mean capacity estimates. Copies of the SimTraffic and Rodel reports are provided in the appendix.

Based on the analysis, all study intersections operate at LOS C or better during the AM and PM peak hours. Some movements at signalized intersections operate at LOS E or F but all movements operate below their respective capacities, and no queueing issues are present at the study intersections, based on the 95th percentile queueing results. The network operations are acceptable overall, and no mitigation is required.

Table 2-3: Existing Year (2025) Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	A (8)	A (3)	-	B (12)	C (26)	A (4)	-	B (14)
		WB	-	D (38)	B (15)		-	B (11)	A (4)	
		NB	D (40)	D (44)	A (6)		D (46)	B (18)	A (5)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	B (12)	A (3)	B (12)	-	B (17)	A (3)	B (15)
		WB	F (92)	A (7)	-		B (14)	A (10)	-	
		NB	-	-	-		-	-	-	
		SB	E (70)	-	A (7)		C (23)	-	B (14)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	B (15)	C (24)	A (3)	C (20)	D (46)	A (9)	A (2)	B (14)
		WB	D (41)	A (8)	A (2)		D (43)	B (14)	A (4)	
		NB	A (8)	E (64)	A (8)		C (34)	E (56)	A (5)	
		SB	C (29)	C (30)	A (5)		C (31)	C (35)	A (8)	
CSAH 10 & CSAH 11	Signal	EB	B (20)	C (25)	B (11)	C (22)	C (25)	B (12)	A (5)	C (27)
		WB	C (21)	B (15)	A (6)		C (35)	D (36)	C (22)	
		NB	C (23)	C (31)	C (22)		C (33)	C (29)	B (12)	
		SB	C (29)	C (26)	A (6)		C (26)	C (33)	B (18)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (0)			A (3)	A (3)			A (3)
		WB	A (3)				A (3)			
		NB	-				-			
		SB	A (3)				A (4)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A 3)			A (5)	A (4)			A (4)
		WB	A (8)				A (7)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (5)			A (4)	A (5)			A (3)
		WB	A (5)				A (6)			
		NB	A (0)				A (2)			
		SB	-				-			
CSAH 44 & CSAH 11	Side Street Stop	EB	B (12)	B (13)	A (3)	A (4)	A (4)	B (12)	A (3)	A (4)
		WB	B (10)	A (10)	A (2)		B (11)	B (13)	A (3)	
		NB	A (2)	A (2)	A (1)		A (3)	A (3)	A (1)	
		SB	A (4)	A (1)	A (0)		A (4)	A (2)	A (2)	
CSAH 11 & CSAH 61	Signal	EB	C (33)	D (37)	A (5)	B (10)	C (25)	D (39)	A (6)	B (17)
		WB	B (19)	B (17)	A (3)		C (27)	C (32)	A (7)	
		NB	B (10)	B (11)	A (8)		B (17)	B (19)	A (6)	
		SB	A (9)	A (7)	A (1)		B (13)	B (16)	A (2)	
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (13)	-	-	-	C (24)
		WB	C (29)	-	A (6)		D (38)	-	A (9)	
		NB	D (37)	A (7)	-		D (44)	B (16)	-	
		SB	-	A (10)	A (4)		-	B (16)	A (6)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (30)	-	A (6)	B (12)	D (43)	-	B (12)	A (7)
		WB	-	-	-		-	-	-	
		NB	-	A (7)	B (14)		-	A (4)	A (5)	
		SB	A (5)	A (4)	-		A (5)	A (4)	-	

3. BACKGROUND CONDITIONS ANALYSIS

Analysis of the future background conditions was carried out to determine the baseline operating conditions for the Opening Year (2030) and Design Year (2045) of the proposed AUAR development. A review of future traffic growth and planned geometric changes for the study roadways was conducted for the analysis.

3.1 Planned Roadway Improvements

Carver County is currently planning to reconstruct CSAH 44 (Big Woods Boulevard) west of the US Highway 212 interchange as well as the intersection with CSAH 11 (Jonathan Carver Parkway). Plans include the installation of a roundabout at CSAH 44 & CSAH 11 and converting Big Woods Boulevard to a median divided roadway between the proposed roundabout and the existing roundabout at the US 212 interchange. coinciding with the site's development. The project is anticipated to be completed in the near future. Therefore, a single-lane roundabout is assumed to be in place at the intersection of CSAH 44 & CSAH 11 for all future conditions analysis.

Additionally, Carver County is planning to reconstruct CSAH 10 (Engler Boulevard) expanding the route to four lanes through the intersection with CSAH 11 (Jonathan Carver Parkway). A corridor study was completed for CSAH 10. Based on the recommendations of that report, CSAH 11 will also be expanded to include two through lanes in each direction at the intersection. Turn lanes will be provided for all turning movements at CSAH 10 & CSAH 11 and dual left turn lanes will be provided where necessary. Based on the projected traffic volumes at this intersection, it is assumed that dual northbound and southbound left turn lanes will likely be installed. CSAH 11 was assumed to remain a two-lane road south of the intersection.

There are also two potential roadway improvements in the area that have been reviewed as part of previous traffic studies for the area. They are the connection of the AUAR site roadway to the Chaska Creek Boulevard & Creek Road roundabout and the completion of the Big Woods Boulevard & US Highway 212 interchange to provide access to/from the south. The effects of the Creek Road connection/ravine crossing will be analyzed in the analysis, while completion of the Big Woods Boulevard interchange will not be analyzed in this report.

3.2 Future Background Growth

MnDOT's ESAL worksheet was used to model the historical AADT growth along the major study area roadways. Based on the historical AADT counts along US Highway 212, Engler Boulevard, and Jonathan Carver Parkway, the model gives demographically adjusted growth rates of 1.9%, 1.9%, and 3.7%, respectively, which averages to 2.5% annual growth. Therefore, a 2.5% annual growth rate was applied to the study area intersections. This level of growth aligns with the background growth assumed in recent traffic studies for the area.

To confirm that this level of growth is accurate, future AADT forecasts from the City of Chaska 2040 Comprehensive Plan were reviewed at U.S. Highway 212, Engler Boulevard, and Johnathan Carver Parkway. These roadways are predicted to grow at annual rates of 1.2%, 2.4%, and 2.8% respectively, based on the 2040 traffic projections in relation to the baseline (2018) traffic volumes. This represents an average annual growth rate of 2.1% and generally aligns with the high level of growth anticipated based on historical AADT trends.

Additional traffic growth is also expected to result from at least one planned development in the vicinity of the project, as described in the section below.

3.3 Background Development

A TIS was completed for the proposed Enclave at Carver Creek residential development. The site is approximately one mile southwest of the AUAR area and is anticipated to have an impact on the traffic patterns within the study area, particularly at the CSAH 11 & US Highway 212 interchange. The development is expected to consist of 509 residential lots, with a mix of single-family homes and attached town homes. Background site traffic estimates were taken directly from The Enclave at Carver Creek TIS. The background development traffic distribution is shown in **Exhibit 4** and background development site trips are shown in **Exhibit 5**.

3.4 Future Background Traffic Projections

The Opening Year (2030) No-Build traffic projections were determined by growing the Existing (2025) traffic volumes shown in Exhibit 3 with five years of growth at 2.5% annually and then adding the background trips in Exhibit 5. The Opening Year (2030) No-Build traffic volumes are presented in **Exhibit 6**.

The Design Year (2045) No-Build traffic projections were determined by growing the Existing (2025) traffic volumes shown in Exhibit 3 with 20 years of growth at 2.5% annually and then adding the background trips in Exhibit 5. The Design Year (2045) No-Build traffic volumes are presented in **Exhibit 7**.

3.6 Opening Year (2030) No-Build Capacity Analysis

An Opening Year (2030) No-Build conditions analysis was completed to develop an understanding of the baseline operating conditions for the study area in the opening year. As discussed in Section 3.2, a single-lane roundabout was assumed at the intersection of CSAH 11 & CSAH 44. Additionally, corridor improvements were assumed along CSAH 10 including upgrades to the intersection of CSAH 10 & CSAH 11. Capacity results for the Opening Year (2030) No-Build conditions are provided in

Table 3-1. SimTraffic and Rodel analysis reports are included in the appendix.

Under Opening Year (2030) No-Build conditions, all intersections are anticipated to continue operating at LOS D or better. Delays at most intersections see minimal increase compared to the Existing (2025) conditions. The northbound right turn movement at CSAH 11 (Jonathan Carver Parkway) & US 212 Eastbound Ramps is anticipated to be nearing capacity during the AM peak hour and experiences significant delays and queueing. However, all intersections operate with acceptable levels of overall delay.

Based on review of the 95th percentile queueing results, the westbound left turn movement at CSAH 11 & US 212 Westbound Ramps sees 95th percentile queues that exceed the storage of the left turn bay, however queues are not anticipated to extend near the freeway itself. All other queues are anticipated to remain within their provided storage bays. The operating conditions of the Opening Year (2030) No-Build conditions are acceptable, and no mitigation is required.

Table 3-1: Opening Year (2030) No-Build Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	B (11)	A (3)	-	B (14)	C (24)	A (4)	-	B (14)
		WB	-	D (40)	B (15)		-	B (13)	A (5)	
		NB	D (40)	D (47)	A (7)		D (38)	B (15)	A (6)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	B (14)	A (3)	B (14)	-	B (19)	A (4)	B (15)
		WB	F (87)	A (6)	-		B (14)	A (10)	-	
		NB	-	-	-		-	-	-	
		SB	E (73)	-	A (8)		C (21)	-	B (15)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	C (31)	C (28)	A (3)	C (23)	D (44)	A (10)	A (2)	B (13)
		WB	D (44)	A (6)	A (2)		D (47)	B (12)	A (5)	
		NB	D (52)	E (59)	B (17)		C (31)	D (49)	A (5)	
		SB	C (33)	C (34)	A (7)		C (31)	C (35)	A (8)	
CSAH 10 & CSAH 11	Signal	EB	B (15)	B (13)	A (5)	B (14)	B (20)	B (11)	A (4)	B (15)
		WB	B (18)	B (13)	A (5)		B (13)	B (16)	B (11)	
		NB	B (18)	C (25)	A (6)		B (20)	B (19)	A (3)	
		SB	C (21)	C (22)	A (4)		B (20)	C (27)	A (8)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (3)			A (3)
		WB	A (3)				A (3)			
		NB	-				-			
		SB	A (3)				A (3)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (4)			A (6)	A (4)			A (5)
		WB	A (9)				A (7)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (6)			A (4)	A (5)			A (4)
		WB	A (5)				A (6)			
		NB	A (0)				A (2)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (5)			A (7)	A (5)			A (7)
		WB	A (5)				A (5)			
		NB	A (9)				A (8)			
		SB	A (8)				A (8)			
CSAH 11 & CSAH 61	Signal	EB	C (23)	C (33)	A (4)	B (11)	C (24)	D (37)	A (7)	B (19)
		WB	C (21)	B (18)	A (2)		C (27)	D (35)	B (10)	
		NB	B (10)	B (12)	A (8)		B (19)	C (22)	A (8)	
		SB	B (10)	A (7)	A (1)		B (16)	B (18)	A (2)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (15)	-	-	-	C (29)
		WB	C (32)	-	A (7)		D (43)	-	B (14)	
		NB	D (39)	A (7)	-		D (42)	B (18)	-	
		SB	-	B (11)	A (4)		-	C (22)	A (8)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (30)	-	A (7)	D (38)	D (44)	-	B (15)	A (9)
		WB	-	-	-		-	-	-	
		NB	-	C (26)	E (61)		-	A (5)	A (7)	
		SB	A (7)	A (4)	-		A (6)	A (8)	-	

3.7 Design Year (2045) No-Build Capacity Analysis

The Design Year (2045) No-Build Condition analysis was completed to develop an understanding of the baseline operating conditions for the study area in the long-term without the addition of the development traffic. Existing geometry and intersection control was assumed for this analysis. Signal timings and cycle lengths were optimized for the analysis. Capacity results for the Design Year (2045) No-Build conditions are provided in **Table 3-2**. SimTraffic analysis reports are included in the appendix.

Under Design Year (2045) No-Build conditions, multiple intersections are anticipated to experience significant operational issues, particularly at or near the CSAH 11 (Jonathan Carver Parkway) and CSAH 10 (Engler Boulevard) interchanges with US Highway 212. The southbound left turn movement at CSAH 10 & Chaska Creek Boulevard sees 95th percentile queues of 580' which could block through/right turn vehicles from entering the 400' storage bay. Although some movements see long delays (greater than 100 seconds per vehicle), the intersections along CSAH 11 operate at an overall LOS D or better during the AM and PM peak hours. However, queues along CSAH 10 are anticipated to lead to congestion along CSAH 10 at multiple intersections along the corridor where vehicles would be positioning in the respective lanes for the major turning movements. The US 212 Ramps and CSAH 10 intersections have multiple movements nearing their capacity and these intersections should be monitored for potential capacity improvements such as expansion of CSAH 10 to six-lanes or improvements to the US 212 interchange in the long term.

The intersection of CSAH 11 & US Highway 212 Eastbound Ramps operates at LOS F during the AM peak hour. The northbound right turn movement operates over its capacity with nearly 1,800 vehicles projected to make this turn in the AM peak hour. Improvements to the existing CSAH 11 interchange will likely be required in order to maintain acceptable operating conditions in the long-term due to the anticipated traffic growth from developments south of US Highway 212.

Growth south of US 212 will be heavily dependent on if an additional interchange along US Highway 212 is constructed. Furthermore, with the projected traffic volume of nearly 1,800 vehicles turning northbound right during the AM peak, improvements may be required along the CSAH 11 corridor south of US Highway 212. Dual channelized right-turn lanes (one merging into the left-turn/through lane and one free flowing) at the US Highway 212 Eastbound Ramps would be required within the study area. Traffic analysis of the developments south of US Highway 212 should be conducted to determine the precise traffic impacts of these developments and the need for an additional interchange or improvements to the CSAH 11 interchange.

Review of the 95th Percentile queueing results indicated the following potential queueing issues:

- CSAH 10 & Chaska Creek Boulevard – Southbound left turn lane exceeds capacity during the AM peak hour. Dual 400' left turn lanes are anticipated to be required.
- CSAH 10 & US 212 Westbound Ramps – Southbound right turn movement sees 445' queues during the PM peak hour. Extending the dedicated southbound right turn lane to 450' is anticipated to be required to prevent queues from blocking the southbound left turn lane.
- CSAH 11 & US 212 Westbound Ramps – Westbound left turn movement sees 531' queues during the PM peak hour. Extending the dedicated westbound left turn lane to 550' is anticipated to be required to prevent queues from blocking the right turn lane.

Table 3-2: Design Year (2045) No-Build Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	C (21)	A (6)	-	C (22)	C (27)	A (5)	-	B (16)
		WB	-	D (48)	C (33)		-	B (16)	A (7)	
		NB	E (59)	E (59)	A (8)		C (35)	D (39)	A (7)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	C (28)	B (11)	C (26)	-	C (30)	A (6)	C (30)
		WB	F (100+)	A (7)	-		C (24)	A (9)	-	
		NB	-	-	-		-	-	-	
		SB	F (100+)	-	B (13)		C (32)	-	D (37)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	D (35)	D (39)	B (17)	D (41)	D (47)	B (15)	A (2)	C (25)
		WB	F (100+)	A (9)	A (3)		D (48)	C (32)	B (15)	
		NB	E (69)	F (99)	C (32)		C (29)	D (51)	A (10)	
		SB	F (86)	E (61)	C (28)		C (27)	C (33)	B (15)	
CSAH 10 & CSAH 11	Signal	EB	B (18)	B (19)	A (8)	C (20)	C (27)	B (14)	A (6)	C (23)
		WB	C (29)	B (15)	A (8)		C (23)	C (25)	B (18)	
		NB	C (23)	C (32)	B (15)		C (29)	C (25)	A (5)	
		SB	D (36)	C (29)	A (6)		C (28)	D (40)	B (13)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (4)			A (4)
		WB	A (3)				A (4)			
		NB	-				-			
		SB	A (3)				A (4)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (4)			A (8)	A (5)			A (6)
		WB	B (12)				A (9)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (7)			A (4)	A (6)			A (4)
		WB	A (6)				A (7)			
		NB	A (1)				A (2)			
		SB	-				-			

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 44 & CSAH 11	Round-about	EB	A (6)			A (9)	A (7)			B (10)
		WB	A (7)				A (10)			
		NB	B (11)				B (11)			
		SB	B (10)				B (13)			
CSAH 11 & CSAH 61	Signal	EB	B (17)	D (40)	A (6)	B (15)	D (39)	D (50)	A (10)	C (23)
		WB	C (24)	B (17)	A (3)		D (40)	D (38)	B (14)	
		NB	B (13)	B (18)	B (15)		C (21)	B (10)	A (8)	
		SB	B (12)	A (9)	A (1)		D (38)	C (21)	A (2)	
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (17)	-	-	-	C (34)
		WB	C (32)	-	A (9)		D (40)	-	C (25)	
		NB	D (51)	A (10)	-		E (61)	C (23)	-	
		SB	-	B (12)	A (6)		-	D (41)	B (16)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	D (37)	-	B (11)	F (100+)	D (44)	-	C (26)	A (9)
		WB	-	-	-		-	-	-	
		NB	-	F (100+)	F (100+)		-	A (6)	A (9)	
		SB	A (9)	A (5)	-		A (9)	A (6)	-	

Analysis was conducted on the intersection of CSAH 11 & US 212 Eastbound Ramps with dual northbound right turn lanes in place to ensure this provides sufficient operating conditions. Results of the analysis are included below in **Table 3-3**. All movements at the intersection operate at LOS D or better during the AM and PM peak hour with the proposed mitigation change in place. The mitigation is sufficient and therefore an additional northbound right turn lane was assumed for the Design Year (2045) Scenario 1 and Design Year (2045) Scenario 2 conditions analysis. Note that the need for this improvement will greatly depend on the level of development that occurs south of US Highway 212 and whether or not an additional interchange is constructed for that development.

Table 3-3: Design Year (2045) No-Build Mitigated Levels of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	D (44)	-	C (27)	A (9)	D (38)	-	B (11)	C (25)
		WB	-	-	-		-	-	-	
		NB	-	A (6)	A (6)		-	C (22)	C (32)	
		SB	A (10)	A (6)	-		A (10)	A (5)	-	

4. FUTURE CONDITIONS ANALYSIS - SCENARIO 1

This section of the report outlines the proposed development scenario, summarizes site-specific traffic characteristics, and develops future traffic projections for Scenario 1. The project location and proposed access points are shown in **Exhibit 1**.

4.1 Scenario 1 Development Characteristics and Site Access

The Scenario 1 development consists of 2,000,000 total square feet of development, 90% of which is expected to be business park (industrial) and 10% is expected to be commercial (retail). The AUAR scoping document indicates that the retail/commercial space will generally be located along the north side of CSAH 44 (Big Woods Boulevard) in the eastern half of the site. The business park/industrial space is dispersed throughout the remainder of the AUAR area.

The development will generally be completed in two phases. Phase 1 consists of the portion of the development located north of CSAH 44 (i.e., all of the retail space and about half of the business park. For the purposes of the analysis, it was assumed that Phase 1 would be completed by 2030. Phase 2 includes the remaining half of the business park space that is located south of CSAH 44. This phase is anticipated to develop farther in the future than the Phase 1 portion of the development and is included in analysis year 2045.

There are four proposed access points. A potential fifth access point may be added by establishing a connection between the development's internal roadway network and the roundabout at CSAH 44 & US Highway 212 westbound ramp. For the purposes of this AUAR the accesses will be labeled as the following:

- Access A – Along CSAH 11 (Jonathan Carver Parkway) north of CSAH 44 (Big Woods Boulevard). Proposed right-in/right-out access based on county access spacing requirements.
- Access B – Along CSAH 44 (Big Woods Boulevard) west of the US Highway 212 interchange. Proposed full-movement access. While Access B does not meet Carver County access spacing requirements for full access, it is expected to be the primary access point due to its central location within the development and connectivity to US Highway 212.
- Access C – Along CSAH 11 (Jonathan Carver Parkway) north of CSAH 61 (Chaska Boulevard). Proposed full-movement access. This access should be provided at acceptable access spacing for full access on a Carver County roadway. Alignment to be coordinated with the City of Carver.
- Access D – Along CSAH 61 (Chaska Boulevard) east of CSAH 11 (Jonathan Carver Parkway). Proposed full-movement access.

All site access should be reviewed with Carver County as development plans are completed to determine a final access plan to the site.

4.2 Scenario 1 Trip Generation

Proposed development traffic was determined based on data from the Institute of Transportation Engineers' (ITE) *Trip Generation*, 12th Edition. The manual provides peak hour trips rates/equations, inbound-outbound percentages that can be attributed to the proposed site. Based on a review of ITE Land Use codes, LUC 130 (Industrial Park) was determined to be the most appropriate fit for the business park portions of the development, and LUC 820 (Shopping Center) was determined to be the most appropriate fit for the commercial portion of the development.

Table 4-1 provides a summary of trip generation for development Scenario 1. Based on the trip generation calculation, the proposed Scenario 1 development is anticipated to generate 12,102 daily trips, including 572 total trips during the AM Peak Hour (414 entering, 158 exiting), and 1,066 total trips during the PM Peak Hour (435 entering, 631 exiting).

Table 4-1: Trip Generation – Scenario 1

Land Use Description	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Phase 1 (2030)								
Industrial Park – ITE LUC 130	900 kSF	2,412	153	46	198	58	149	207
Passenger Vehicles	*900 kSF*	*1,980*	*139*	*33*	*171*	*43*	*137*	*180*
Trucks	*900 kSF*	*432*	*14*	*13*	*27*	*15*	*12*	*27*
Shopping Center – ITE LUC 820	200 kSF	7,278	109	67	176	319	333	652
Passenger Vehicles	*200 kSF*	*7,260*	*107*	*65*	*172*	*318*	*332*	*650*
Trucks	*200 kSF*	*18*	*2*	*2*	*4*	*1*	*1*	*2*
Phase 1 (2030) Totals	1,100 kSF	9,690	262	113	374	377	482	859
Passenger Vehicles	*1,100 kSF*	*9,240*	*246*	*98*	*343*	*361*	*469*	*830*
Trucks	*1,100 kSF*	*450*	*16*	*15*	*31*	*16*	*13*	*29*
Phase 2 (2045)								
Industrial Park – ITE LUC 130	900 kSF	2,412	153	46	198	58	149	207
Passenger Vehicles	*900 kSF*	*1,980*	*139*	*33*	*171*	*43*	*137*	*180*
Trucks	*900 kSF*	*432*	*14*	*13*	*27*	*15*	*12*	*27*
Buildout (2045) Totals	2,000 kSF	12,102	414	158	572	435	631	1,066
Passenger Vehicles	*2,000 kSF*	*11,220*	*384*	*130*	*514*	*404*	*606*	*1,010*
Trucks	*2,000 kSF*	*882*	*30*	*28*	*58*	*31*	*25*	*56*

4.3 Scenario 1 Directional Distribution

The estimated distribution of site-generated traffic on the surrounding roadway network was developed based on a review of the roadway network, area development pattern, and access to the proposed development. With a large portion of the development being industrial space, truck traffic is anticipated to account for a significant portion of the vehicle trips, and separate distributions were created for truck traffic. Separate distributions were developed for Phase 1 and Phase 2 of the proposed development since Phase 1 includes retail development while Phase 2 entirely consists of industrial development. The following global distribution was used for the Phase 1 development:

- 50% (vehicles) / 60% (trucks) to/from the east on U.S. Highway 212
- 15% (vehicles) / 25% (trucks) to/from the west on U.S. Highway 212
- 10% (vehicles) / 5% (trucks) to/from the south on CSAH 11 (Johnathan Carver Parkway)
- 10% (vehicles) / 5% (trucks) to/from the east on CSAH 44 (Big Woods Boulevard)
- 5% (vehicles) / 5% (trucks) to/from the west on CSAH 10 (Engler Boulevard)
- 5% (vehicles) to/from the north on CSAH 11
- 5% (vehicles) to/from the east on CSAH 10

The Phase 1 passenger vehicles site trip distribution is presented in **Exhibit 8**, and the distribution of trucks is presented in **Exhibit 9**. The Opening Year (2030) Scenario 1 site trips were calculated by applying these distributions to their respective trip generation totals shown in **Table 4-1.** Total site trips for Opening Year (2030) Scenario 1 are shown in **Exhibit 10**. The Opening Year (2030) Scenario 1 traffic volumes were then calculated by adding these site trips to the Opening Year (2030) No-Build traffic volumes in Exhibit 6. The Opening Year (2030) Build traffic volumes are shown in **Exhibit 11**.

The global distribution for the Phase 2 development is as follows:

- 40% (vehicles) / 55% (trucks) to/from the east on U.S. Highway 212
- 25% (vehicles) / 30% (trucks) to/from the west on U.S. Highway 212
- 10% (vehicles) / 5% (trucks) to/from the south on CSAH 11 (Johnathan Carver Parkway)
- 5% (vehicles) / 5% (trucks) to/from the west on CSAH 10 (Engler Boulevard)
- 5% (vehicles) / 5% (trucks) to/from the east on CSAH 61 (Chaska Boulevard)
- 5% (vehicles) to/from the east on CSAH 44 (Big Woods Boulevard)
- 5% (vehicles) to/from the north on CSAH 11
- 5% (vehicles) to/from the east on CSAH 10

The Phase 2 passenger vehicles site trip distribution is presented in **Exhibit 12**, and the distribution of trucks is presented in **Exhibit 13**. The Phase 2 (2045) site trips for Scenario were calculated by applying these distributions to their respective trip generation totals shown in **Table 4-1**. The total Phase 2 (2045) site trips for Scenario 1 are shown in **Exhibit 14**. The Design Year (2045) Scenario 1 traffic volumes were then calculated by adding these site trips to the Design Year (2045) No-Build traffic volumes in **Exhibit 7**. The Design Year (2045) Scenario 1 traffic volumes are shown in **Exhibit 15**.

4.4 Scenario 1 Future Pedestrian and Bicycle Infrastructure

During buildout of the site, trails/sidewalks should be provided along the major routes throughout the site with connections to the existing trail system to allow for multimodal site trips and improve the connectivity of the local trail system. This includes sidewalks along CSAH 11, CSAH 44, and a ravine crossing for the Southwest Regional Trail.

4.5 Opening Year (2030) Build Scenario 1 Capacity Analysis

An Opening Year (2030) Scenario 1 capacity analysis was conducted to determine the impacts of the short-term Scenario 1 development. The developments north of CSAH 44 (Big Woods Boulevard) are included in this analysis, which consists of 900,000 square feet of industrial space (half of the total for Scenario 1) and all 200,000 square feet of retail space. Access A is assumed to be side street stop controlled and restricted to right-in/right-out while Access B is assumed to be controlled by a single-lane roundabout. The results of the analysis for the Opening Year (2030) Build Scenario 1 are shown in **Table 4-2**. Copies of the capacity analysis reports are provided in the appendix.

All study intersections and site accesses are anticipated to operate at LOS C or better during the AM and PM peak hours. Overall, the study intersections are anticipated to see little change in delay as a result of the Scenario 1 Build conditions and all intersections continue to operate at acceptable levels. The 95th percentile queueing results were reviewed, and all queues are anticipated to remain within their respective storage bays except for the southbound right turn lane at CSAH 11 & US 212 Westbound ramps which sees 144’ queues, exceeding the 90’ of provided storage.

Table 4-2: Opening Year (2030) Build Scenario 1 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	B (11)	A (4)	-	B (14)	C (23)	A (4)	-	B (14)
		WB	-	D (39)	B (16)		-	B (13)	A (4)	
		NB	D (43)	C (28)	A (7)		D (41)	E (59)	A (6)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	B (14)	A (5)	B (14)	-	B (20)	A (4)	B (16)
		WB	E (78)	A (6)	-		B (16)	A (10)	-	
		NB	-	-	-		-	-	-	
		SB	E (71)	-	A (8)		C (22)	-	B (16)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	B (18)	B (18)	A (4)	B (17)	D (46)	B (11)	A (2)	B (13)
		WB	D (39)	A (5)	A (2)		D (48)	B (11)	A (5)	
		NB	D (49)	D (51)	A (9)		D (40)	D (39)	A (5)	
		SB	C (33)	D (36)	A (7)		C (32)	C (33)	B (10)	
CSAH 10 & CSAH 11	Signal	EB	B (16)	B (13)	A (5)	B (14)	D (52)	B (12)	A (4)	C (24)
		WB	C (22)	B (13)	A (5)		D (52)	B (20)	B (11)	
		NB	B (17)	C (23)	A (7)		D (44)	D (36)	A (4)	
		SB	C (22)	C (23)	A (4)		D (47)	D (49)	A (10)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (3)			A (3)
		WB	A (3)				A (3)			
		NB	-				-			
		SB	A (3)				A (3)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (5)			A (6)	A (7)			A (7)
		WB	A (9)				A (9)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (7)			A (5)	A (9)			A (6)
		WB	A (6)				A (7)			
		NB	A (4)				A (5)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (5)			A (7)	A (6)			A (9)
		WB	A (7)				A (10)			
		NB	A (9)				A (10)			
		SB	A (7)				B (11)			
CSAH 11 & CSAH 61	Signal	EB	C (20)	D (35)	A (5)	B (12)	C (33)	D (47)	A (8)	B (20)
		WB	C (22)	A (10)	A (2)		D (43)	D (39)	B (17)	
		NB	B (11)	B (13)	A (10)		B (17)	A (9)	A (5)	
		SB	A (10)	A (7)	A (1)		C (22)	B (14)	A (2)	
	Signal	EB	-	-	-	B (14)	-	-	-	C (24)

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps		WB	C (30)	-	A (8)		C (29)	-	B (11)	
		NB	D (35)	A (8)	-		E (59)	B (17)	-	
		SB	-	B (11)	A (5)		-	C (26)	A (10)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (33)	-	A (8)	C (33)	D (42)	-	B (16)	A (8)
		WB	-	-	-		-	-	-	
		NB	-	C (30)	D (48)		-	A (5)	A (7)	
		SB	A (8)	A (4)	-		A (7)	A (5)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (1)	-	-	-	A (2)
		WB	-	-	A (3)		-	-	A (4)	
		NB	-	A (2)	A (1)		-	A (2)	A (1)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (7)			A (6)	A (7)			A (8)
		WB	A (7)				A (9)			
		NB	-				-			
		SB	A (5)				A (10)			

4.6 Design Year (2045) Build Scenario 1 Capacity Analysis

Capacity analysis results for the Design Year (2045) Scenario 1 conditions are provided in **Table 4-3**. The analysis was carried out assuming dual northbound right turn lanes at CSAH 11 & US 212 Eastbound Ramps which was shown to be necessary under Design Year (2045) No-Build conditions if an additional interchange is not constructed for the developments south of US Highway 212.

Results of the Design Year (2045) Scenario 1 conditions show that all intersections are anticipated to operate at LOS D or better. Similar to the Design Year (2045) No-Build conditions, some individual movements at signalized are anticipated to operate at LOS E or F, particularly along CSAH 10 (Engler Boulevard). However, these intersections are relatively unaffected by the proposed development and the overall network operations are acceptable.

The 95th percentile queueing results were reviewed, and all queues are anticipated to remain within their respective storage bays except for the southbound right turn lane at CSAH 11 & US 212 Westbound ramps which sees 248' queues during the PM peak, exceeding the 90' of provided storage. A turn lane extension (at least 250') is required to maintain the anticipated queues. All other 95th percentile queues were acceptable, except those outlined in the Design Year (2045) No-Build section.

Table 4-3: Design Year (2045) Build Scenario 1 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	C (22)	A (6)	-	C (24)	C (27)	A (6)	-	B (16)
		WB	-	D (46)	C (33)		-	B (17)	A (6)	
		NB	E (60)	E (76)	A (9)		C (35)	E (70)	A (8)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	C (32)	B (12)	C (30)	-	C (33)	A (5)	C (31)
		WB	F (100+)	A (7)	-		C (24)	A (9)	-	
		NB	-	-	-		-	-	-	
		SB	F (100+)	-	B (14)		C (35)	-	D (38)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	D (42)	D (38)	B (12)	D (37)	D (41)	B (14)	A (2)	C (25)
		WB	F (95)	A (9)	A (3)		D (46)	C (32)	B (14)	
		NB	F (98)	F (83)	C (28)		C (28)	D (45)	A (9)	
		SB	E (72)	E (61)	B (20)		C (27)	C (31)	B (19)	
CSAH 10 & CSAH 11	Signal	EB	B (20)	B (19)	A (8)	C (21)	C (28)	B (13)	A (6)	C (23)
		WB	C (34)	B (16)	A (8)		C (24)	C (25)	B (18)	
		NB	C (24)	C (32)	B (12)		C (28)	C (27)	A (6)	
		SB	D (36)	C (30)	A (6)		C (28)	D (38)	B (16)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (4)			A (4)
		WB	A (3)				A (4)			
		NB	-				-			
		SB	A (3)				A (4)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (6)			A (10)	A (9)			A (10)
		WB	B (15)				B (14)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (8)			A (6)	B (11)			A (8)
		WB	A (7)				A (8)			
		NB	A (5)				A (6)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (7)			B (10)	A (8)			B (15)
		WB	A (8)				C (15)			
		NB	B (13)				B (15)			
		SB	B (11)				C (18)			
CSAH 11 & CSAH 61	Signal	EB	C (21)	D (37)	A (6)	B (16)	D (38)	D (50)	B (13)	C (26)
		WB	C (26)	B (12)	A (4)		D (43)	D (39)	B (17)	
		NB	B (13)	B (18)	B (15)		C (31)	B (15)	A (10)	
		SB	B (15)	A (10)	A (1)		D (45)	C (26)	A (3)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (15)	-	-	-	D (40)
		WB	C (33)	-	B (12)		D (44)	-	C (30)	
		NB	D (38)	A (8)	-		E (61)	C (26)	-	
		SB	-	B (13)	A (6)		-	E (57)	C (30)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	D (49)	-	B (15)	C (28)	E (56)	-	C (34)	B (11)
		WB	-	-	-		-	-	-	
		NB	-	B (20)	D (38)		-	A (8)	A (6)	
		SB	A (10)	A (5)	-		A (10)	A (6)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (2)	-	-	-	A (2)
		WB	-	-	A (3)		-	-	A (6)	
		NB	-	A (2)	A (2)		-	A (3)	A (2)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (8)			A (7)	A (9)			A (10)
		WB	A (8)				B (12)			
		NB	A (5)				A (6)			
		SB	A (6)				B (11)			
CSAH 11 & Access C	Side Street Stop	EB	-	-	-	A (2)	-	-	-	A (3)
		WB	B (11)	-	A (6)		C (19)	-	A (10)	
		NB	-	A (2)	A (1)		-	A (1)	A (0)	
		SB	A (6)	A (3)	-		A (8)	A (4)	-	
CSAH 61 & Access D	Side Street Stop	EB	A (4)	A (2)	-	A (2)	A (4)	A (2)	-	A (2)
		WB	-	A (1)	A (1)		-	A (2)	A (0)	
		NB	-	-	-		-	-	-	
		SB	B (13)	-	A (4)		D (27)	-	A (6)	

5. FUTURE CONDITIONS ANALYSIS - SCENARIO 2

This section of the report outlines the proposed development scenario, summarizes site-specific traffic characteristics, and develops future traffic projections for Scenario 2. The project location is shown in **Exhibit 1**.

5.1 Scenario 2 Development Characteristics and Site Access

The Scenario 2 development consists of 3,000,000 total square feet of development, 90% of which is expected to be business park (industrial) and 10% is expected to be commercial (retail). As was the case with Scenario 1, the retail/commercial space would generally be located along the north side of CSAH 44 (Big Woods Boulevard) in the eastern half of the site. The proposed business park/industrial space is dispersed throughout the remainder of the site.

As with Scenario 1, the development will generally be completed in two phases. Phase 1 consists of the portion of the development located north of CSAH 44 (i.e., all of the retail space and about half of the business park). Phase 1 is assumed to be completed by 2030. Phase 2 includes the remaining half of the total business park space that is located south of CSAH 44. This phase is anticipated to develop farther in the future than the Phase 1 portion of the development and is included in analysis year 2045.

The access plan for Scenario 2 is anticipated to be the same as what is outlined in Section 4.1 for Scenario 1. As previously mentioned, all site accesses should be reviewed with Carver County as development plans are completed to determine a final access plan to the site.

5.2 Scenario 2 Trip Generation

Proposed development traffic was determined based on data from the Institute of Transportation Engineers' (ITE) *Trip Generation*, 12th Edition. The manual provides peak hour trips rates/equations, inbound-outbound percentages that can be attributed to the proposed site. Based on a review of industrial land uses provided in the manual, LUC 130 (Industrial Park) was determined to be the most appropriate fit. LUC 820 (Shopping Center) was determined to be the most appropriate fit for the retail portion of the development.

Table 5-1 provides a summary of trip generation for development Scenario 2. Based on the trip generation calculation, the proposed Scenario 2 development is anticipated to generate 18,153 daily trips, including 858 total trips during the AM Peak Hour (622 entering, 238 exiting), and 1,599 total trips during the PM Peak Hour (653 entering, 947 exiting).

Table 5-1: Site-Generated Traffic Projections – Scenario 2

Land Use Description	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Phase 1 (2030)								
Industrial Park – ITE LUC 130	1,350 kSF	3,618	229	68	297	87	224	311
Passenger Vehicles	1,350 kSF	*2,970*	*208*	*49*	*257*	*65*	*206*	*270*
Trucks	1,350 kSF	*648*	*21*	*20*	*41*	*23*	*18*	*41*
Shopping Center – ITE LUC 820	300 kSF	10,917	164	101	264	479	500	978
Passenger Vehicles	*300 kSF*	*10,890*	*161*	*98*	*258*	*477*	*498*	*975*
Trucks	*300 kSF*	*27*	*3*	*3*	*6*	*2*	*2*	*3*
Phase 1 (2030) Totals	1,650 kSF	14,535	393	169	561	566	724	1,289
Passenger Vehicles	*1,650 kSF*	*13,860*	*369*	*147*	*515*	*542*	*704*	*1,245*
Trucks	*1,650 kSF*	*675*	*24*	*23*	*47*	*25*	*20*	*44*
Phase 2 (2045)								
Industrial Park – ITE LUC 130	1,350 kSF	3,618	229	69	297	87	223	310
Passenger Vehicles	1,350 kSF	*2,970*	*208*	*49*	*256*	*64*	*205*	*270*
Trucks	1,350 kSF	*648*	*21*	*19*	*40*	*22*	*18*	*40*
Buildout (2045) Totals	3,000 kSF	18,153	622	238	858	653	947	1,599
Passenger Vehicles	*3,000 kSF*	*16,830*	*577*	*196*	*771*	*606*	*909*	*1,515*
Trucks	*3,000 kSF*	*1,323*	*45*	*42*	*87*	*47*	*38*	*84*

5.3 Scenario 2 Directional Distribution

Because Scenario 2 differs from Scenario 1 only in intensity and not in land usage, the distribution of development trips to the Scenario 2 development is not expected to differ significantly from Scenario 1. The passenger vehicle distribution for the Phase 1 (2030) development is shown in Exhibit 8 and the truck distribution in Exhibit 9.

Opening Year (2030) Scenario 2 site trips were determined by combining passenger vehicle trips and truck trips. Passenger vehicle site trips were determined by applying passenger vehicle trip generation (Table 5-1) to the passenger vehicle distribution (Exhibit 8). Truck site trips were determined by applying truck trip generation (Table 5-1) to truck distribution (Exhibit 9). The total Opening Year (2030) Scenario 2 site trips are presented in **Exhibit 16**.

The Opening Year (2030) Scenario 2 Traffic Volumes were calculated by adding the Phase 1 site trips in Exhibit 16 to the Opening Year (2030) No-Build Traffic Volumes in Exhibit 6. The Opening Year (2030) Scenario 2 Traffic Volumes are shown in **Exhibit 17**.

The passenger vehicle and truck distributions for the Phase 2 developments of Scenario 2 are shown in Exhibit 12 and Exhibit 13, respectively. The Phase 2 Passenger Vehicle Site Trips for Scenario 2 were calculated by applying the passenger vehicle trip generation (Table 5-1) to the passenger vehicle distribution shown in Exhibit 12. The truck site trips were calculated by applying the truck trip generation shown in Table 5-1 to the truck distribution shown in Exhibit 13. The total Phase 2 site trips for Scenario 2 are shown in **Exhibit 18**.

The Design Year (2045) Scenario 2 Traffic Volumes were calculated by adding the Phase 1 and Phase 2 development trips in Exhibit 16 and Exhibit 18 to the Design Year (2045) No-Build Traffic Volumes in Exhibit 7. The Design Year (2045) Scenario 2 Traffic Volumes are shown in **Exhibit 19**.

5.4 Scenario 2 Future Pedestrian and Bicycle Infrastructure

During buildout of the site, trails/sidewalks should be provided along the major routes throughout the site with connections to the existing trail system to allow for multimodal site trips and improve the connectivity of the local trail system. This includes sidewalks along CSAH 11, CSAH 44, and a ravine crossing for the Southwest Regional Trail.

5.5 Opening Year (2030) Build Scenario 2 Capacity Analysis

An Opening Year (2030) Scenario 2 capacity analysis was conducted to determine the impacts of the short-term Scenario 2 development. The development north of CSAH 44 (Big Woods Boulevard) is included in this analysis, which consists of 1,350,000 square feet of industrial space (half of the total for Scenario 2) and all 300,000 square feet of retail space. Access A is assumed to be side street stop controlled and restricted to right-in/right-out while Access B is assumed to be controlled by a single-lane roundabout. The results of the analysis for the Opening Year (2030) Build Scenario 2 are shown in **Table 5-2**. Copies of the SimTraffic/Rodel analysis reports are provided in the appendix.

Based on the analysis in the Opening Year (2030) Build Scenario 2, the proposed short-tern Scenario 2 development is anticipated to result in slightly higher increases in delay than Scenario 1, but all intersections are anticipated to continue operating at LOS C or better. The 95th percentile queueing indicate the southbound right turn lane at CSAH 11 & US 212 Westbound sees 153' queues, exceeding the 90' of provided storage. All other 95th percentile queues are maintained within the provided storage bays.

Table 5-2: Opening Year (2030) Build Scenario 2 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	B (11)	A (4)	-	B (15)	C (26)	A (4)	-	B (15)
		WB	-	D (39)	B (17)		-	B (14)	A (5)	
		NB	D (43)	C (32)	A (7)		D (43)	D (41)	A (6)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	B (17)	A (6)	B (16)	-	B (20)	A (4)	B (17)
		WB	F (85)	A (7)	-		B (19)	A (10)	-	
		NB	-	-	-		-	-	-	
		SB	E (69)	-	A (8)		C (23)	-	B (16)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	B (14)	C (21)	A (4)	B (19)	D (44)	B (10)	A (1)	B (13)
		WB	D (39)	A (8)	A (3)		D (50)	B (11)	A (5)	
		NB	C (27)	E (61)	B (12)		D (47)	D (48)	A (5)	
		SB	C (29)	C (28)	A (5)		C (34)	C (34)	B (14)	
CSAH 10 & CSAH 11	Signal	EB	B (14)	B (13)	A (5)	B (15)	D (55)	B (12)	A (4)	C (24)
		WB	C (21)	B (14)	A (5)		E (71)	B (20)	B (11)	
		NB	B (17)	C (24)	A (8)		D (42)	C (34)	A (4)	
		SB	C (22)	C (24)	A (3)		D (50)	D (47)	A (10)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (3)			A (3)
		WB	A (3)				A (3)			
		NB	-				-			
		SB	A (3)				A (3)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (5)			A (7)	A (9)			A (9)
		WB	A (10)				A (11)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (7)			A (6)	B (11)			A (9)
		WB	A (6)				A (8)			
		NB	A (6)				A (9)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (5)			A (7)	A (6)			A (9)
		WB	A (7)				A (10)			
		NB	A (9)				A (10)			
		SB	A (8)				B (11)			
CSAH 11 & CSAH 61	Signal	EB	C (23)	D (36)	A (4)	B (11)	C (33)	E (55)	A (9)	B (20)
		WB	C (22)	B (12)	A (3)		D (47)	D (39)	B (13)	
		NB	B (12)	B (13)	A (9)		C (21)	A (10)	A (6)	
		SB	B (11)	A (7)	A (1)		C (21)	B (13)	A (2)	
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (13)	-	-	-	C (24)
		WB	C (29)	-	A (7)		C (29)	-	B (12)	
		NB	D (37)	A (8)	-		E (58)	B (19)	-	
		SB	-	B (11)	A (5)		-	C (27)	B (10)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (32)	-	A (8)	C (35)	D (42)	-	B (16)	A (9)
		WB	-	-	-		-	-	-	
		NB	-	D (41)	D (48)		-	A (6)	A (7)	
		SB	A (7)	A (5)	-		A (10)	A (6)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (1)	-	-	-	A (2)
		WB	-	-	A (3)		-	-	A (4)	
		NB	-	A (2)	A (1)		-	A (3)	A (2)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (7)			A (6)	A (9)			B (12)
		WB	A (8)				B (12)			
		NB	-				-			
		SB	A (6)				C (15)			

5.6 Design Year (2045) Build Scenario 2 Capacity Analysis

Capacity analysis results for the Design Year (2045) Scenario 1 conditions are provided in **Table 5-3**. The analysis was carried out assuming dual northbound right turn lanes at CSAH 11 & US 212 Eastbound Ramps which was shown to be necessary under Design Year (2045) No-Build conditions if an additional interchange is not constructed for the developments south of US Highway 212.

The results of the capacity analysis show the system has increased delay compared to Scenario 1, particularly the roundabouts along CSAH 44 (Big Woods Boulevard), but all intersections are anticipated to continue operating at LOS D or better. All roundabout approaches operate at LOS C or better. Some individual movements at signalized intersections are anticipated to operate at LOS E or LOS F, as with the Design Year (2045) No-Build scenario, but these intersections/movements are primarily along CSAH 10 (Engler Boulevard) and are relatively unaffected by the proposed development. The overall network operations are anticipated to be acceptable.

Based on review of the 95th percentile queueing results, the US Highway 212 westbound exit ramp at CSAH 44 sees significant queueing during the PM peak with 95th percentile queues of 475', but queues would need to extend more than 1,000 feet to reach the freeway itself and are not at risk of doing so. The 95th percentile queues at the southbound approach of the Access B roundabout are anticipated to be 225' during the PM peak and the site should be designed to accommodate queues of this length. The southbound right turn lane at CSAH 11 & US 212 Westbound ramps is anticipated to experience 244' queues during the PM peak, exceeding the 90' of provided storage. A turn lane extension (at least 250') is required to maintain the anticipated queues. All other 95th percentile queues were acceptable, except those outlined in the Design Year (2045) No-Build section.

Table 5-3: Design Year (2045) Build Scenario 2 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	C (23)	A (6)	-	C (24)	C (26)	A (6)	-	B (16)
		WB	-	D (48)	C (31)		-	B (17)	A (6)	
		NB	E (60)	C (27)	A (10)		D (37)	C (34)	A (8)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	D (39)	B (15)	C (35)	-	D (40)	A (6)	C (33)
		WB	F (100+)	A (7)	-		C (25)	A (9)	-	
		NB	-	-	-		-	-	-	
		SB	F (100+)	-	B (14)		C (35)	-	D (36)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	D (50)	D (51)	B (18)	D (47)	D (41)	B (15)	A (2)	C (26)
		WB	F (100+)	A (8)	A (3)		D (49)	C (33)	B (17)	
		NB	E (61)	F (85)	D (48)		C (27)	D (44)	A (9)	
		SB	F (87)	E (72)	C (31)		C (27)	D (36)	B (18)	
CSAH 10 & CSAH 11	Signal	EB	C (22)	C (20)	A (8)	C (22)	C (28)	B (14)	A (6)	C (23)
		WB	C (34)	B (17)	A (8)		C (24)	C (24)	B (18)	
		NB	C (26)	C (32)	B (14)		C (27)	C (25)	A (6)	
		SB	D (38)	C (30)	A (7)		C (28)	D (41)	B (16)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (3)			A (3)	A (4)			A (4)
		WB	A (3)				A (4)			
		NB	-				-			
		SB	A (3)				A (4)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (6)			B (11)	B (11)			B (13)
		WB	C (16)				C (18)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (8)			A (7)	C (15)			C (17)
		WB	A (7)				C (25)			
		NB	A (7)				A (10)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (7)			B (11)	A (8)			C (19)
		WB	A (9)				C (21)			
		NB	B (15)				C (21)			
		SB	B (12)				C (18)			
CSAH 11 & CSAH 61	Signal	EB	C (22)	D (38)	A (7)	B (18)	D (35)	D (48)	B (15)	C (28)
		WB	C (29)	B (14)	A (4)		D (42)	D (38)	B (16)	
		NB	B (15)	C (20)	B (16)		D (36)	B (16)	A (10)	
		SB	B (14)	B (11)	A (2)		D (51)	C (32)	A (4)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (15)	-	-	-	D (42)
		WB	C (32)	-	B (13)		D (44)	-	C (30)	
		NB	D (37)	A (10)	-		E (63)	C (28)	-	
		SB	-	B (13)	A (7)		-	E (59)	C (34)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (33)	-	B (12)	C (24)	E (60)	-	C (35)	B (12)
		WB	-	-	-		-	-	-	
		NB	-	C (20)	C (31)		-	A (9)	A (6)	
		SB	B (13)	A (6)	-		B (12)	A (7)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (2)	-	-	-	A (3)
		WB	-	-	A (5)		-	-	A (6)	
		NB	-	A (3)	A (2)		-	A (4)	A (3)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (9)			A (8)	B (12)			C (16)
		WB	B (10)				C (18)			
		NB	A (6)				A (8)			
		SB	A (7)				C (20)			
CSAH 11 & Access C	Side Street Stop	EB	-	-	-	A (3)	-	-	-	A (6)
		WB	C (17)	-	A (7)		E (36)	-	C (21)	
		NB	-	A (2)	A (1)		-	A (2)	A (1)	
		SB	A (5)	A (3)	-		B (12)	A (6)	-	
CSAH 61 & Access D	Side Street Stop	EB	A (4)	A (2)	-	A (2)	A (8)	A (3)	-	A (3)
		WB	-	A (1)	A (1)		-	A (2)	A (1)	
		NB	-	-	-		-	-	-	
		SB	C (21)	-	A (7)		C (18)	-	A (6)	

6. ANALYSIS OF POTENTIAL CREEK CROSSING

Establishing a connection from the internal “Spine Road” to the Creek Road & Chaska Creek Boulevard roundabout north of the AUAR area has been explored as a potential option for improving connectivity throughout the area. This improvement would have a significant impact on travel patterns to/from the proposed development site and would impact the required mitigation plan. Analysis of the impacts associated with a creek crossing was focused on the Design Year (2045), to capture the long term impacts of the crossing on the network traffic operations.

The global distribution of traffic would not be affected by the implementation of a creek crossing, but the new connection would create a more convenient route into the site from the north for many of the vehicles traveling to/from the north. In general, the impact of this connection would be felt significantly by the Phase 1 development traffic, but it is not anticipated that Phase 2 development traffic would be affected in a meaningful way. The distribution of passenger vehicle traffic for the Phase 1 development with the implementation of a creek crossing connection is shown in **Exhibit 20**. The distribution of heavy vehicle traffic to the Phase 1 development with the implementation of a creek crossing is shown in **Exhibit 21**.

6.1 Design Year (2045) Scenario 1 with Creek Crossing

Analysis was conducted on the Design Year (2045) Scenario 1 with Creek Crossing scenario to determine the traffic impacts of the proposed development with a creek crossing in place. The total trip assignment for Phase 1 of Scenario 1 with a creek crossing in place is shown in **Exhibit 22**. The Design Year (2045) Scenario 1 with Creek Crossing traffic volumes are shown in **Exhibit 23**. Results of the capacity analysis are shown below in **Table 6-1**.

The analysis indicates that implementation of a creek crossing will worsen traffic operations along CSAH 10 but will provide some reduction in delays along CSAH 44. Overall, it is not anticipated that establishing a creek crossing connection would significantly improve traffic operations throughout the study area. However, improved connectivity offered by the connection could benefit businesses throughout the area. Furthermore, this analysis did not include the potential completion of the CSAH 44 interchange.

Table 6-1: Design Year (2045) Build Scenario 1 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	B (20)	A (8)	-	C (23)	C (28)	A (6)	-	B (17)
		WB	-	D (47)	C (35)		-	B (17)	A (8)	
		NB	E (62)	E (67)	A (9)		D (36)	E (71)	A (8)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	D (44)	B (16)	D (37)	-	E (62)	A (7)	D (41)
		WB	F (100+)	A (6)	-		C (25)	A (9)	-	
		NB	-	-	-		-	-	-	
		SB	F (100+)	-	B (16)		D (35)	-	D (39)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	D (41)	D (43)	B (17)	D (49)	D (44)	C (34)	A (7)	C (32)
		WB	F (100+)	A (8)	A (3)		D (44)	D (39)	B (16)	
		NB	E (78)	F (95)	D (52)		C (23)	C (28)	B (15)	
		SB	F (100+)	F (83)	D (47)		C (26)	D (36)	B (17)	
CSAH 10 & CSAH 11	Signal	EB	B (20)	B (20)	A (8)	C (21)	C (26)	B (14)	A (6)	C (22)
		WB	C (29)	B (15)	A (7)		C (31)	C (24)	B (16)	
		NB	C (24)	C (33)	B (15)		C (27)	C (25)	A (5)	
		SB	D (36)	C (29)	A (6)		C (29)	D (39)	B (15)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (4)			A (4)	A (4)			A (5)
		WB	A (4)				A (4)			
		NB	A (4)				A (5)			
		SB	A (5)				A (6)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (5)			A (10)	A (7)			A (8)
		WB	B (14)				B (12)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (7)			A (5)	A (8)			A (6)
		WB	A (6)				A (8)			
		NB	A (6)				A (4)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (7)			A (10)	A (7)			B (13)
		WB	A (8)				B (14)			
		NB	B (13)				B (14)			
		SB	B (11)				C (16)			
CSAH 11 & CSAH 61	Signal	EB	C (22)	D (41)	A (7)	B (18)	D (40)	D (49)	B (14)	C (26)
		WB	C (31)	B (14)	A (4)		D (44)	D (39)	B (15)	
		NB	B (15)	C (21)	B (16)		C (28)	B (12)	A (9)	
		SB	B (14)	A (10)	A (2)		E (58)	C (26)	A (3)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (16)	-	-	-	D (38)
		WB	C (32)	-	B (12)		D (45)	-	C (31)	
		NB	D (40)	B (10)	-		E (60)	C (26)	-	
		SB	-	B (13)	A (6)		-	D (48)	C (21)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	C (31)	-	B (11)	C (23)	D (53)	-	C (31)	B (10)
		WB	-	-	-		-	-	-	
		NB	-	C (32)	C (27)		-	A (7)	A (6)	
		SB	B (12)	A (6)	-		B (11)	A (6)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (2)	-	-	-	A (2)
		WB	-	-	A (4)		-	-	A (5)	
		NB	-	A (2)	A (2)		-	A (3)	A (2)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (8)			A (6)	A (8)			A (8)
		WB	A (7)				A (10)			
		NB	A (5)				A (5)			
		SB	A (5)				A (8)			
CSAH 11 & Access C	Side Street Stop	EB	-	-	-	A (3)	-	-	-	A (3)
		WB	B (13)	-	A (6)		C (18)	-	A (6)	
		NB	-	A (2)	A (1)		-	A (2)	A (0)	
		SB	A (6)	A (3)	-		A (8)	A (4)	-	
CSAH 61 & Access D	Side Street Stop	EB	A (4)	A (2)	-	A (2)	A (9)	A (2)	-	A (2)
		WB	-	A (1)	A (0)		-	A (1)	A (1)	
		NB	-	-	-		-	-	-	
		SB	C (17)	-	A (4)		C (20)	-	A (7)	

6.2 Design Year (2045) Scenario 2 with Creek Crossing

Analysis was conducted on the Design Year (2045) Scenario 2 with Creek Crossing scenario to determine the traffic impacts of the proposed development with a creek crossing in place. The total trip assignment for Phase 1 of Scenario 2 with a creek crossing in place is shown in **Exhibit 24**. The Design Year (2045) Scenario 2 with Creek Crossing traffic volumes are shown in **Exhibit 25**. Results of the capacity analysis are shown below in .

The analysis indicates that, in line with the results for Scenario 1, implementation of a creek crossing will worsen traffic operations along CSAH 10 but will provide a minor reduction in delays along CSAH 44. While the improved connectivity offered by the connection could benefit businesses throughout the area, it is not anticipated that the establishment of a creek crossing would provide significant operational benefit. However, this analysis does not take into account the potential completion of the CSAH 44 interchange which could impact this.

Table 6-2: Design Year (2045) Build Scenario 1 Level of Service

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 10 & US 212 Eastbound Ramps	Signal	EB	C (21)	A (8)	-	C (23)	C (29)	A (6)	-	B (18)
		WB	-	D (47)	C (35)		-	B (17)	A (8)	
		NB	E (62)	E (63)	A (9)		D (35)	C (33)	A (8)	
		SB	-	-	-		-	-	-	
CSAH 10 & US 212 Westbound Ramps	Signal	EB	-	E (62)	C (29)	E (56)	-	F (94)	B (10)	D (53)
		WB	F (100+)	B (11)	-		C (26)	A (9)	-	
		NB	-	-	-		-	-	-	
		SB	F (100+)	-	D (51)		D (37)	-	D (39)	
CSAH 10 & Chaska Creek Boulevard	Signal	EB	E (73)	E (76)	D (39)	F (94)	F (88)	F (92)	D (36)	D (43)
		WB	F (100+)	A (9)	A (3)		D (45)	C (33)	B (13)	
		NB	F (100+)	F (100+)	F (98)		C (25)	D (38)	C (25)	
		SB	F (100+)	F (100+)	D (51)		C (27)	C (33)	B (15)	
CSAH 10 & CSAH 11	Signal	EB	C (22)	C (21)	A (7)	C (22)	C (27)	B (14)	A (6)	C (22)
		WB	C (34)	B (17)	A (8)		C (25)	C (24)	B (16)	
		NB	C (26)	C (33)	B (16)		C (27)	C (25)	A (5)	
		SB	D (39)	C (31)	A (6)		C (28)	D (38)	B (15)	
Chaska Creek Boulevard & Creek Road	Round-about	EB	A (4)			A (5)	A (4)			A (5)
		WB	A (4)				A (4)			
		NB	A (5)				A (6)			
		SB	A (6)				A (6)			
CSAH 44 & US 212 Eastbound Ramp	Round-about	EB	A (5)			A (8)	A (8)			B (13)
		WB	C (15)				B (13)			
		NB	-				-			
		SB	-				-			
CSAH 44 & US 212 Westbound Ramp	Round-about	EB	A (8)			A (6)	B (10)			A (7)
		WB	A (7)				A (9)			
		NB	A (7)				A (9)			
		SB	-				-			
CSAH 44 & CSAH 11	Round-about	EB	A (7)			C (18)	A (8)			C (16)
		WB	C (22)				C (19)			
		NB	C (21)				C (16)			
		SB	C (16)				C (18)			
CSAH 11 & CSAH 61	Signal	EB	C (26)	D (38)	A (6)	B (18)	D (37)	D (47)	B (15)	C (28)
		WB	C (28)	B (13)	A (4)		D (42)	D (44)	B (18)	
		NB	B (14)	C (22)	B (17)		D (36)	B (14)	A (9)	
		SB	B (16)	A (10)	A (1)		D (46)	D (37)	A (4)	

Intersection	Control	Approach	Operations by Movement							
			AM Peak Hour				PM Peak Hour			
			Left	Through	Right	Overall	Left	Through	Right	Overall
CSAH 11 & US 212 Westbound Ramps	Signal	EB	-	-	-	B (15)	-	-	-	D (44)
		WB	C (32)	-	B (14)		D (47)	-	C (33)	
		NB	D (39)	B (10)	-		E (64)	C (27)	-	
		SB	-	B (13)	A (6)		-	E (66)	D (37)	
CSAH 11 & US 212 Eastbound Ramps	Signal	EB	D (36)	-	B (13)	C (25)	E (57)	-	C (32)	B (11)
		WB	-	-	-		-	-	-	
		NB	-	C (34)	C (28)		-	A (8)	A (6)	
		SB	B (13)	A (6)	-		B (13)	A (6)	-	
CSAH 11 & Access A	Side Street Stop	EB	-	-	-	A (2)	-	-	-	A (3)
		WB	-	-	A (5)		-	-	A (6)	
		NB	-	A (3)	A (2)		-	A (4)	A (3)	
		SB	-	A (1)	-		-	A (1)	-	
CSAH 44 & Access B	Round-about	EB	A (8)			A (7)	A (9)			A (9)
		WB	A (8)				B (11)			
		NB	A (5)				A (6)			
		SB	A (6)				B (11)			
CSAH 11 & Access C	Side Street Stop	EB	-	-	-	A (3)	-	-	-	A (5)
		WB	B (13)	-	A (7)		D (32)	-	C (19)	
		NB	-	A (3)	A (1)		-	A (2)	A (1)	
		SB	A (6)	A (4)	-		A (10)	A (6)	-	
CSAH 61 & Access D	Side Street Stop	EB	A (4)	A (2)	-	A (2)	A (7)	A (2)	-	A (2)
		WB	-	A (1)	A (0)		-	A (2)	A (1)	
		NB	-	-	-		-	-	-	
		SB	F (50)	-	A (3)		D (25)	-	A (7)	

7. TURN LANE WARRANT ANALYSIS

A turn lane warrant analysis was conducted at the proposed stop-controlled site access points for Opening Year (2030) and Design Year (2045) of Scenario 1 and Scenario 2 to determine the need for major-road left and right turn lanes at the site access points. The warrant analysis was carried out using the methodologies outlined in National Cooperative Highway Research Program (NCHRP) Report 457 on the need for major-road turn lanes at unsignalized intersections. Results of the analysis are summarized below in **Table 7-1**.

Table 7-1: Turn Lane Warrant Analysis Summary

Intersection	Movement	Turn Lane Warrant Result by Scenario			
		Scenario 1		Scenario 2	
		2030	2045	2030	2045
CSAH 11 & Access A	NBR	MET	MET	MET	MET
CSAH 11 & Access C	NBR	-	MET	-	MET
	SBL	-	Not Met	-	MET
CSAH 61 & Access D	WBR	-	Not Met	-	Not Met
	EBL	-	MET	-	MET

Results of the turn lane warrant analysis indicate that Scenario 1 will require right turn lanes along CSAH 11 at Access A and Access C and a left turn lane along CSAH 61 at Access D. Scenario 2 will additionally require a southbound left turn lane along CSAH 11 at Access C.

8. CONCLUSION AND RECOMMENDATIONS

A traffic analysis was performed to quantify the impacts of the proposed Big Woods Industrial development located between CSAH 11 (Jonathan Carver Parkway) and US Highway 212 in Chaska, MN. Characteristics of the development and results of the analysis are summarized below.

7.1 Project Characteristics

The identified AUAR scenarios include a split of 90% industrial area and 10% retail area (by gross floor area). Two scenarios were identified, with Scenario 1 representing the current land use plan for the area (2,000,000 square feet of development area) and Scenario 2 representing the maximum development intensity for the site (3,000,000 square feet of development area).

The development would be completed in two phases, with the area north of CSAH 44 (Big Woods Boulevard) being included in phase 1. This area includes all of the retail development and half of the industrial development. This phase is assumed to be completed by the selected Opening Year of 2030. The remaining portion of the development is assumed to be built-out in the long term, by the studied Design Year of 2045.

The study area includes the following intersections along with the proposed site access points:

- CSAH 10 (Engler Boulevard) & US Highway 212 Westbound Ramps
- CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
- CSAH 10 (Engler Boulevard) & Chaska Creek Boulevard
- CSAH 10 (Engler Boulevard) & CSAH 11 (Jonathan Carver Parkway)
- Chaska Creek Boulevard & Creek Road
- CSAH 44 (Big Woods Boulevard) & Westbound U.S. Highway 212
- CSAH 44 (Big Woods Boulevard) & Eastbound U.S. Highway 212
- CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
- CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
- CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
- CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Eastbound Ramps

The listed intersections were analyzed in the following scenarios:

- Existing Year (2025)
- Opening Year (2030) No-Build
- Opening Year (2030) Build Scenario 1
- Opening Year (2030) Build Scenario 2
- Design Year (2045) No-Build
- Design Year (2045) Build Scenario 1
- Design Year (2045) Build Scenario 2

The proposed development would include four (4) access points (A-D) at full buildout. Access A is a right-in/right-out access point along CSAH 11 (Jonathan Carver Parkway) north of CSAH 44 (Big Woods Boulevard). Access B is a proposed single-lane roundabout along CSAH 44. Access C is a proposed full-movement access along CSAH 11 south of CSAH 44. Access D is a full-movement access along CSAH 61 (Chaska Boulevard).

All site access should be reviewed with Carver County as development plans are completed to determine a final access plan to the site.

7.2 Existing Year (2025) Capacity Analysis Summary

A capacity analysis was conducted for Existing Year (2025) traffic conditions at the study intersections to determine baseline existing conditions. Based on the analysis, all intersections are anticipated to operate at acceptable LOS and there are no queuing issues at the study intersections.

7.3 Opening Year (2030) No-Build Capacity Analysis Summary

A capacity analysis was conducted for the Opening Year (2030) No-Build traffic conditions at the study intersections to determine baseline conditions for the 2030 analysis year. A single-lane roundabout was assumed at CSAH 11 & CSAH 44 as well as improvements to the CSAH 10 & CSAH 11 intersection. Based on the analysis, all intersections are anticipated to operate at acceptable LOS and there are no queuing issues at the study intersections.

7.4 Opening Year (2030) Build Scenario 1 Capacity Analysis Summary

The Opening Year (2030) Scenario 1 development would include 900,000 square feet of industrial space and 200,000 square feet of retail space north of CSAH 44 (Big Woods Boulevard). Access B was modeled as a single-lane roundabout and Access A as a right-in/right-out stop controlled access.

Opening Year (2030) Scenario 1 conditions analysis indicated that all intersections operate at acceptable LOS and there are no queueing issues at the study intersections.

7.5 Opening Year (2030) Build Scenario 2 Capacity Analysis Summary

The Opening Year (2030) Scenario 2 development would include 1,350,000 square feet of industrial space and 300,000 square feet of retail space north of CSAH 44 (Big Woods Boulevard). Access B was modeled as a single-lane roundabout and Access A as a right-in/right-out stop controlled access.

Opening Year (2030) Scenario 2 conditions analysis indicated that all intersections operate at acceptable LOS and there are no queueing issues at the study intersections.

7.6 Design Year (2045) No-Build Capacity Analysis Summary

A capacity analysis was conducted for the Design Year (2045) No-Build traffic conditions at the study intersections to determine baseline conditions for the 2045 analysis year. No further geometric changes were assumed besides the Opening Year (2030) No-Build changes. Based on the analysis, delays are anticipated to increase significantly due to background development. The intersection of CSAH 11 (Jonathan Carver Parkway) & US Highway 212 Eastbound Ramps is anticipated to experience significant operational issues and may require dual northbound right turn lanes if an additional interchange is not constructed to accommodate traffic from the developments south of US Highway 212. With an additional northbound right turn lane in place, the intersection to operate at acceptable LOS. Some individual movements at signalized intersections are anticipated to experience LOS E or LOS F but overall network operations are acceptable. A few movements are anticipated to require turn lane extensions under this scenario.

7.7 Design Year (2045) Build Scenario 1 Capacity Analysis Summary

Under Design Year (2045) Scenario 1 conditions, network operations are generally anticipated to be similar to the Design Year (2045) No-Build operations, with some minor increases in delay, particularly along CSAH 44 (Big Woods Boulevard). With the Design Year (2040) No-Build mitigations in place, the network is anticipated acceptably.

7.8 Design Year (2045) Build Scenario 2 Capacity Analysis Summary

The long-term analysis of Scenario 2 indicates that delays are likely to increase compared to the Design Year (2045) No-Build conditions, but all intersections are anticipated to operate acceptably with the No-Build mitigations in place. Delays are slightly higher than Scenario 1, particularly along CSAH 44 (Big Woods Boulevard) but all approaches at the analyzed roundabouts are anticipated to operate at LOS C or better with acceptable levels of queueing.

7.9 Mitigation Plan

The following provides a summary of mitigation improvements that were identified as part of the traffic analysis for the proposed development.

Existing (2025) Conditions

- No Mitigation Necessary

Opening Year (2030) No-Build Conditions

- No Mitigation Necessary

Opening Year (2030) Build Scenario 1 Conditions

- Install a dedicated northbound right turn lane and provide side street stop control at CSAH 11 & Access A.
- Install a single lane roundabout at CSAH 44 & Access B.
- As parcels begin to develop on the AUAR area, install sidewalk and trail connections to connect to existing pedestrian and bicycle infrastructure.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length.

Opening Year (2030) Build Scenario 2 Conditions

- Install a dedicated northbound right turn lane and provide side street stop control at CSAH 11 & Access A.
- Install a single lane roundabout at CSAH 44 & Access B.
- As parcels begin to develop on the AUAR area, install sidewalk and trail connections to connect to existing pedestrian and bicycle infrastructure.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250’ in length.

Design Year (2045) No-Build Conditions

- Install dual northbound right turn lanes at CSAH 11 & US Highway 212 Eastbound Ramps.

- Extend the southbound right turn lane at CSAH 10 & US Highway 212 Westbound Ramps to 450'.
- Extend the dedicated southbound left turn lane at CSAH 10 & Chaska Creek Boulevard to 400'.
- Extend the westbound left turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 550'.

Design Year (2045) Build Scenario 1 Conditions

- All modifications from Deign Year (2045) No-Build & Opening Year (2030) Scenario 1 Conditions.
- Install a dedicated eastbound left turn lane at CSAH 61 & Access D.
- Side-street stop control is adequate at accesses A, C, & D.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250' in length.

Design Year (2045) Build Scenario 2 Conditions

- All modifications from Deign Year (2045) No-Build & Opening Year (2030) Scenario 2 Conditions.
- Install a dedicated eastbound left-turn lane at CSAH 61 & Access D.
- Install a dedicated southbound left-turn lane at CSAH 11 & Access C.
- Side-street stop control is adequate at accesses A, C, & D.
- Extend the southbound right turn lane at CSAH 11 & US Highway 212 Westbound Ramps to 250' in length.

Note that the overall roadway network in the area has capacity to accommodate the AUAR development in Scenarios 1 & 2. It is not anticipated that roadway connection on the north side of the AUAR site to the Creek Road & Chaska Creek Boulevard roundabout or the addition of the southbound on/off ramps at Big Woods Boulevard & US Highway 212 would be required from a traffic capacity standpoint.

9. APPENDIX

Appendix A: Exhibits

Appendix B: Turning Movement Counts

Appendix C: Development Scenario Concepts

Appendix D: Existing Year (2025) Analysis Reports

Appendix E: Opening Year (2030) No-Build Analysis Reports

Appendix F: Opening Year (2030) Build Scenario 1 Analysis Reports

Appendix G: Design Year (2045) No-Build Analysis Reports

Appendix H: Design Year (2045) Build Scenario 1 Analysis Reports

Appendix I: Opening Year (2030) Build Scenario 2 Analysis Reports

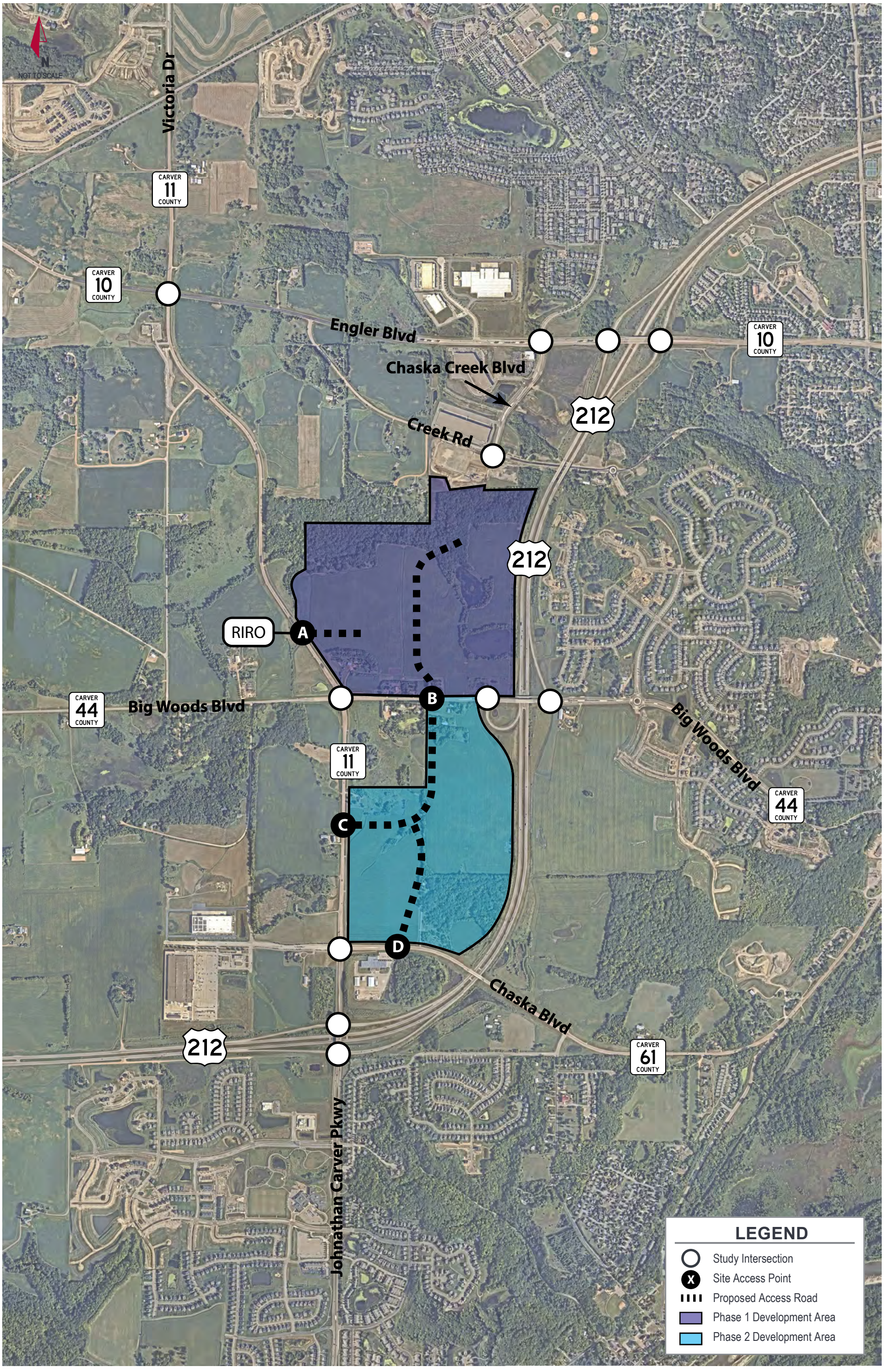
Appendix J: Design Year (2045) Build Scenario 2 Analysis Reports

Appendix K: Turn Lane Warrant Analysis

Appendix A:

Exhibits

Exhibit 1. Project Location Map
Exhibit 2. Existing Geometry and Intersection Control
Exhibit 3. Existing Year (2025) Traffic Volumes
Exhibit 4. Background Development Distribution
Exhibit 5. Background Development Site Trips
Exhibit 6. Opening Year (2030) No-Build Traffic Volumes
Exhibit 7. Design Year (2045) No-Build Traffic Volumes
Exhibit 8. Passenger Vehicle Distribution (Phase 1)
Exhibit 9. Truck Distribution (Phase 1)
Exhibit 10. Scenario 1 Peak Hour Site Trips (Phase 1)
Exhibit 11. Opening Year (2030) Scenario 1 Traffic Volumes
Exhibit 12. Passenger Vehicle Distribution (Phase 2)
Exhibit 13. Truck Distribution (Phase 2)
Exhibit 14. Scenario 1 Site Trips (Phase 2)
Exhibit 15. Design Year (2045) Scenario 1 Traffic Volumes
Exhibit 16. Scenario 2 Peak Hour Site Trips (Phase 1)
Exhibit 17. Opening Year (2030) Scenario 2 Traffic Volumes
Exhibit 18. Scenario 2 Passenger Vehicle Trips (Phase 2)
Exhibit 19. Design Year (2045) Scenario 2 Traffic Volumes
Exhibit 20. Passenger Vehicle Distribution (Phase 1 with Creek Crossing)
Exhibit 21. Heavy Vehicle Distribution (Phase 1 with Creek Crossing)
Exhibit 22. Scenario 1 Peak Hour Site Trips (Phase 1 with Creek Crossing)
Exhibit 23. Design Year (2045) Scenario 1 Traffic Volumes with Creek Crossing
Exhibit 24. Scenario 2 Peak Hour Site Trips (Phase 1 with Creek Crossing)
Exhibit 25. Design Year (2045) Scenario 2 Traffic Volumes with Creek Crossing

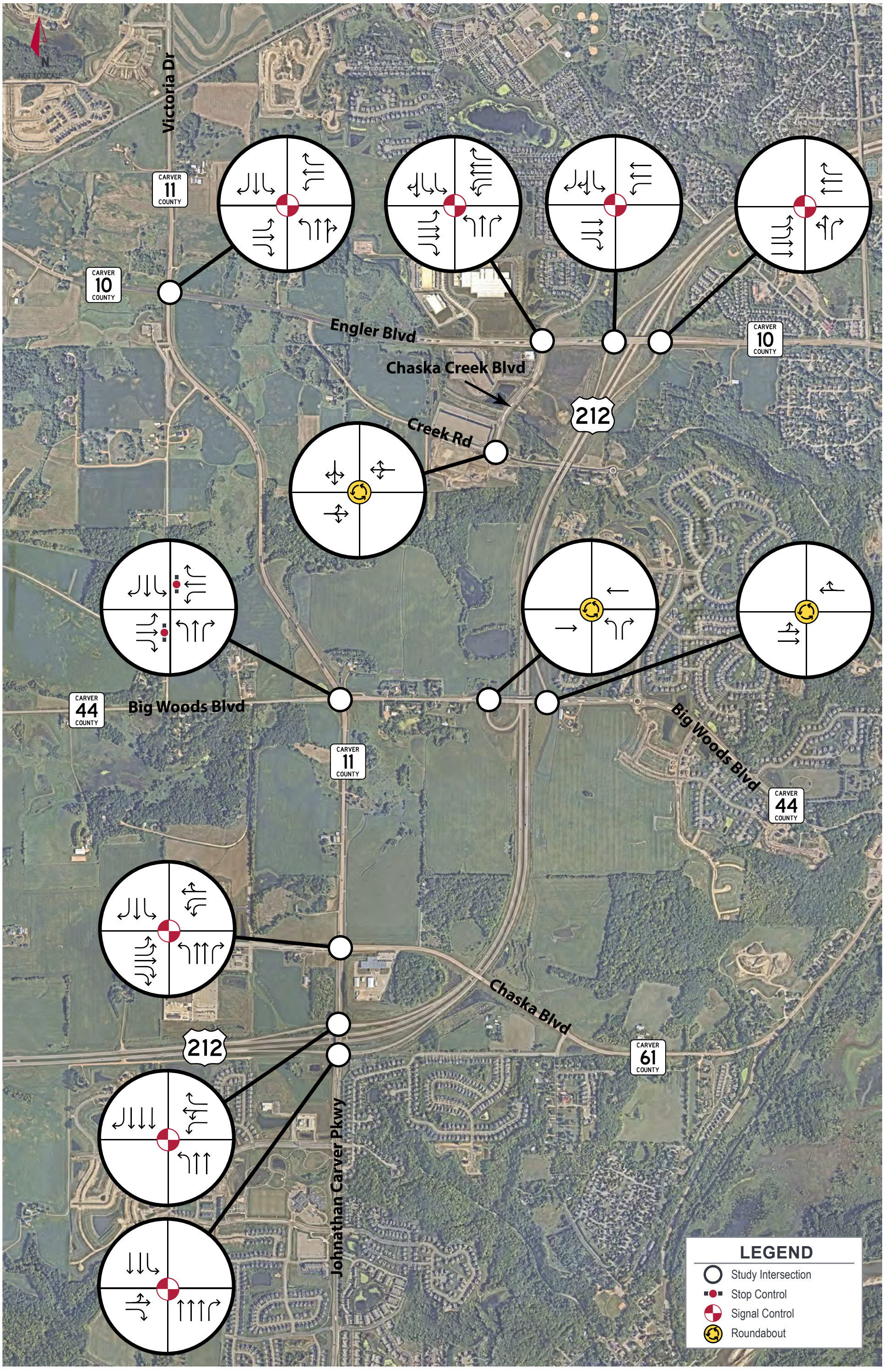


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EXHIBIT 1

PROJECT LOCATION MAP

BIG WOODS BUSINESS PARK — CHASKA, MN

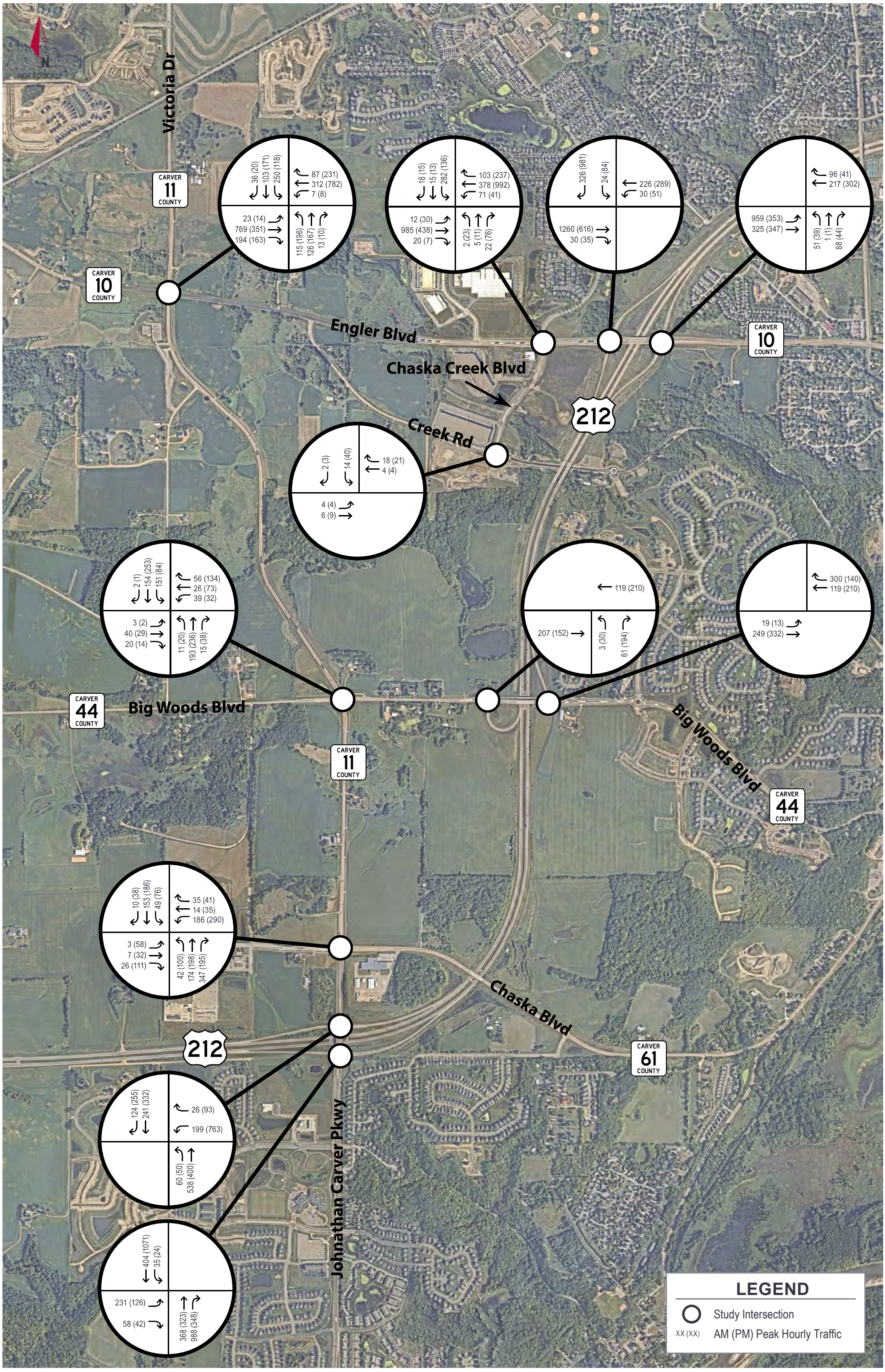


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EXHIBIT 2

EXISTING GEOMETRY AND INTERSECTION CONTROL

BIG WOODS BUSINESS PARK — CHASKA, MN

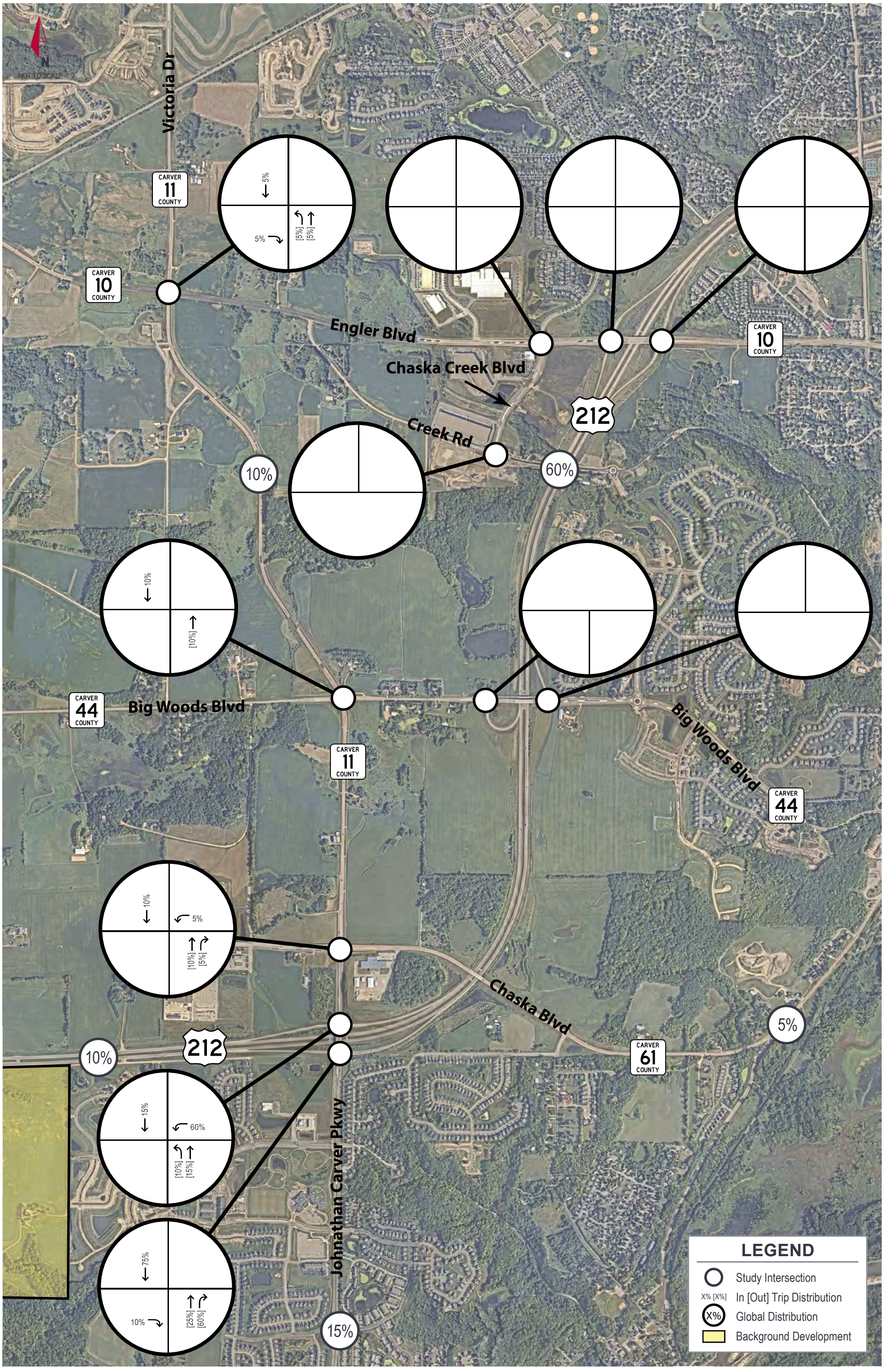


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EXHIBIT 3

EXISTING YEAR (2025) TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

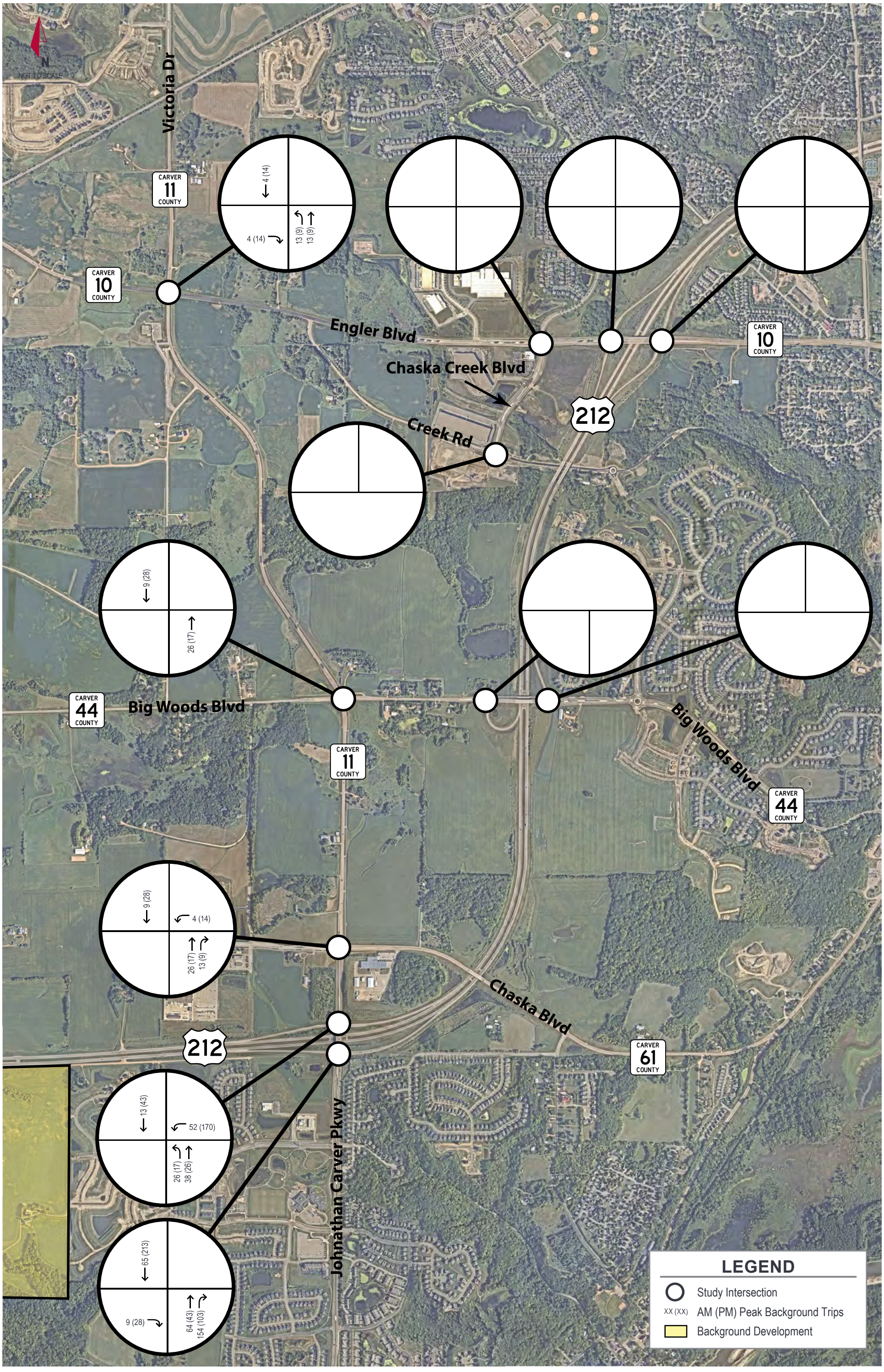


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EXHIBIT 4

BACKGROUND DEVELOPMENT DISTRIBUTION

BIG WOODS BUSINESS PARK — CHASKA, MN

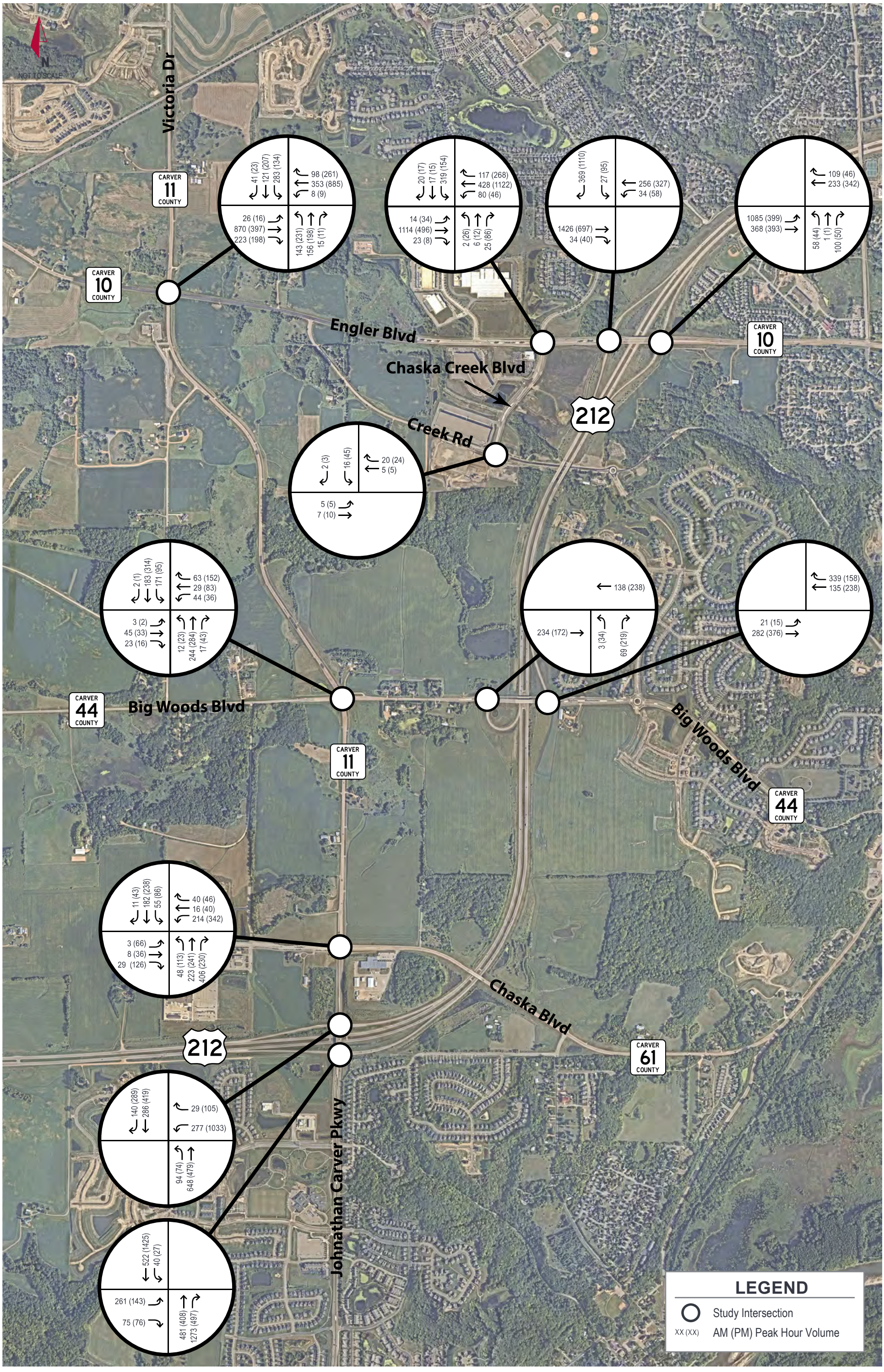


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EXHIBIT 5

BACKGROUND DEVELOPMENT SITE TRIPS

BIG WOODS BUSINESS PARK — CHASKA, MN

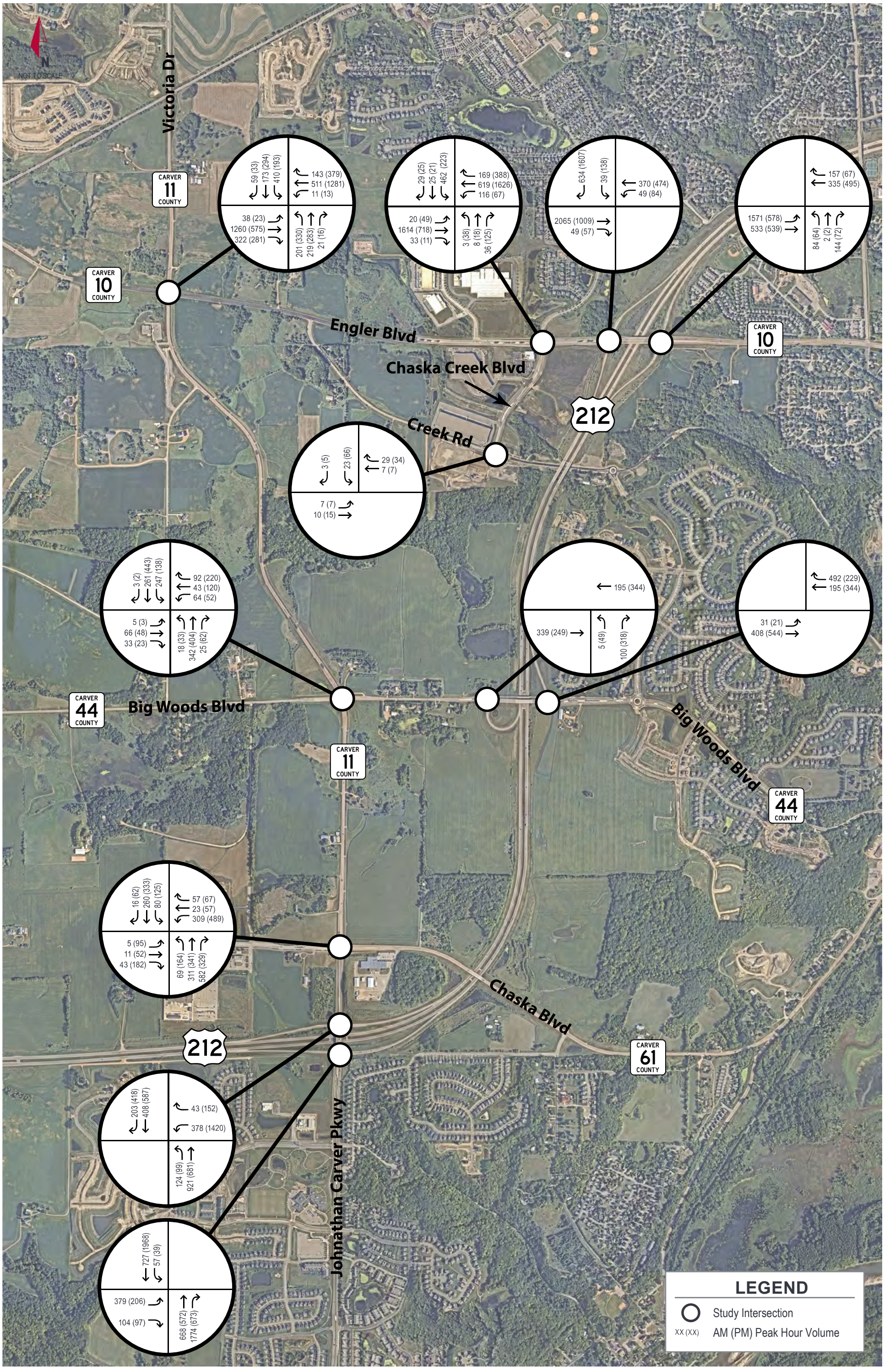


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EXHIBIT 6

OPENING YEAR (2030) NO-BUILD TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

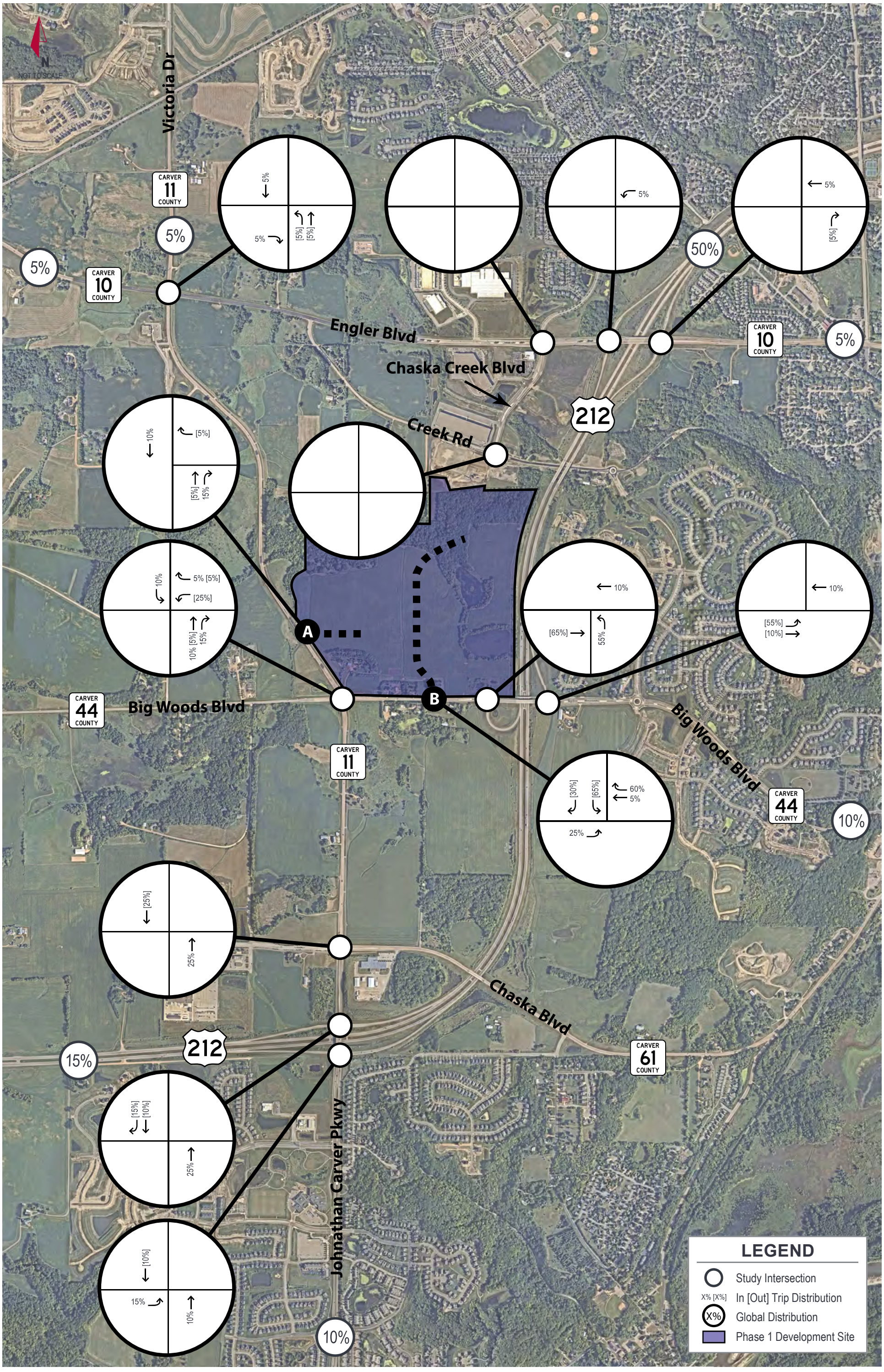


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EXHIBIT 7

DESIGN YEAR (2045) NO-BUILD TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

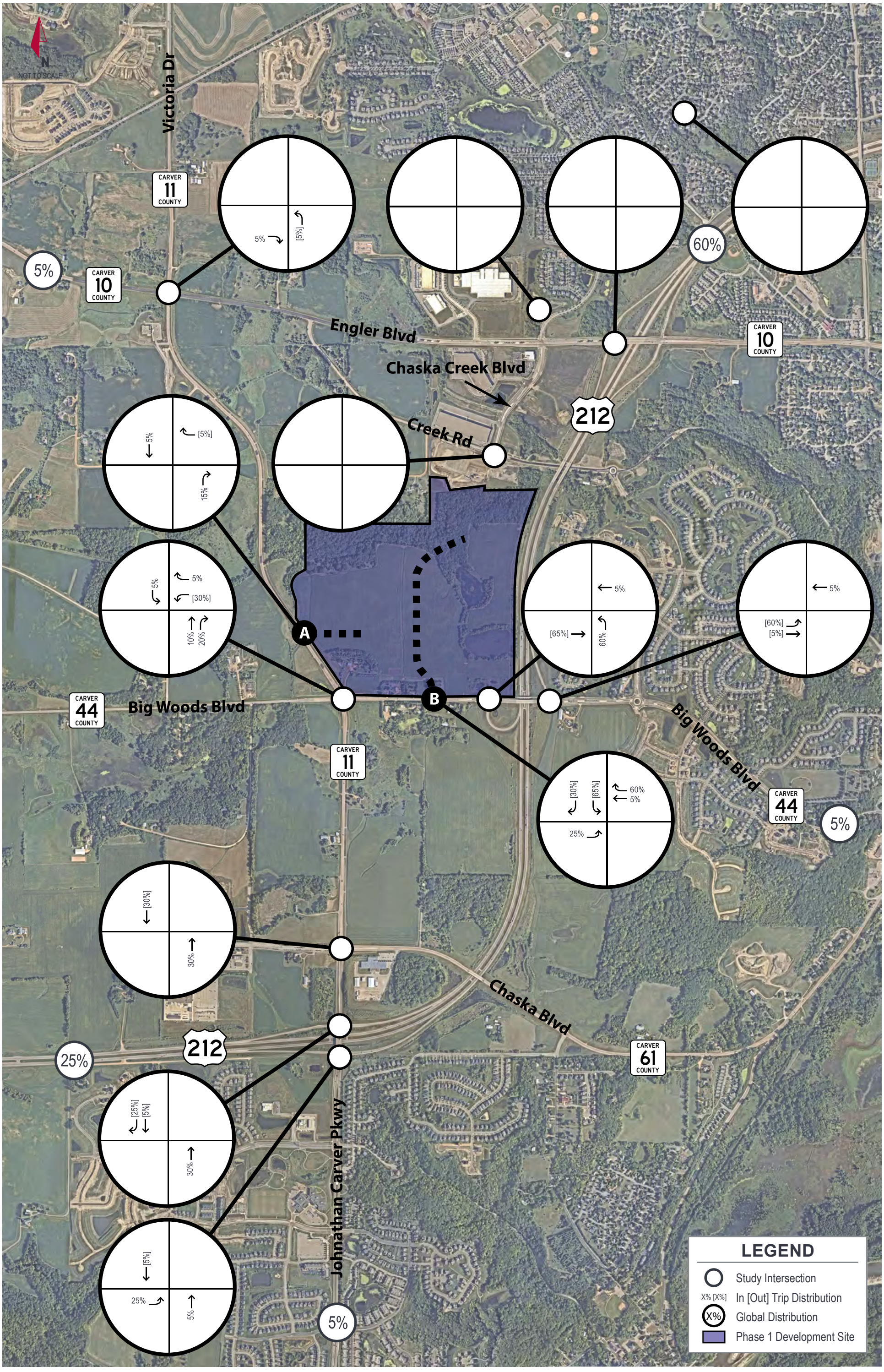


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EXHIBIT 8

PASSENGER VEHICLE DISTRIBUTION (PHASE 1)

BIG WOODS BUSINESS PARK — CHASKA, MN

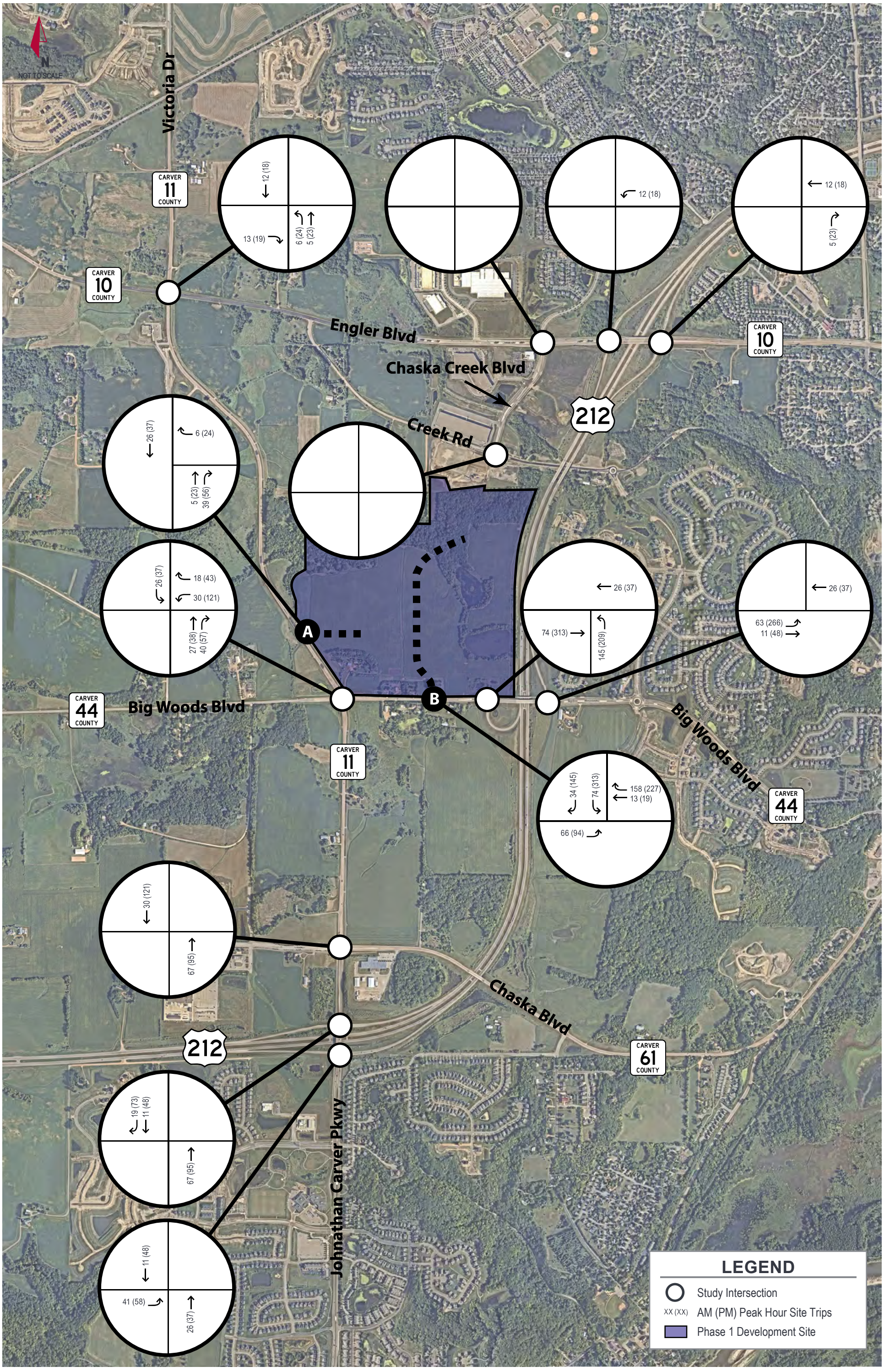


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EXHIBIT 9

TRUCK DISTRIBUTION (PHASE 1)

BIG WOODS BUSINESS PARK — CHASKA, MN

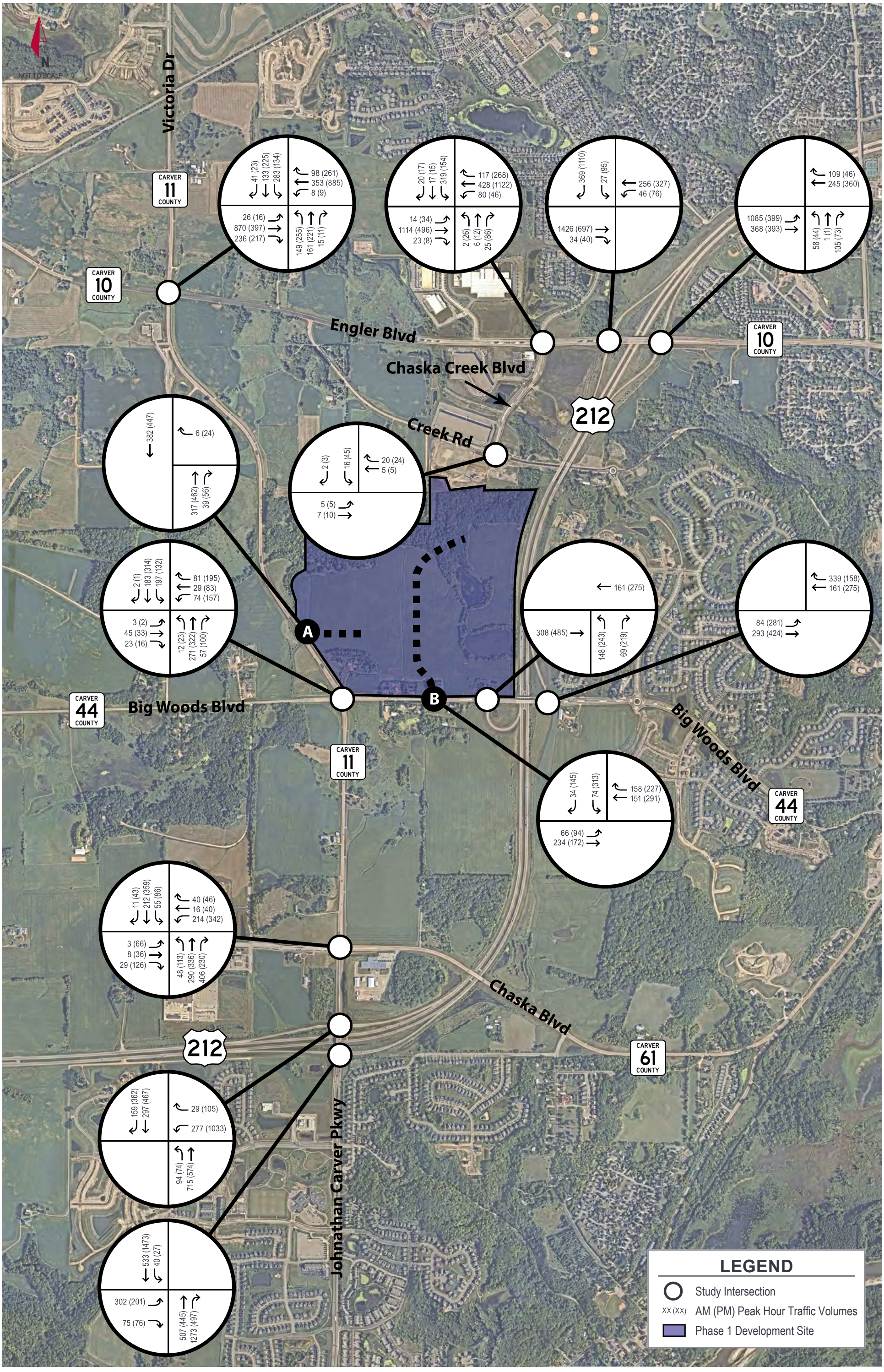


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EXHIBIT 10

SCENARIO 1 PEAK HOUR SITE TRIPS (PHASE 1)

BIG WOODS BUSINESS PARK — CHASKA, MN

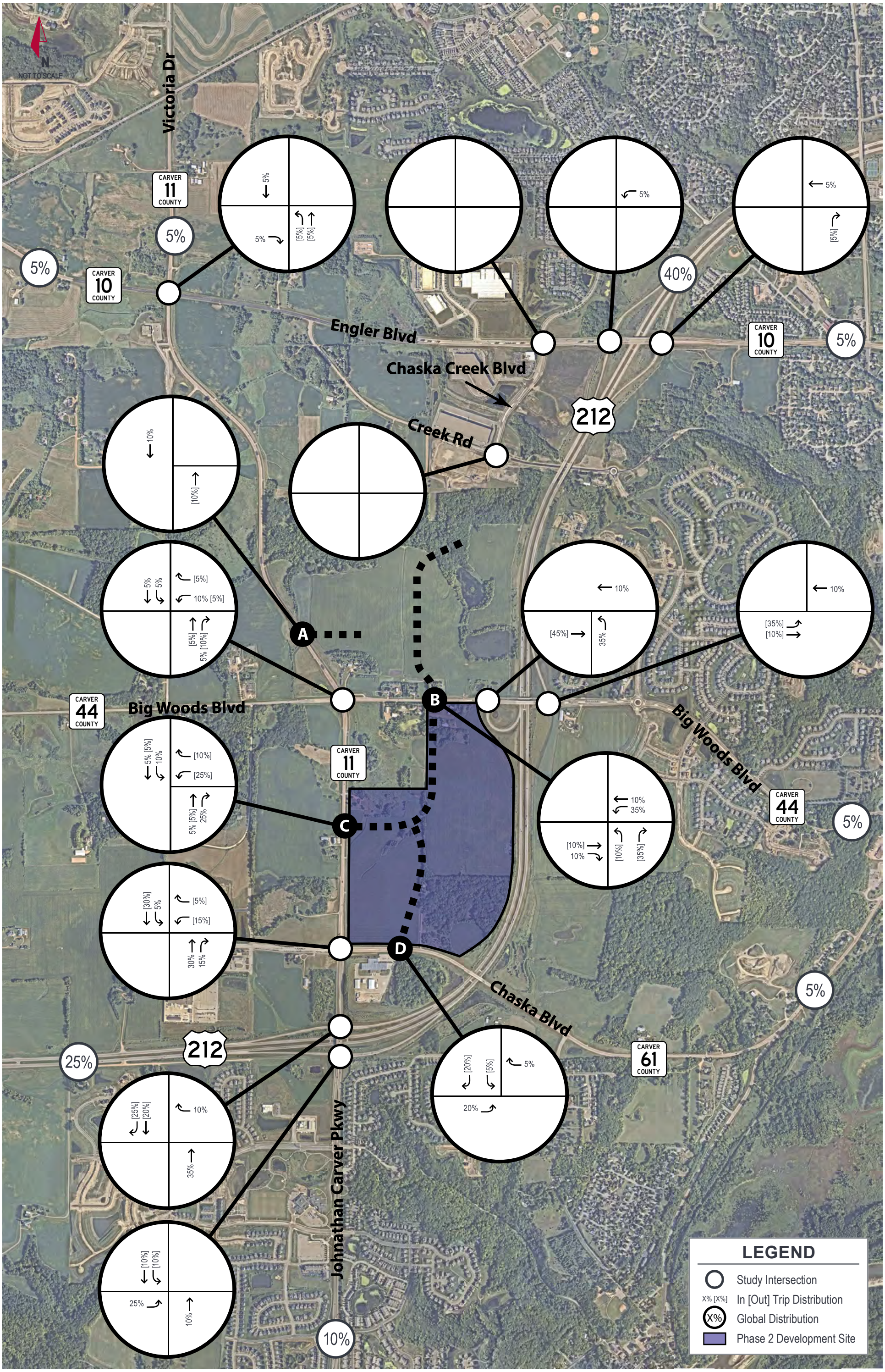


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EXHIBIT 11

OPENING YEAR (2030) SCENARIO 1 TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

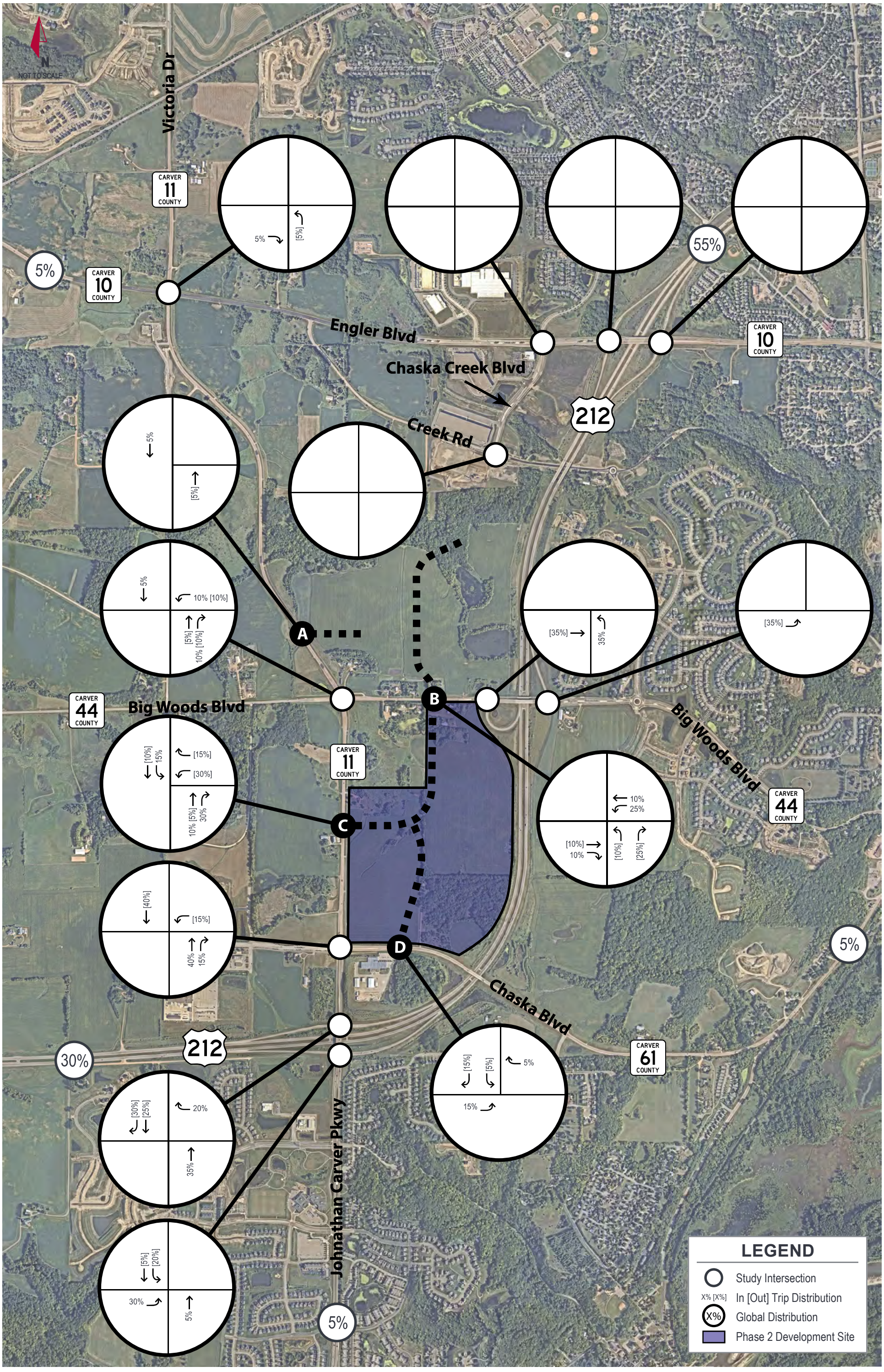


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EXHIBIT 12

PASSENGER VEHICLE DISTRIBUTION (PHASE 2)

BIG WOODS BUSINESS PARK — CHASKA, MN

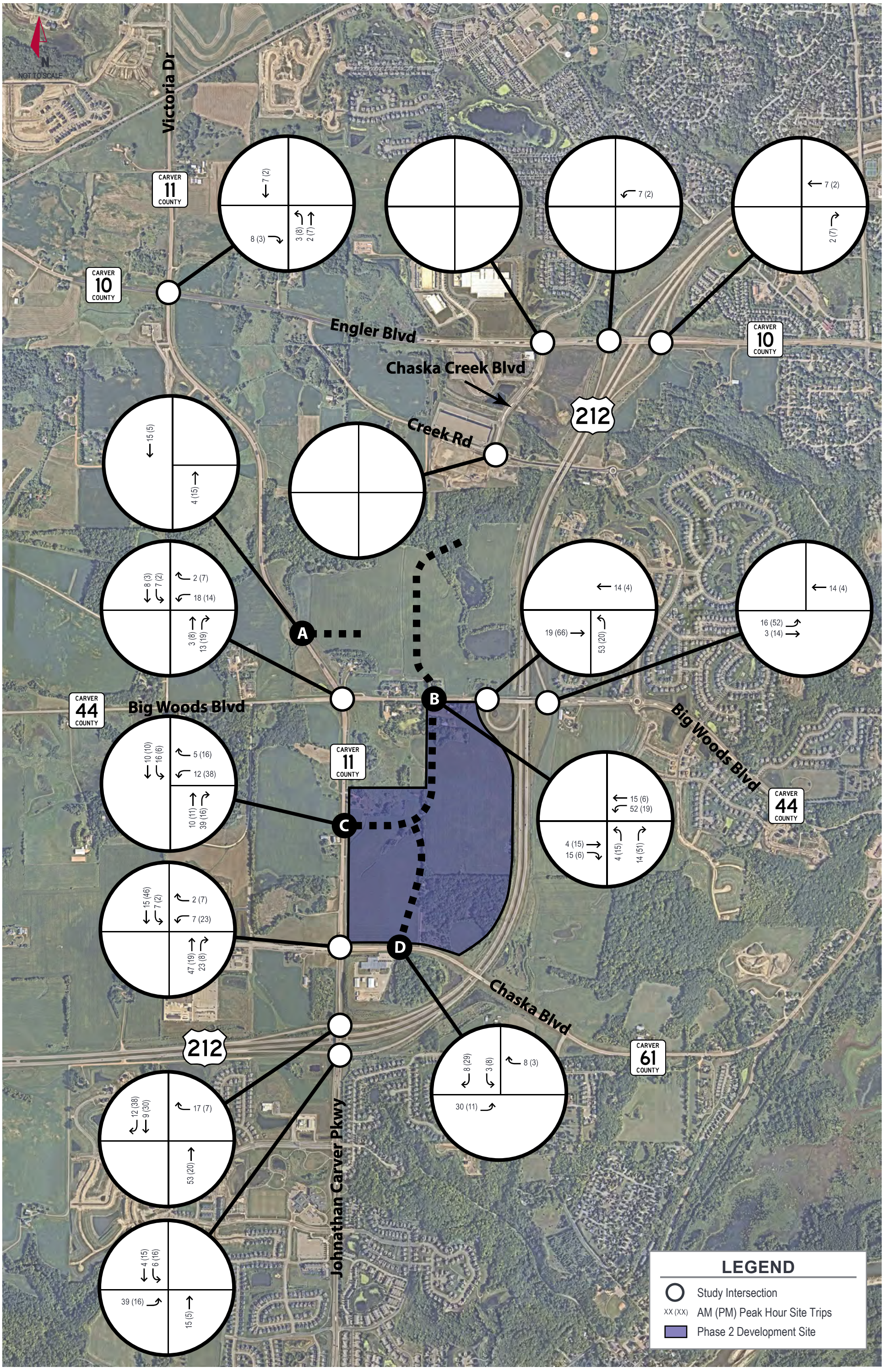


Kimley»Horn

EXHIBIT 13

TRUCK DISTRIBUTION (PHASE 2)

BIG WOODS BUSINESS PARK — CHASKA, MN

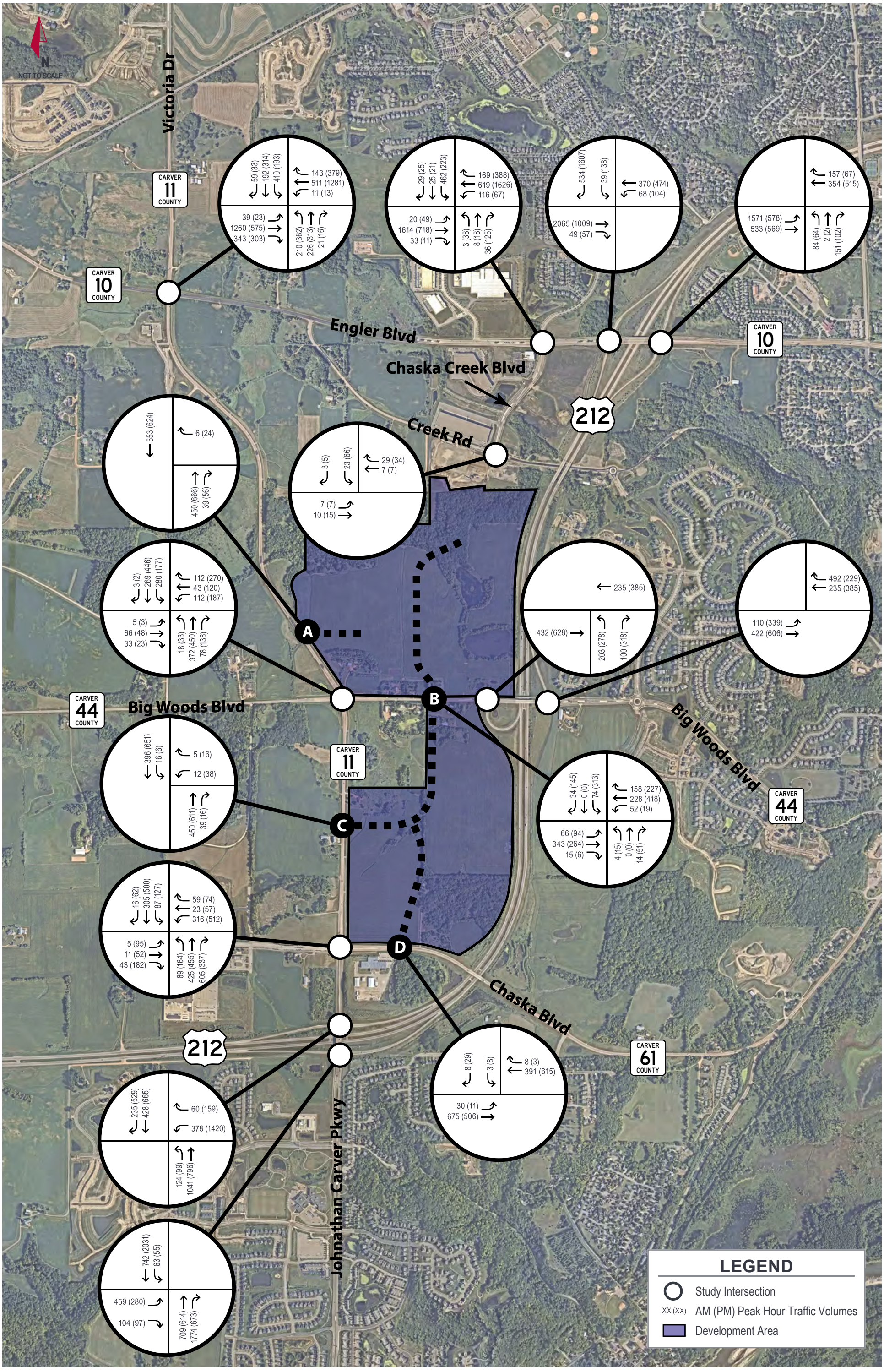


Kimley»Horn

EXHIBIT 14

SCENARIO 1 PASSENGER VEHICLE TRIPS (PHASE 2)

BIG WOODS BUSINESS PARK — CHASKA, MN

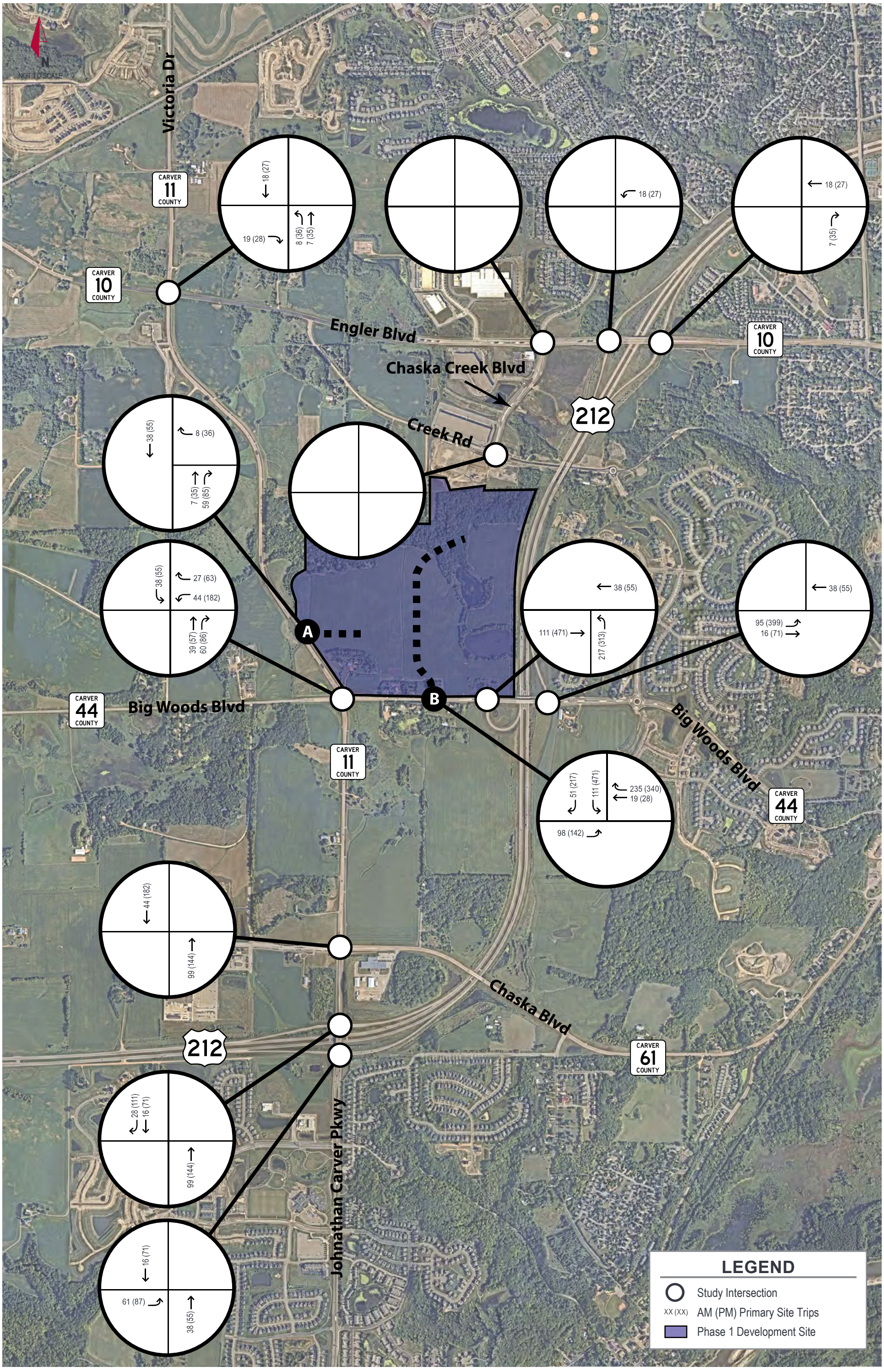


Kimley»Horn

EXHIBIT 15

DESIGN YEAR (2045) SCENARIO 1 TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

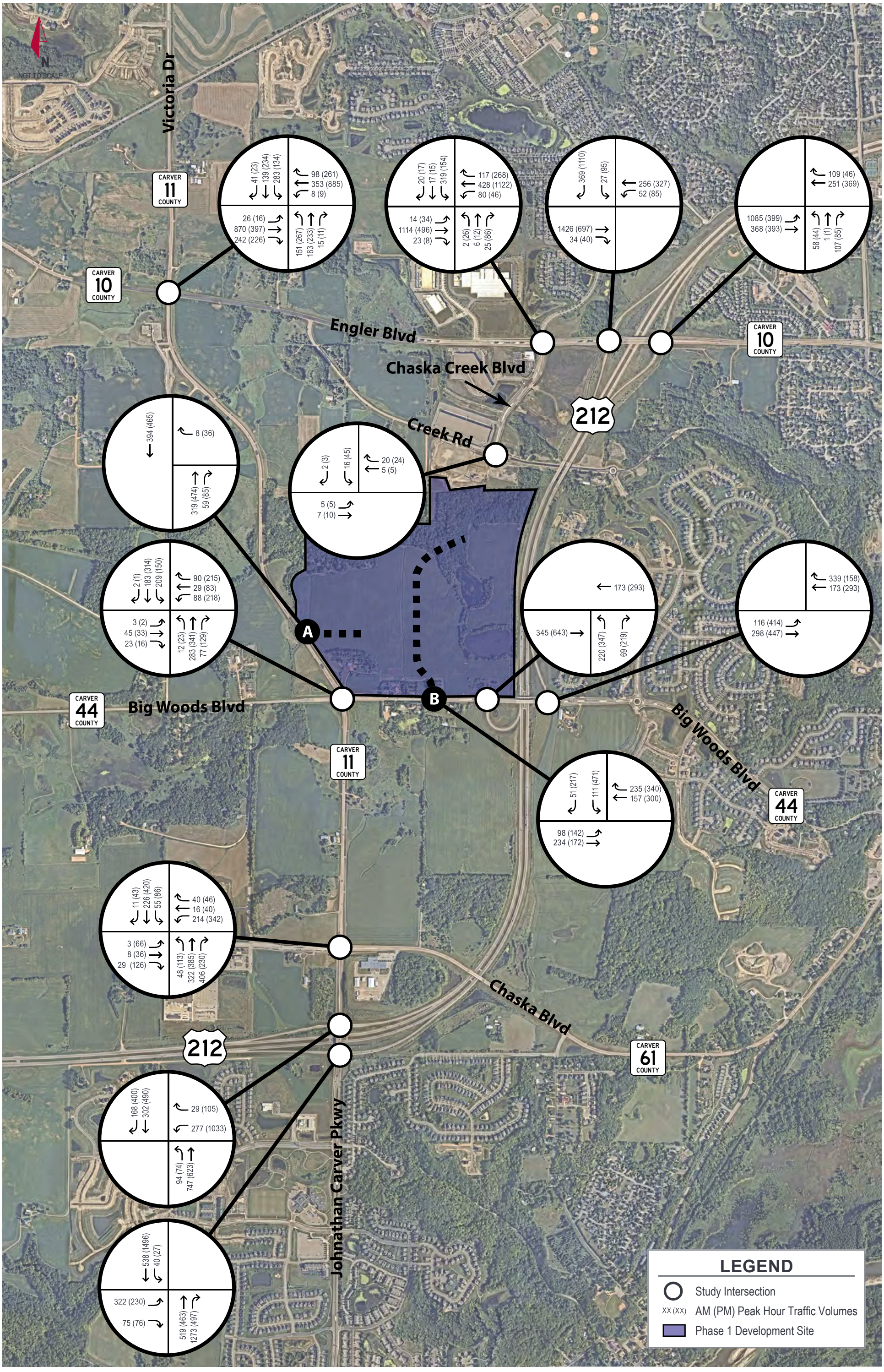


Kimley»Horn

EXHIBIT 16

SCENARIO 2 PEAK HOUR SITE TRIPS (PHASE 1)

BIG WOODS BUSINESS PARK — CHASKA, MN

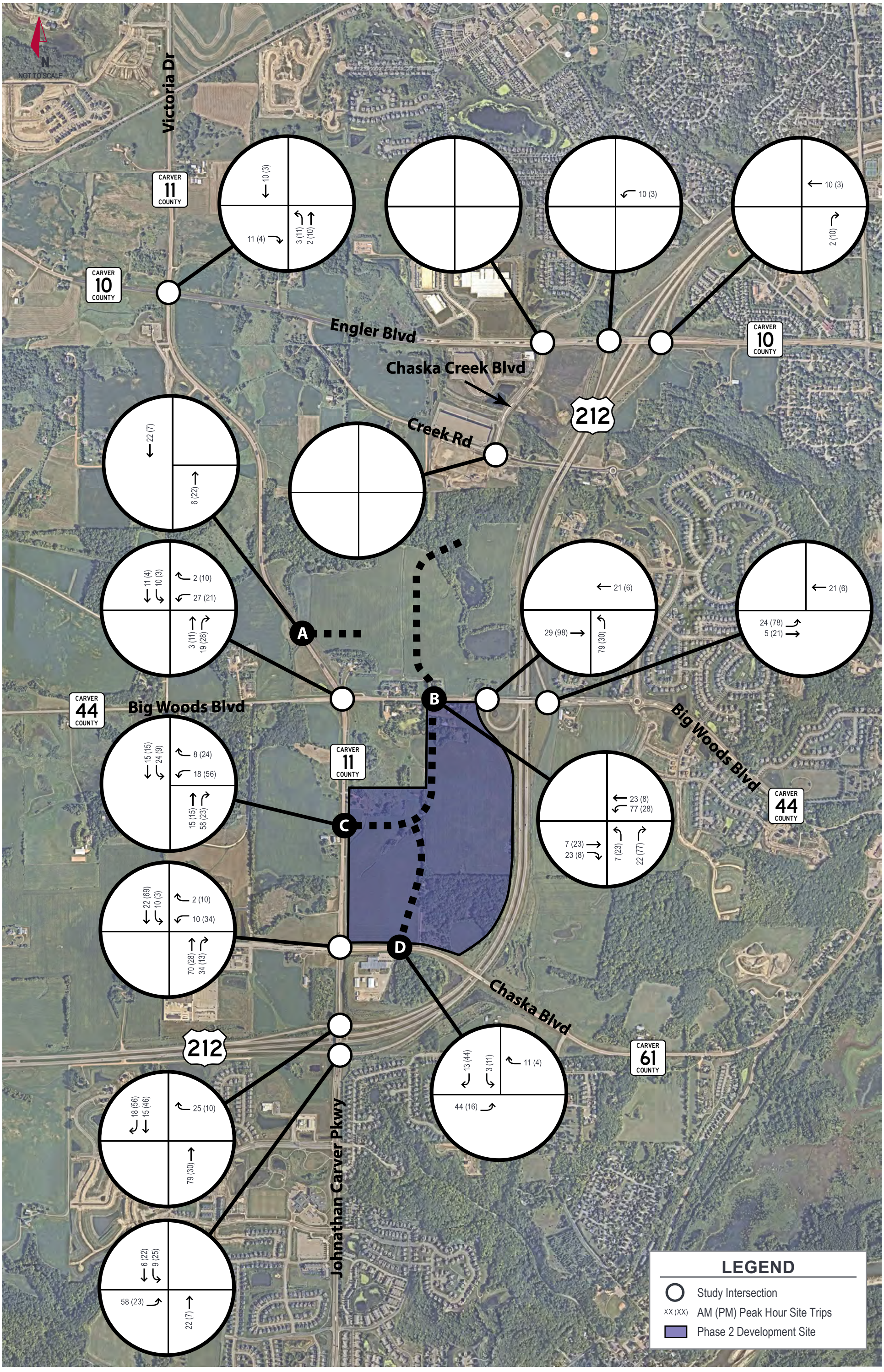


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EXHIBIT 17

OPENING YEAR (2030) SCENARIO 2 TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

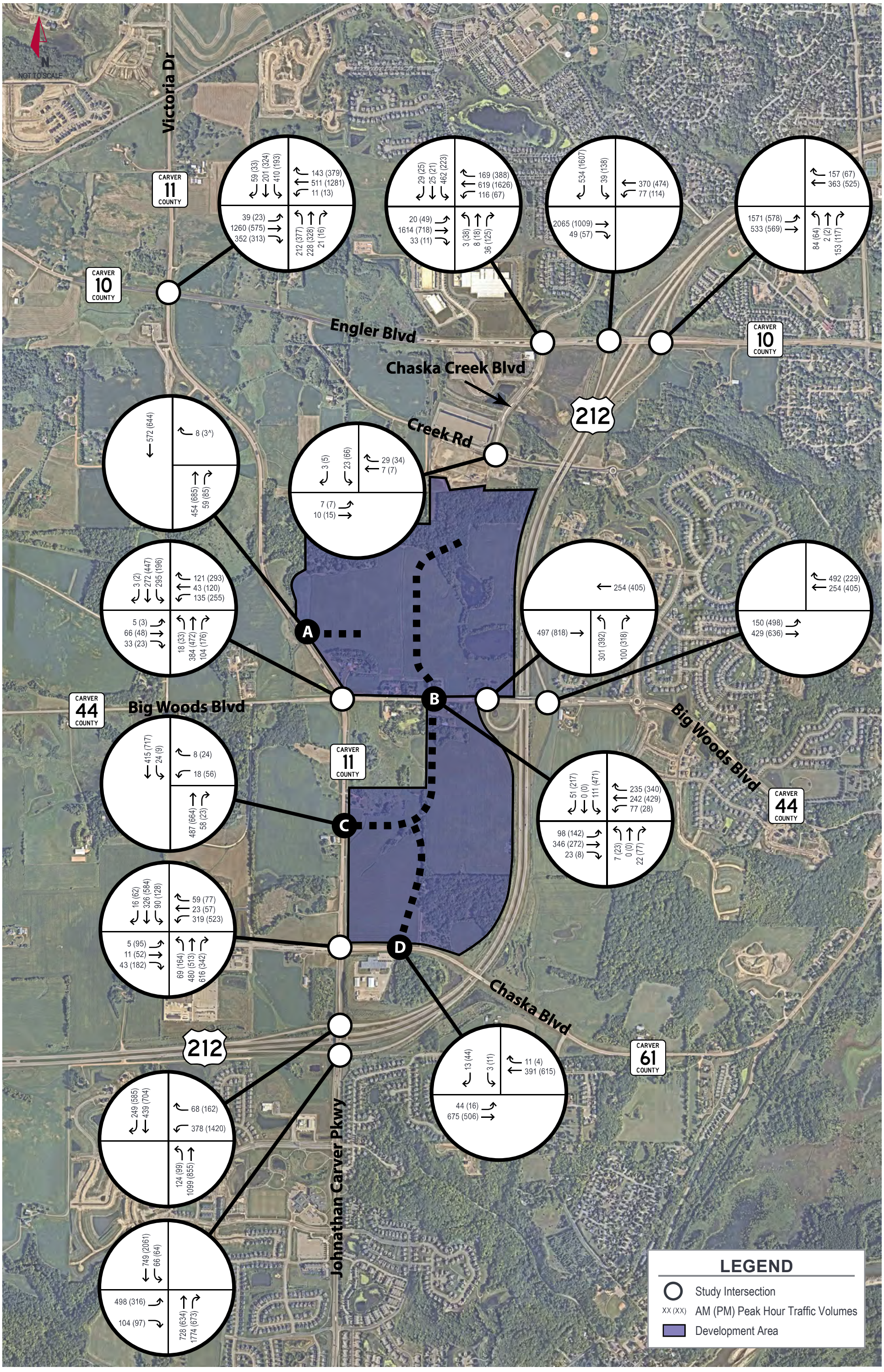


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EXHIBIT 18

SCENARIO 2 PASSENGER VEHICLE TRIPS (PHASE 2)

BIG WOODS BUSINESS PARK — CHASKA, MN

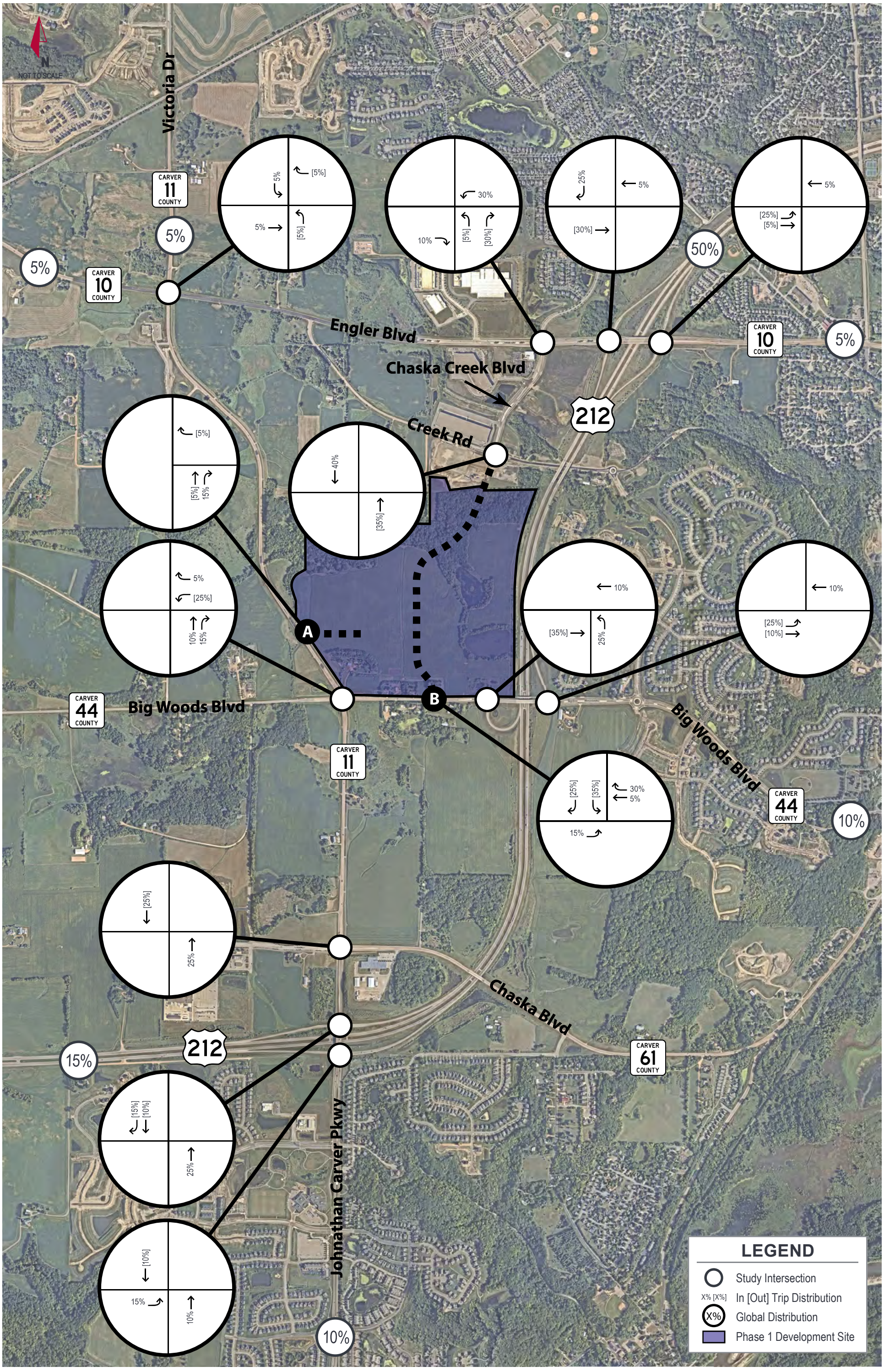


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EXHIBIT 19

DESIGN YEAR (2045) SCENARIO 2 TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

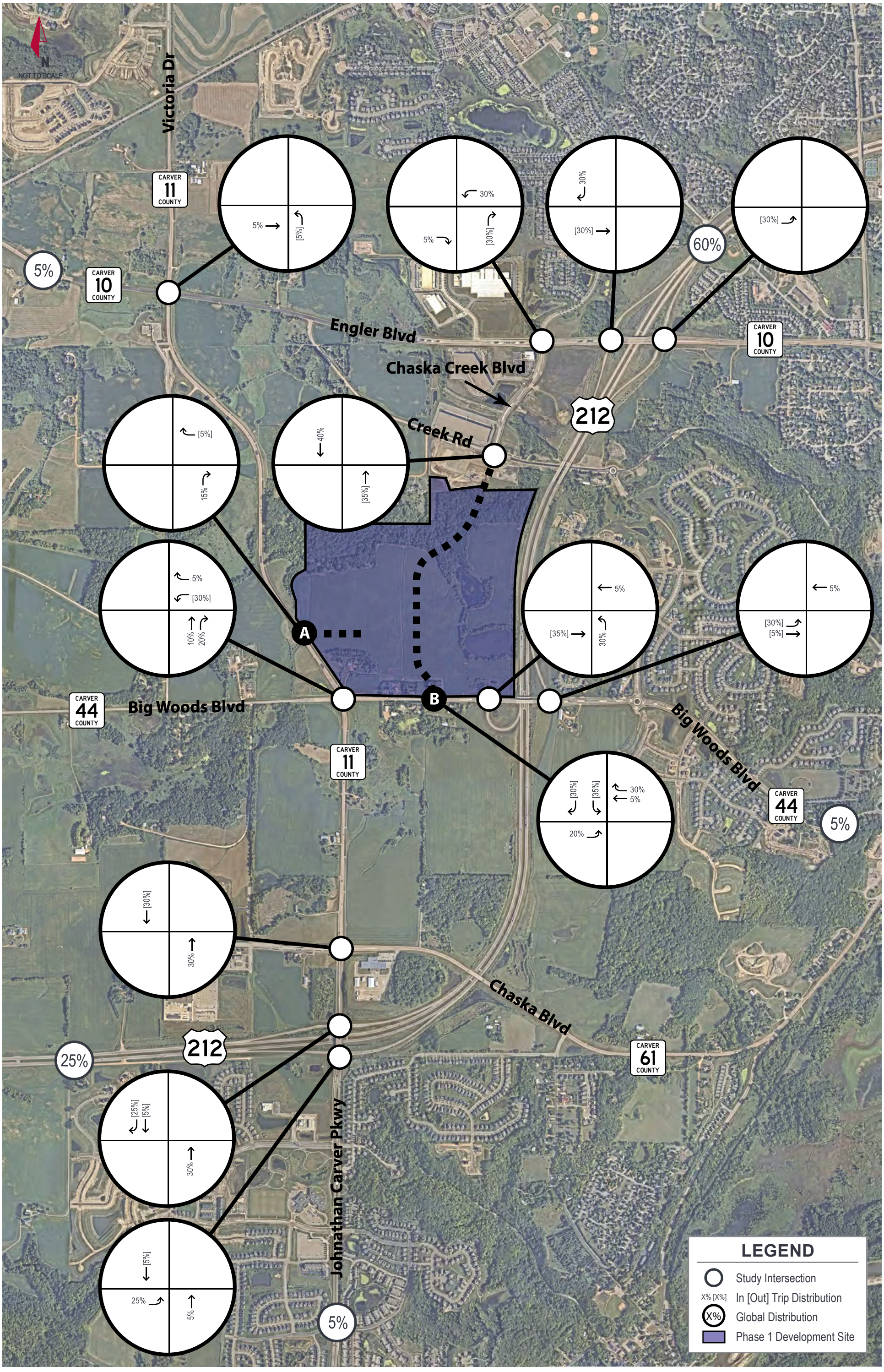


Kimley»Horn

EXHIBIT 20

PASSENGER VEHICLE DISTRIBUTION (PHASE 1 W/ CREEK CROSSING)

BIG WOODS BUSINESS PARK — CHASKA, MN

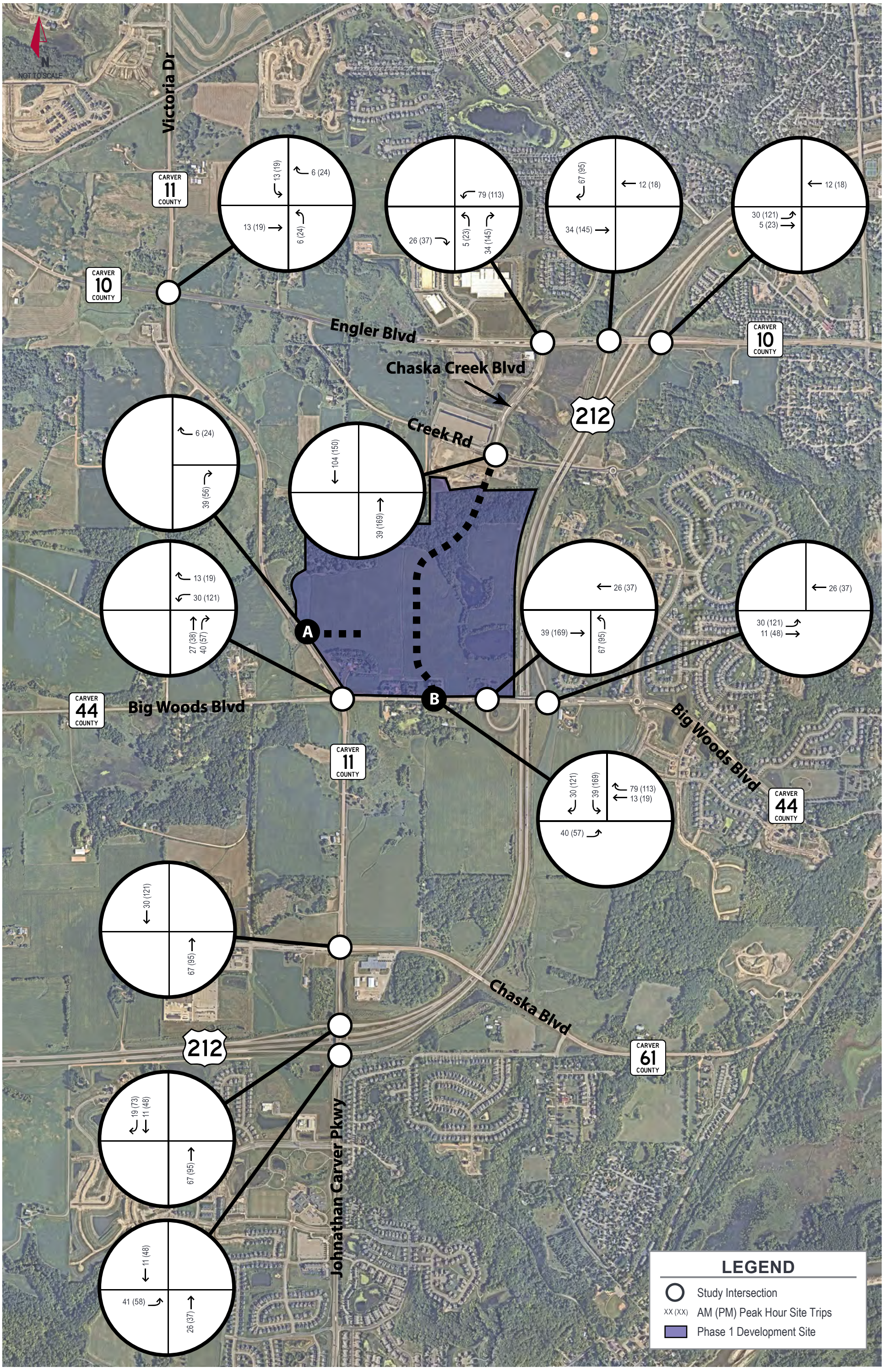


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EXHIBIT 21

HEAVY VEHICLE DISTRIBUTION (PHASE 1 W/ CREEK CROSSING)

BIG WOODS BUSINESS PARK — CHASKA, MN

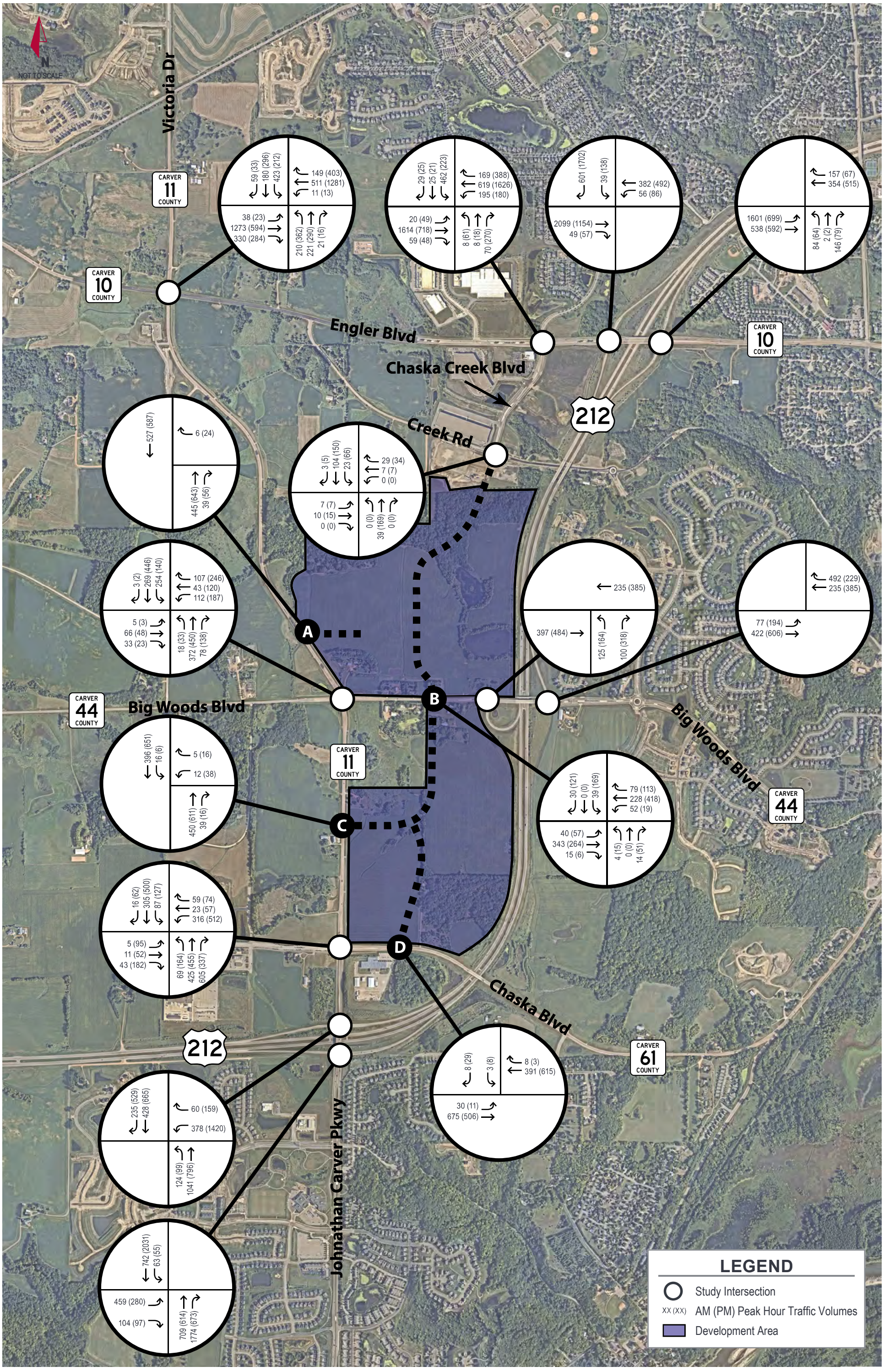


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EXHIBIT 22

SCENARIO 1 TOTAL SITE TRIPS (PHASE 1) WITH CREEK CROSSING

BIG WOODS BUSINESS PARK — CHASKA, MN

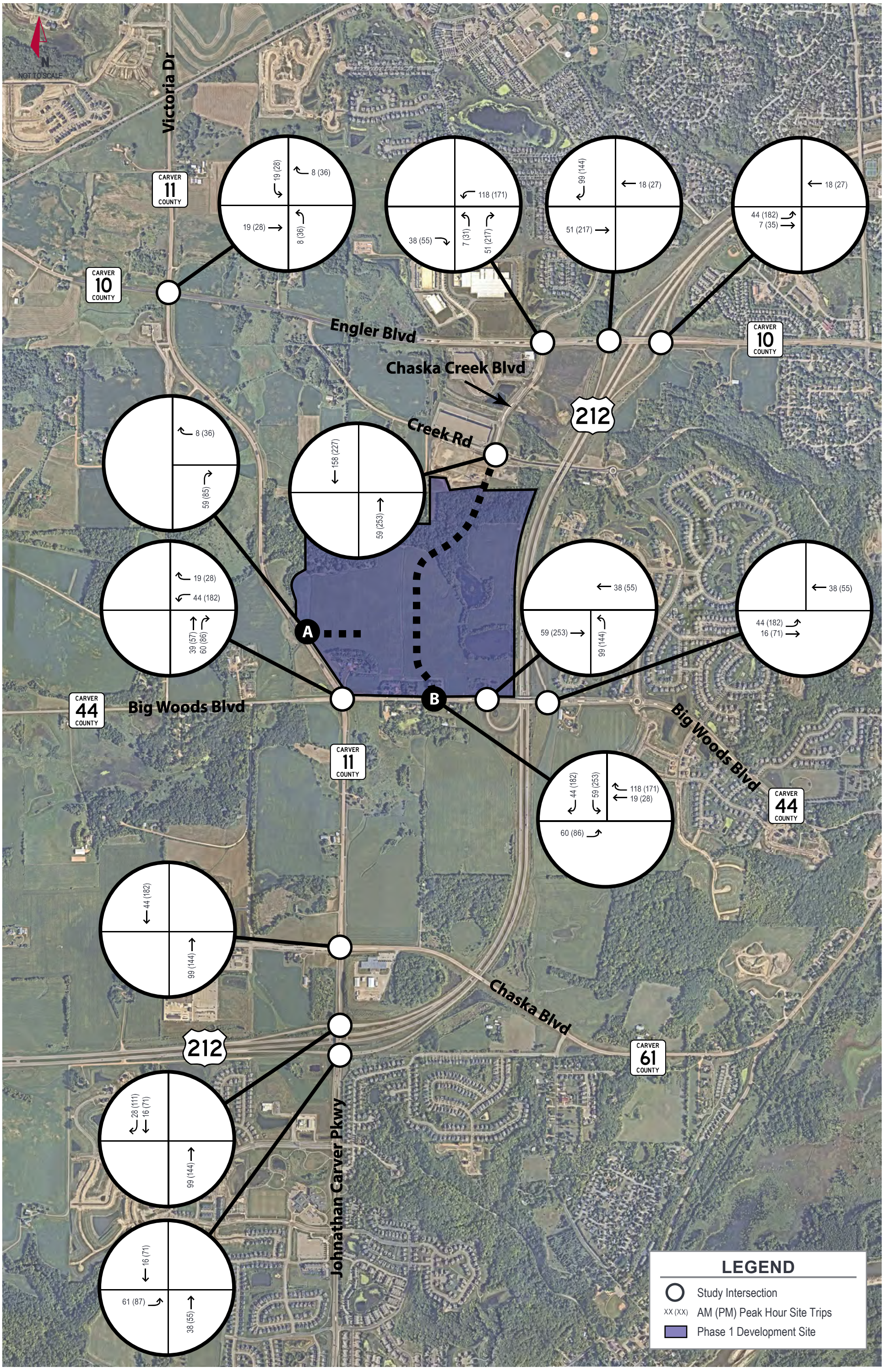


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EXHIBIT 23

DESIGN YEAR (2045) SCENARIO 1 W/ CREEK CROSSING TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

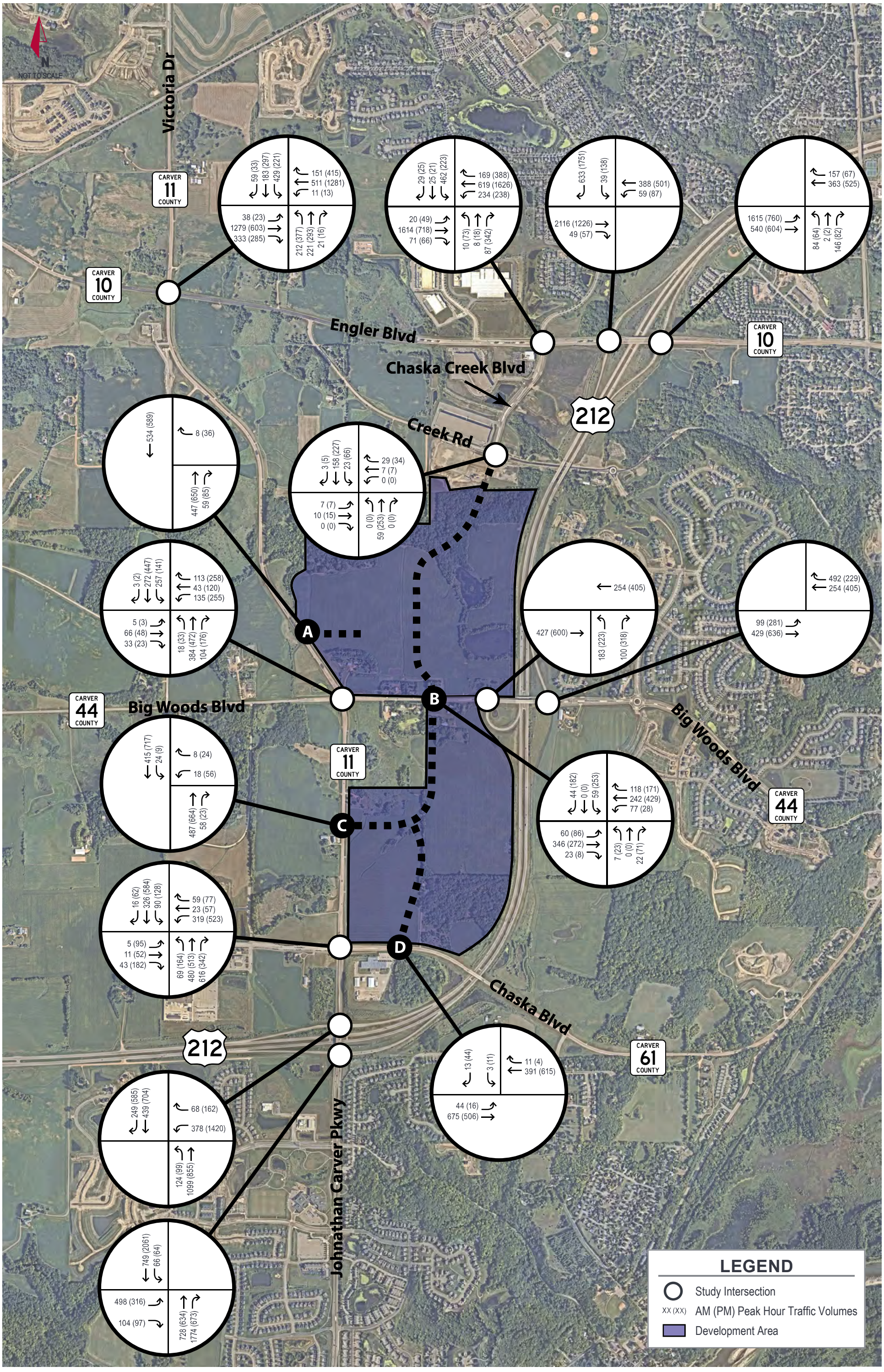


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EXHIBIT 24

SCENARIO 2 TOTAL SITE TRIPS (PHASE 1) WITH CREEK CROSSING

BIG WOODS BUSINESS PARK — CHASKA, MN



Kimley»Horn

EXHIBIT 25

DESIGN YEAR (2045) SCENARIO 2 W/ CREEK CROSSING TRAFFIC VOLUMES

BIG WOODS BUSINESS PARK — CHASKA, MN

Appendix B:

Turning Movement Counts

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

Turning Movement Data

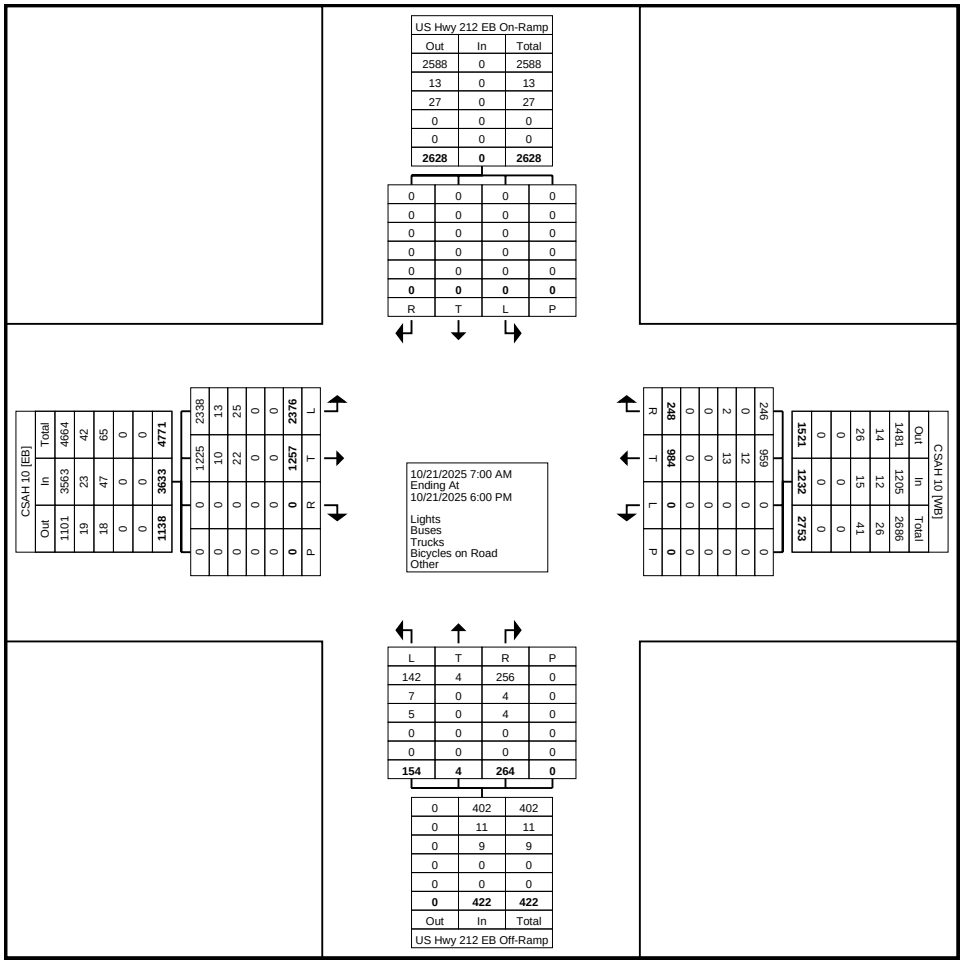
Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 EB Off-Ramp Northbound					US Hwy 212 EB On-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	245	34	0	0	279	0	44	27	0	71	9	0	12	0	21	0	0	0	0	0	371
7:15 AM	279	72	0	0	351	0	50	31	0	81	17	0	18	0	35	0	0	0	0	0	467
7:30 AM	243	88	0	0	331	0	60	19	0	79	17	0	16	0	33	0	0	0	0	0	443
7:45 AM	236	74	0	0	310	0	49	23	0	72	5	1	27	0	33	0	0	0	0	0	415
Hourly Total	1003	268	0	0	1271	0	203	100	0	303	48	1	73	0	122	0	0	0	0	0	1696
8:00 AM	196	88	0	0	284	0	45	23	0	68	12	0	27	0	39	0	0	0	0	0	391
8:15 AM	180	125	0	0	305	0	52	19	0	71	8	0	28	0	36	0	0	0	0	0	412
8:30 AM	173	100	0	0	273	0	69	11	0	80	6	0	29	0	35	0	0	0	0	0	388
8:45 AM	139	47	0	0	186	0	45	19	0	64	8	0	11	0	19	0	0	0	0	0	269
Hourly Total	688	360	0	0	1048	0	211	72	0	283	34	0	95	0	129	0	0	0	0	0	1460
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	83	87	0	0	170	0	69	11	0	80	4	1	9	0	14	0	0	0	0	0	264
4:15 PM	97	85	0	0	182	0	75	10	0	85	12	0	9	0	21	0	0	0	0	0	288
4:30 PM	83	77	0	0	160	0	85	9	0	94	15	0	9	0	24	0	0	0	0	0	278
4:45 PM	80	89	0	0	169	0	73	11	0	84	8	0	17	0	25	0	0	0	0	0	278
Hourly Total	343	338	0	0	681	0	302	41	0	343	39	1	44	0	84	0	0	0	0	0	1108
5:00 PM	94	74	0	0	168	0	62	6	0	68	5	1	16	0	22	0	0	0	0	0	258
5:15 PM	85	66	0	0	151	0	72	11	0	83	10	0	8	0	18	0	0	0	0	0	252
5:30 PM	73	73	0	0	146	0	78	9	0	87	9	1	17	0	27	0	0	0	0	0	260
5:45 PM	90	78	0	0	168	0	56	9	0	65	9	0	11	0	20	0	0	0	0	0	253
Hourly Total	342	291	0	0	633	0	268	35	0	303	33	2	52	0	87	0	0	0	0	0	1023
Grand Total	2376	1257	0	0	3633	0	984	248	0	1232	154	4	264	0	422	0	0	0	0	0	5287
Approach %	65.4	34.6	0.0	-	-	0.0	79.9	20.1	-	-	36.5	0.9	62.6	-	-	0.0	0.0	0.0	-	-	-
Total %	44.9	23.8	0.0	-	68.7	0.0	18.6	4.7	-	23.3	2.9	0.1	5.0	-	8.0	0.0	0.0	0.0	-	0.0	-
Lights	2338	1225	0	-	3563	0	959	246	-	1205	142	4	256	-	402	0	0	0	-	0	5170
% Lights	98.4	97.5	-	-	98.1	-	97.5	99.2	-	97.8	92.2	100.0	97.0	-	95.3	-	-	-	-	-	97.8
Buses	13	10	0	-	23	0	12	0	-	12	7	0	4	-	11	0	0	0	-	0	46
% Buses	0.5	0.8	-	-	0.6	-	1.2	0.0	-	1.0	4.5	0.0	1.5	-	2.6	-	-	-	-	-	0.9
Trucks	25	22	0	-	47	0	13	2	-	15	5	0	4	-	9	0	0	0	-	0	71
% Trucks	1.1	1.8	-	-	1.3	-	1.3	0.8	-	1.2	3.2	0.0	1.5	-	2.1	-	-	-	-	-	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025



Turning Movement Data Plot

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

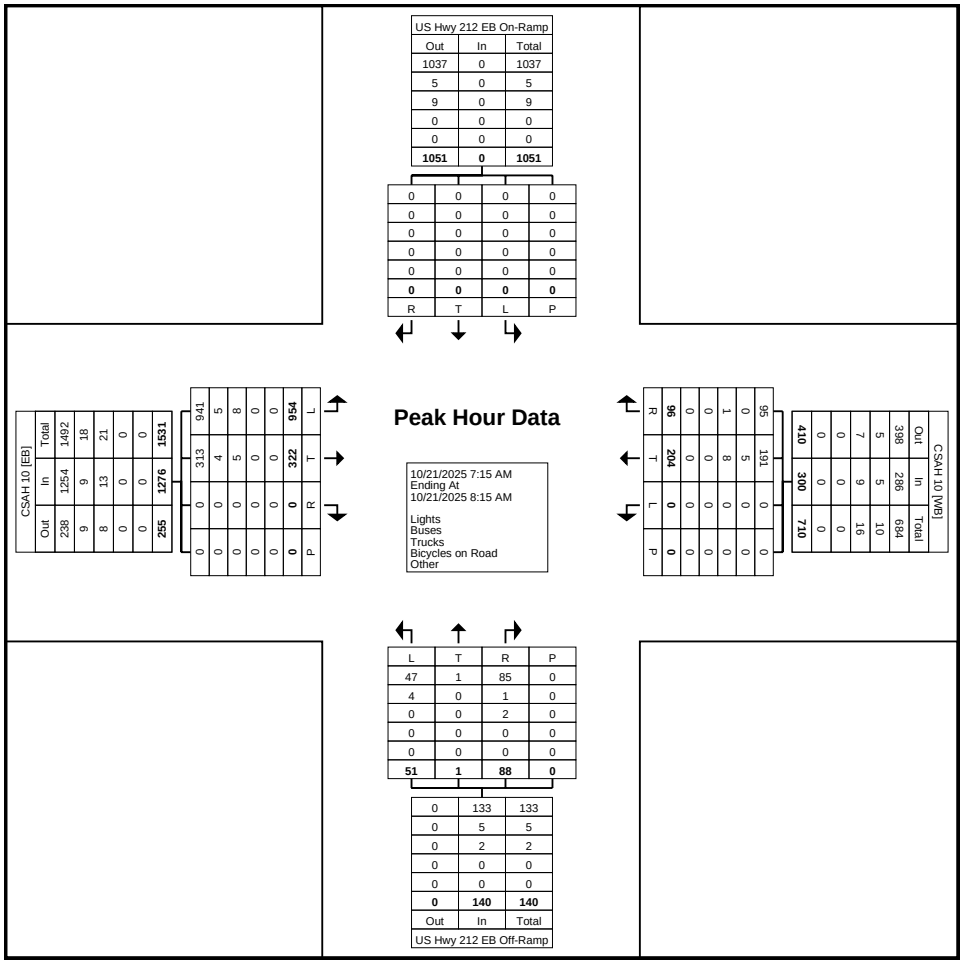
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 EB Off-Ramp Northbound					US Hwy 212 EB On-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	279	72	0	0	351	0	50	31	0	81	17	0	18	0	35	0	0	0	0	0	467
7:30 AM	243	88	0	0	331	0	60	19	0	79	17	0	16	0	33	0	0	0	0	0	443
7:45 AM	236	74	0	0	310	0	49	23	0	72	5	1	27	0	33	0	0	0	0	0	415
8:00 AM	196	88	0	0	284	0	45	23	0	68	12	0	27	0	39	0	0	0	0	0	391
Total	954	322	0	0	1276	0	204	96	0	300	51	1	88	0	140	0	0	0	0	0	1716
Approach %	74.8	25.2	0.0	-	-	0.0	68.0	32.0	-	-	36.4	0.7	62.9	-	-	0.0	0.0	0.0	-	-	-
Total %	55.6	18.8	0.0	-	74.4	0.0	11.9	5.6	-	17.5	3.0	0.1	5.1	-	8.2	0.0	0.0	0.0	-	0.0	-
PHF	0.855	0.915	0.000	-	0.909	0.000	0.850	0.774	-	0.926	0.750	0.250	0.815	-	0.897	0.000	0.000	0.000	-	0.000	0.919
Lights	941	313	0	-	1254	0	191	95	-	286	47	1	85	-	133	0	0	0	-	0	1673
% Lights	98.6	97.2	-	-	98.3	-	93.6	99.0	-	95.3	92.2	100.0	96.6	-	95.0	-	-	-	-	-	97.5
Buses	5	4	0	-	9	0	5	0	-	5	4	0	1	-	5	0	0	0	-	0	19
% Buses	0.5	1.2	-	-	0.7	-	2.5	0.0	-	1.7	7.8	0.0	1.1	-	3.6	-	-	-	-	-	1.1
Trucks	8	5	0	-	13	0	8	1	-	9	0	0	2	-	2	0	0	0	-	0	24
% Trucks	0.8	1.6	-	-	1.0	-	3.9	1.0	-	3.0	0.0	0.0	2.3	-	1.4	-	-	-	-	-	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
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Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

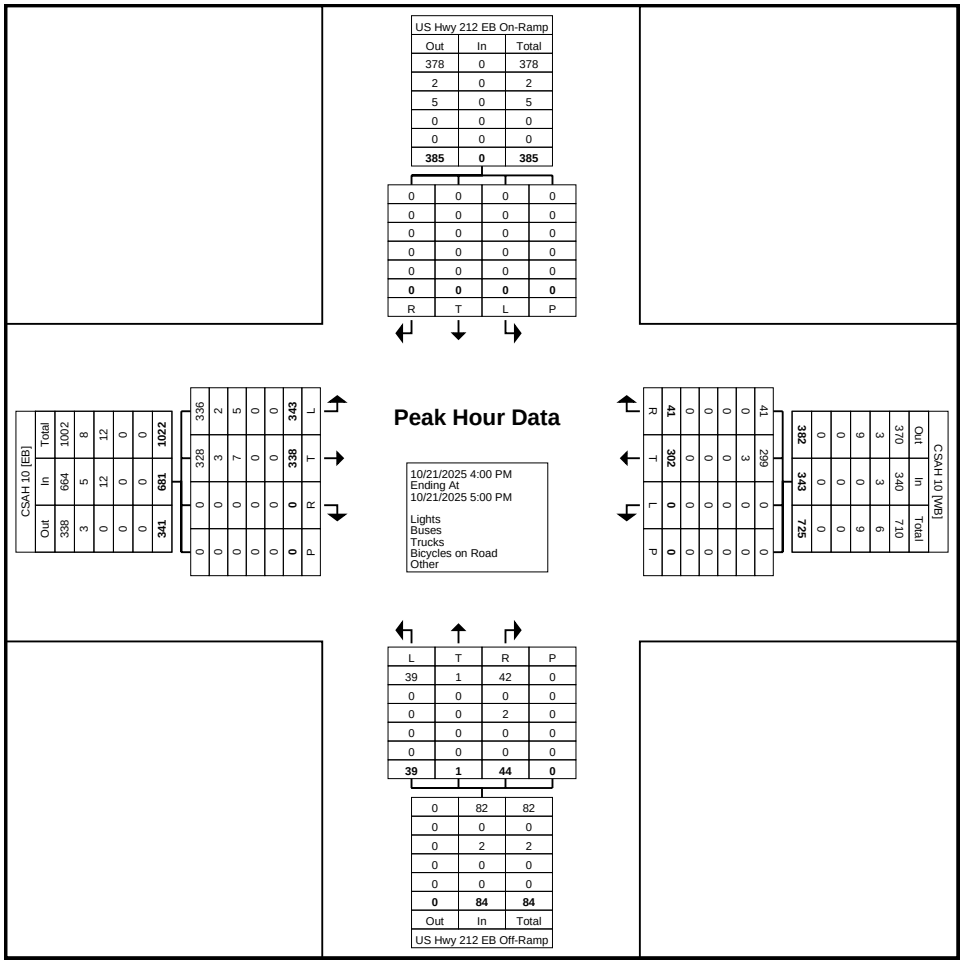
Turning Movement Peak Hour Data (4:00 PM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 EB Off-Ramp Northbound					US Hwy 212 EB On-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	83	87	0	0	170	0	69	11	0	80	4	1	9	0	14	0	0	0	0	0	264
4:15 PM	97	85	0	0	182	0	75	10	0	85	12	0	9	0	21	0	0	0	0	0	288
4:30 PM	83	77	0	0	160	0	85	9	0	94	15	0	9	0	24	0	0	0	0	0	278
4:45 PM	80	89	0	0	169	0	73	11	0	84	8	0	17	0	25	0	0	0	0	0	278
Total	343	338	0	0	681	0	302	41	0	343	39	1	44	0	84	0	0	0	0	0	1108
Approach %	50.4	49.6	0.0	-	-	0.0	88.0	12.0	-	-	46.4	1.2	52.4	-	-	0.0	0.0	0.0	-	-	-
Total %	31.0	30.5	0.0	-	61.5	0.0	27.3	3.7	-	31.0	3.5	0.1	4.0	-	7.6	0.0	0.0	0.0	-	0.0	-
PHF	0.884	0.949	0.000	-	0.935	0.000	0.888	0.932	-	0.912	0.650	0.250	0.647	-	0.840	0.000	0.000	0.000	-	0.000	0.962
Lights	336	328	0	-	664	0	299	41	-	340	39	1	42	-	82	0	0	0	-	0	1086
% Lights	98.0	97.0	-	-	97.5	-	99.0	100.0	-	99.1	100.0	100.0	95.5	-	97.6	-	-	-	-	-	98.0
Buses	2	3	0	-	5	0	3	0	-	3	0	0	0	-	0	0	0	0	-	0	8
% Buses	0.6	0.9	-	-	0.7	-	1.0	0.0	-	0.9	0.0	0.0	0.0	-	0.0	-	-	-	-	-	0.7
Trucks	5	7	0	-	12	0	0	0	-	0	0	0	2	-	2	0	0	0	-	0	14
% Trucks	1.5	2.1	-	-	1.8	-	0.0	0.0	-	0.0	0.0	0.0	4.5	-	2.4	-	-	-	-	-	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (4:00 PM)

Kimley-Horn
4201 Winfield Road Suite 600

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Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

Turning Movement Data

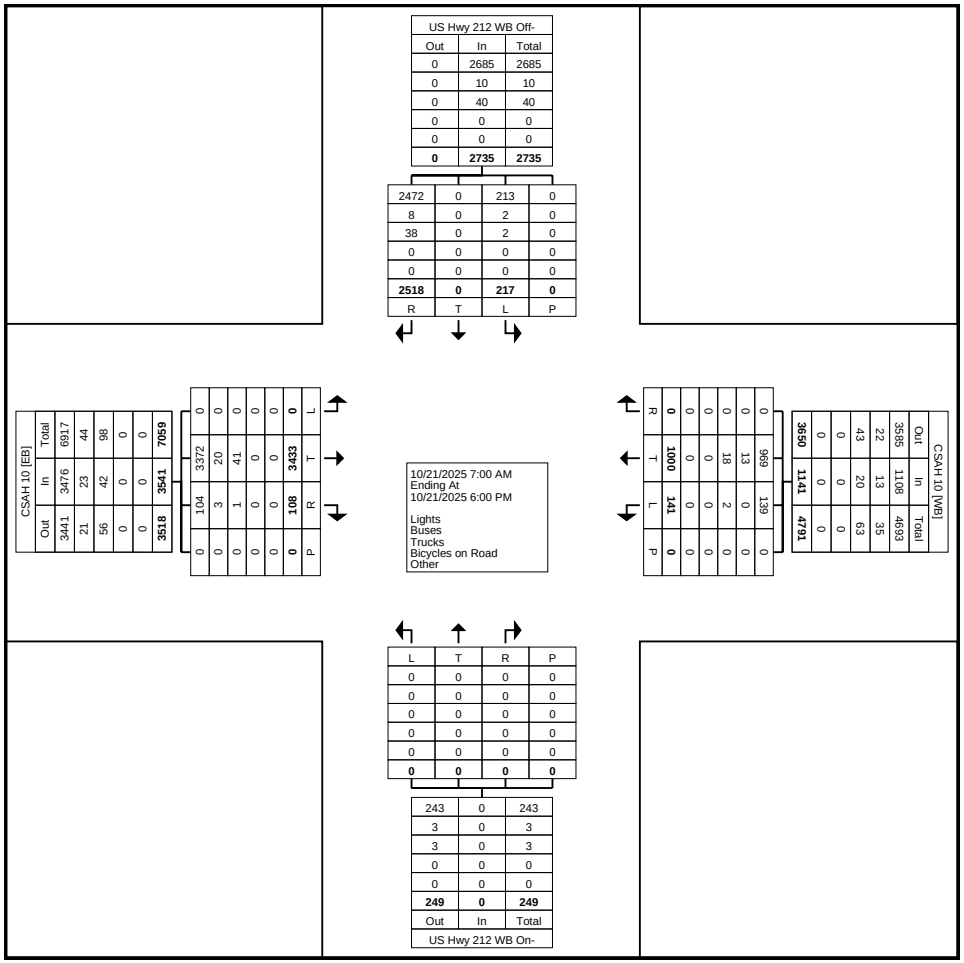
Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 WB On-Ramp Northbound					US Hwy 212 WB Off-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	285	4	0	289	7	45	0	0	52	0	0	0	0	0	3	0	62	0	65	406
7:15 AM	0	344	6	0	350	4	62	0	0	66	0	0	0	0	0	5	0	62	0	67	483
7:30 AM	0	325	14	0	339	9	71	0	0	80	0	0	0	0	0	5	0	92	0	97	516
7:45 AM	0	305	7	0	312	7	46	0	0	53	0	0	0	0	0	8	0	96	0	104	469
Hourly Total	0	1259	31	0	1290	27	224	0	0	251	0	0	0	0	0	21	0	312	0	333	1874
8:00 AM	0	286	3	0	289	10	47	0	0	57	0	0	0	0	0	6	0	76	0	82	428
8:15 AM	0	276	6	0	282	6	57	0	0	63	0	0	0	0	0	24	0	81	0	105	450
8:30 AM	0	244	5	0	249	4	69	0	0	73	0	0	0	0	0	25	0	69	0	94	416
8:45 AM	0	187	6	0	193	5	47	0	0	52	0	0	0	0	0	2	0	74	0	76	321
Hourly Total	0	993	20	0	1013	25	220	0	0	245	0	0	0	0	0	57	0	300	0	357	1615
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	147	10	0	157	16	59	0	0	75	0	0	0	0	0	23	0	231	0	254	486
4:15 PM	0	144	6	0	150	13	72	0	0	85	0	0	0	0	0	25	0	238	0	263	498
4:30 PM	0	158	11	0	169	12	80	0	0	92	0	0	0	0	0	16	0	260	0	276	537
4:45 PM	0	147	8	0	155	10	74	0	0	84	0	0	0	0	0	20	0	252	0	272	511
Hourly Total	0	596	35	0	631	51	285	0	0	336	0	0	0	0	0	84	0	981	0	1065	2032
5:00 PM	0	150	7	0	157	5	69	0	0	74	0	0	0	0	0	17	0	260	0	277	508
5:15 PM	0	148	7	0	155	14	69	0	0	83	0	0	0	0	0	8	0	247	0	255	493
5:30 PM	0	125	5	0	130	9	79	0	0	88	0	0	0	0	0	14	0	206	0	220	438
5:45 PM	0	162	3	0	165	10	54	0	0	64	0	0	0	0	0	16	0	212	0	228	457
Hourly Total	0	585	22	0	607	38	271	0	0	309	0	0	0	0	0	55	0	925	0	980	1896
Grand Total	0	3433	108	0	3541	141	1000	0	0	1141	0	0	0	0	0	217	0	2518	0	2735	7417
Approach %	0.0	97.0	3.0	-	-	12.4	87.6	0.0	-	-	0.0	0.0	0.0	-	-	7.9	0.0	92.1	-	-	-
Total %	0.0	46.3	1.5	-	47.7	1.9	13.5	0.0	-	15.4	0.0	0.0	0.0	-	0.0	2.9	0.0	33.9	-	36.9	-
Lights	0	3372	104	-	3476	139	969	0	-	1108	0	0	0	-	0	213	0	2472	-	2685	7269
% Lights	-	98.2	96.3	-	98.2	98.6	96.9	-	-	97.1	-	-	-	-	-	98.2	-	98.2	-	98.2	98.0
Buses	0	20	3	-	23	0	13	0	-	13	0	0	0	-	0	2	0	8	-	10	46
% Buses	-	0.6	2.8	-	0.6	0.0	1.3	-	-	1.1	-	-	-	-	-	0.9	-	0.3	-	0.4	0.6
Trucks	0	41	1	-	42	2	18	0	-	20	0	0	0	-	0	2	0	38	-	40	102
% Trucks	-	1.2	0.9	-	1.2	1.4	1.8	-	-	1.8	-	-	-	-	-	0.9	-	1.5	-	1.5	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 10 (Engler Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 3



Turning Movement Data Plot

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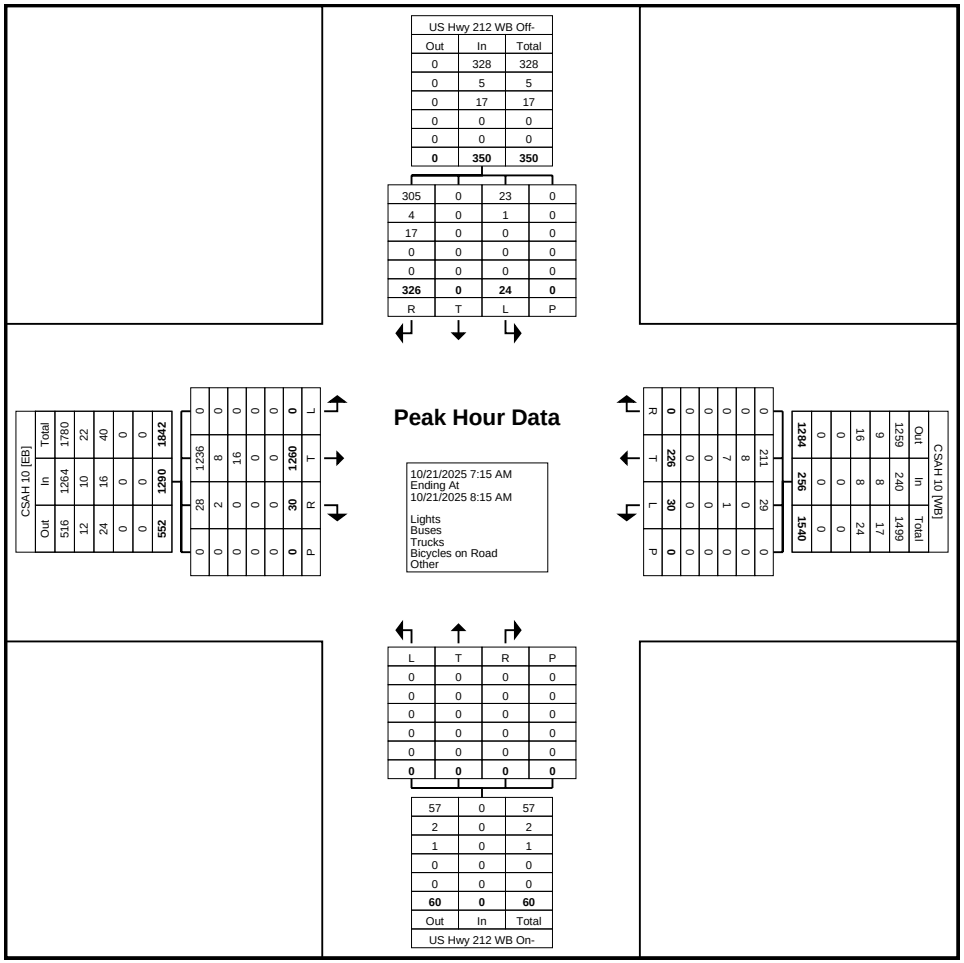
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 WB On-Ramp Northbound					US Hwy 212 WB Off-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	344	6	0	350	4	62	0	0	66	0	0	0	0	0	5	0	62	0	67	483
7:30 AM	0	325	14	0	339	9	71	0	0	80	0	0	0	0	0	5	0	92	0	97	516
7:45 AM	0	305	7	0	312	7	46	0	0	53	0	0	0	0	0	8	0	96	0	104	469
8:00 AM	0	286	3	0	289	10	47	0	0	57	0	0	0	0	0	6	0	76	0	82	428
Total	0	1260	30	0	1290	30	226	0	0	256	0	0	0	0	0	24	0	326	0	350	1896
Approach %	0.0	97.7	2.3	-	-	11.7	88.3	0.0	-	-	0.0	0.0	0.0	-	-	6.9	0.0	93.1	-	-	-
Total %	0.0	66.5	1.6	-	68.0	1.6	11.9	0.0	-	13.5	0.0	0.0	0.0	-	0.0	1.3	0.0	17.2	-	18.5	-
PHF	0.000	0.916	0.536	-	0.921	0.750	0.796	0.000	-	0.800	0.000	0.000	0.000	-	0.000	0.750	0.000	0.849	-	0.841	0.919
Lights	0	1236	28	-	1264	29	211	0	-	240	0	0	0	-	0	23	0	305	-	328	1832
% Lights	-	98.1	93.3	-	98.0	96.7	93.4	-	-	93.8	-	-	-	-	-	95.8	-	93.6	-	93.7	96.6
Buses	0	8	2	-	10	0	8	0	-	8	0	0	0	-	0	1	0	4	-	5	23
% Buses	-	0.6	6.7	-	0.8	0.0	3.5	-	-	3.1	-	-	-	-	-	4.2	-	1.2	-	1.4	1.2
Trucks	0	16	0	-	16	1	7	0	-	8	0	0	0	-	0	0	0	17	-	17	41
% Trucks	-	1.3	0.0	-	1.2	3.3	3.1	-	-	3.1	-	-	-	-	-	0.0	-	5.2	-	4.9	2.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
Start Date: 10/21/2025
Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

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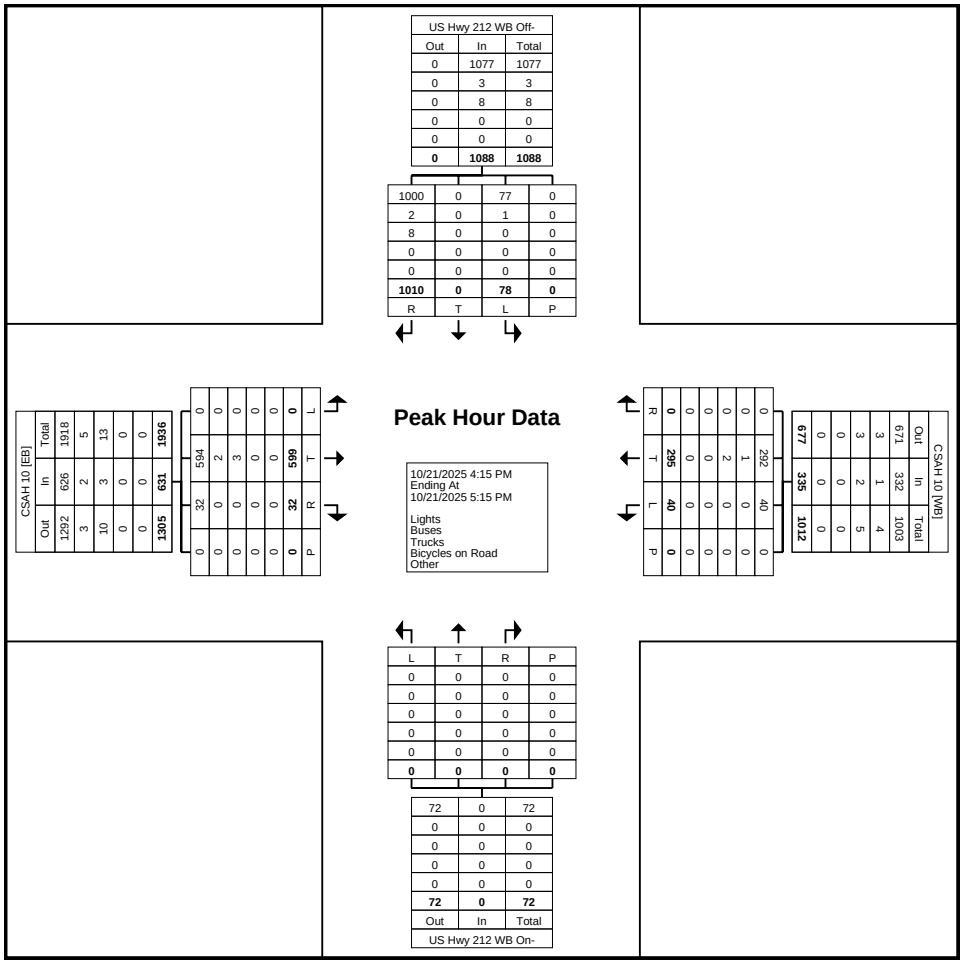
Turning Movement Peak Hour Data (4:15 PM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					US Hwy 212 WB On-Ramp Northbound					US Hwy 212 WB Off-Ramp Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	0	144	6	0	150	13	72	0	0	85	0	0	0	0	0	25	0	238	0	263	498
4:30 PM	0	158	11	0	169	12	80	0	0	92	0	0	0	0	0	16	0	260	0	276	537
4:45 PM	0	147	8	0	155	10	74	0	0	84	0	0	0	0	0	20	0	252	0	272	511
5:00 PM	0	150	7	0	157	5	69	0	0	74	0	0	0	0	0	17	0	260	0	277	508
Total	0	599	32	0	631	40	295	0	0	335	0	0	0	0	0	78	0	1010	0	1088	2054
Approach %	0.0	94.9	5.1	-	-	11.9	88.1	0.0	-	-	0.0	0.0	0.0	-	-	7.2	0.0	92.8	-	-	-
Total %	0.0	29.2	1.6	-	30.7	1.9	14.4	0.0	-	16.3	0.0	0.0	0.0	-	0.0	3.8	0.0	49.2	-	53.0	-
PHF	0.000	0.948	0.727	-	0.933	0.769	0.922	0.000	-	0.910	0.000	0.000	0.000	-	0.000	0.780	0.000	0.971	-	0.982	0.956
Lights	0	594	32	-	626	40	292	0	-	332	0	0	0	-	0	77	0	1000	-	1077	2035
% Lights	-	99.2	100.0	-	99.2	100.0	99.0	-	-	99.1	-	-	-	-	-	98.7	-	99.0	-	99.0	99.1
Buses	0	2	0	-	2	0	1	0	-	1	0	0	0	-	0	1	0	2	-	3	6
% Buses	-	0.3	0.0	-	0.3	0.0	0.3	-	-	0.3	-	-	-	-	-	1.3	-	0.2	-	0.3	0.3
Trucks	0	3	0	-	3	0	2	0	-	2	0	0	0	-	0	0	0	8	-	8	13
% Trucks	-	0.5	0.0	-	0.5	0.0	0.7	-	-	0.6	-	-	-	-	-	0.0	-	0.8	-	0.7	0.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (4:15 PM)

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Turning Movement Data

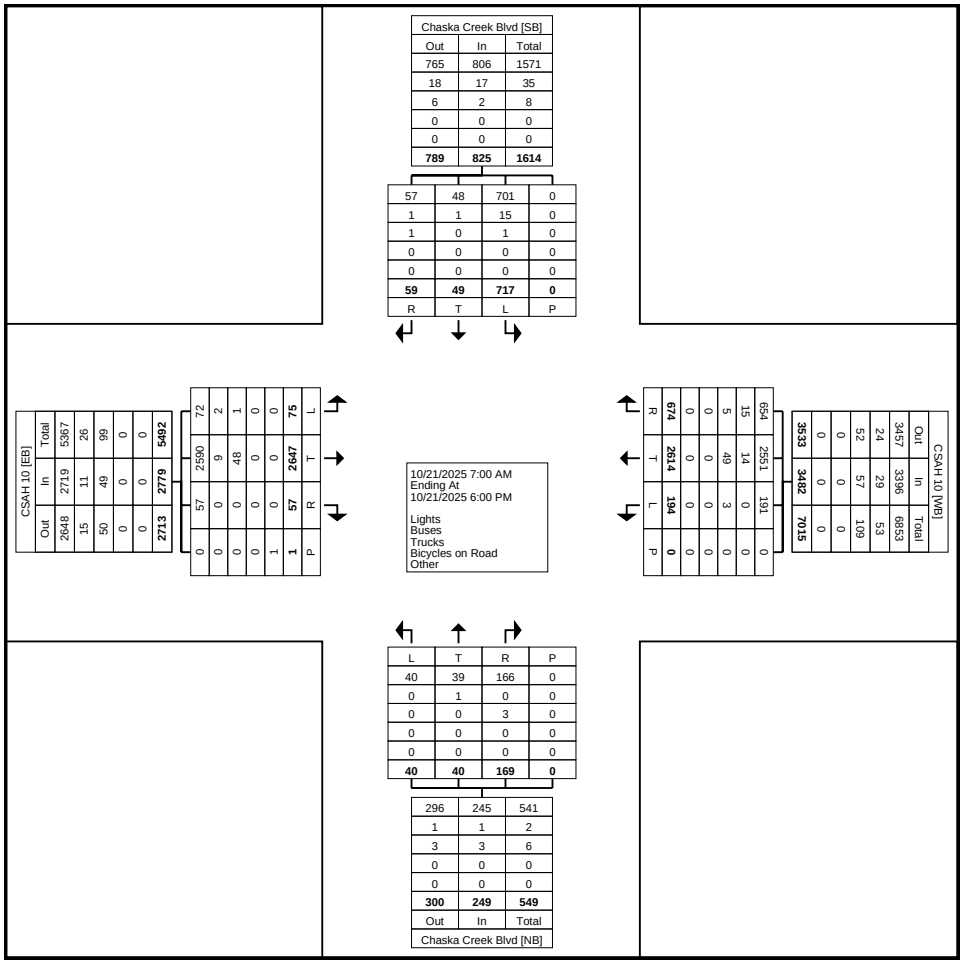
Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					Chaska Creek Blvd Northbound					Chaska Creek Blvd Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	2	225	4	0	231	9	80	15	0	104	0	0	3	0	3	58	3	2	0	63	401
7:15 AM	2	266	3	1	271	13	85	26	0	124	0	3	4	0	7	76	3	6	0	85	487
7:30 AM	3	261	5	0	269	26	101	33	0	160	0	1	6	0	7	83	5	6	0	94	530
7:45 AM	3	235	7	0	245	19	103	19	0	141	1	0	3	0	4	64	3	4	0	71	461
Hourly Total	10	987	19	1	1016	67	369	93	0	529	1	4	16	0	21	281	14	18	0	313	1879
8:00 AM	4	230	5	0	239	13	88	25	0	126	1	1	9	0	11	63	4	2	0	69	445
8:15 AM	1	211	3	0	215	22	88	27	0	137	0	1	5	0	6	50	6	3	0	59	417
8:30 AM	6	196	2	0	204	9	111	19	0	139	0	6	7	0	13	44	2	3	0	49	405
8:45 AM	1	145	11	0	157	11	86	11	0	108	4	3	11	0	18	38	2	3	0	43	326
Hourly Total	12	782	21	0	815	55	373	82	0	510	5	11	32	0	48	195	14	11	0	220	1593
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	6	112	4	0	122	13	225	45	0	283	6	5	20	0	31	34	0	5	0	39	475
4:15 PM	5	101	0	0	106	9	245	70	0	324	3	2	19	0	24	30	6	4	0	40	494
4:30 PM	6	114	3	0	123	9	268	65	0	342	8	1	21	0	30	33	6	4	0	43	538
4:45 PM	13	111	0	0	124	10	257	57	0	324	6	3	16	0	25	39	1	2	0	42	515
Hourly Total	30	438	7	0	475	41	995	237	0	1273	23	11	76	0	110	136	13	15	0	164	2022
5:00 PM	6	106	3	0	115	8	251	70	0	329	5	7	20	0	32	27	0	3	0	30	506
5:15 PM	8	111	0	0	119	3	224	75	0	302	3	4	10	0	17	27	4	4	0	35	473
5:30 PM	3	107	5	0	115	9	207	68	0	284	1	2	9	0	12	35	0	3	0	38	449
5:45 PM	6	116	2	0	124	11	195	49	0	255	2	1	6	0	9	16	4	5	0	25	413
Hourly Total	23	440	10	0	473	31	877	262	0	1170	11	14	45	0	70	105	8	15	0	128	1841
Grand Total	75	2647	57	1	2779	194	2614	674	0	3482	40	40	169	0	249	717	49	59	0	825	7335
Approach %	2.7	95.3	2.1	-	-	5.6	75.1	19.4	-	-	16.1	16.1	67.9	-	-	86.9	5.9	7.2	-	-	-
Total %	1.0	36.1	0.8	-	37.9	2.6	35.6	9.2	-	47.5	0.5	0.5	2.3	-	3.4	9.8	0.7	0.8	-	11.2	-
Lights	72	2590	57	-	2719	191	2551	654	-	3396	40	39	166	-	245	701	48	57	-	806	7166
% Lights	96.0	97.8	100.0	-	97.8	98.5	97.6	97.0	-	97.5	100.0	97.5	98.2	-	98.4	97.8	98.0	96.6	-	97.7	97.7
Buses	2	9	0	-	11	0	14	15	-	29	0	1	0	-	1	15	1	1	-	17	58
% Buses	2.7	0.3	0.0	-	0.4	0.0	0.5	2.2	-	0.8	0.0	2.5	0.0	-	0.4	2.1	2.0	1.7	-	2.1	0.8
Trucks	1	48	0	-	49	3	49	5	-	57	0	0	3	-	3	1	0	1	-	2	111
% Trucks	1.3	1.8	0.0	-	1.8	1.5	1.9	0.7	-	1.6	0.0	0.0	1.8	-	1.2	0.1	0.0	1.7	-	0.2	1.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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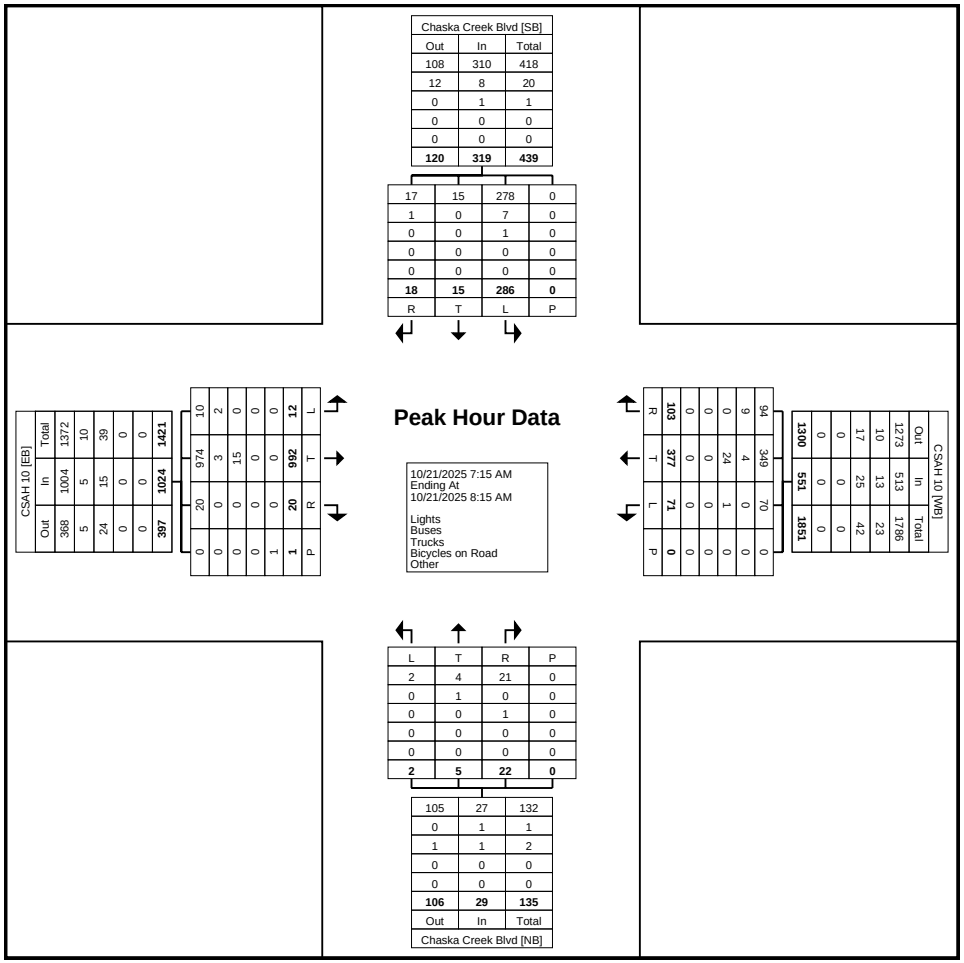
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					Chaska Creek Blvd Northbound					Chaska Creek Blvd Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	2	266	3	1	271	13	85	26	0	124	0	3	4	0	7	76	3	6	0	85	487
7:30 AM	3	261	5	0	269	26	101	33	0	160	0	1	6	0	7	83	5	6	0	94	530
7:45 AM	3	235	7	0	245	19	103	19	0	141	1	0	3	0	4	64	3	4	0	71	461
8:00 AM	4	230	5	0	239	13	88	25	0	126	1	1	9	0	11	63	4	2	0	69	445
Total	12	992	20	1	1024	71	377	103	0	551	2	5	22	0	29	286	15	18	0	319	1923
Approach %	1.2	96.9	2.0	-	-	12.9	68.4	18.7	-	-	6.9	17.2	75.9	-	-	89.7	4.7	5.6	-	-	-
Total %	0.6	51.6	1.0	-	53.3	3.7	19.6	5.4	-	28.7	0.1	0.3	1.1	-	1.5	14.9	0.8	0.9	-	16.6	-
PHF	0.750	0.932	0.714	-	0.945	0.683	0.915	0.780	-	0.861	0.500	0.417	0.611	-	0.659	0.861	0.750	0.750	-	0.848	0.907
Lights	10	974	20	-	1004	70	349	94	-	513	2	4	21	-	27	278	15	17	-	310	1854
% Lights	83.3	98.2	100.0	-	98.0	98.6	92.6	91.3	-	93.1	100.0	80.0	95.5	-	93.1	97.2	100.0	94.4	-	97.2	96.4
Buses	2	3	0	-	5	0	4	9	-	13	0	1	0	-	1	7	0	1	-	8	27
% Buses	16.7	0.3	0.0	-	0.5	0.0	1.1	8.7	-	2.4	0.0	20.0	0.0	-	3.4	2.4	0.0	5.6	-	2.5	1.4
Trucks	0	15	0	-	15	1	24	0	-	25	0	0	1	-	1	1	0	0	-	1	42
% Trucks	0.0	1.5	0.0	-	1.5	1.4	6.4	0.0	-	4.5	0.0	0.0	4.5	-	3.4	0.3	0.0	0.0	-	0.3	2.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 10 (Engler Boulevard) & Chaska Creek Boulevard
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: CSAH 10 (Engler Boulevard) & Chaska Creek Boulevard
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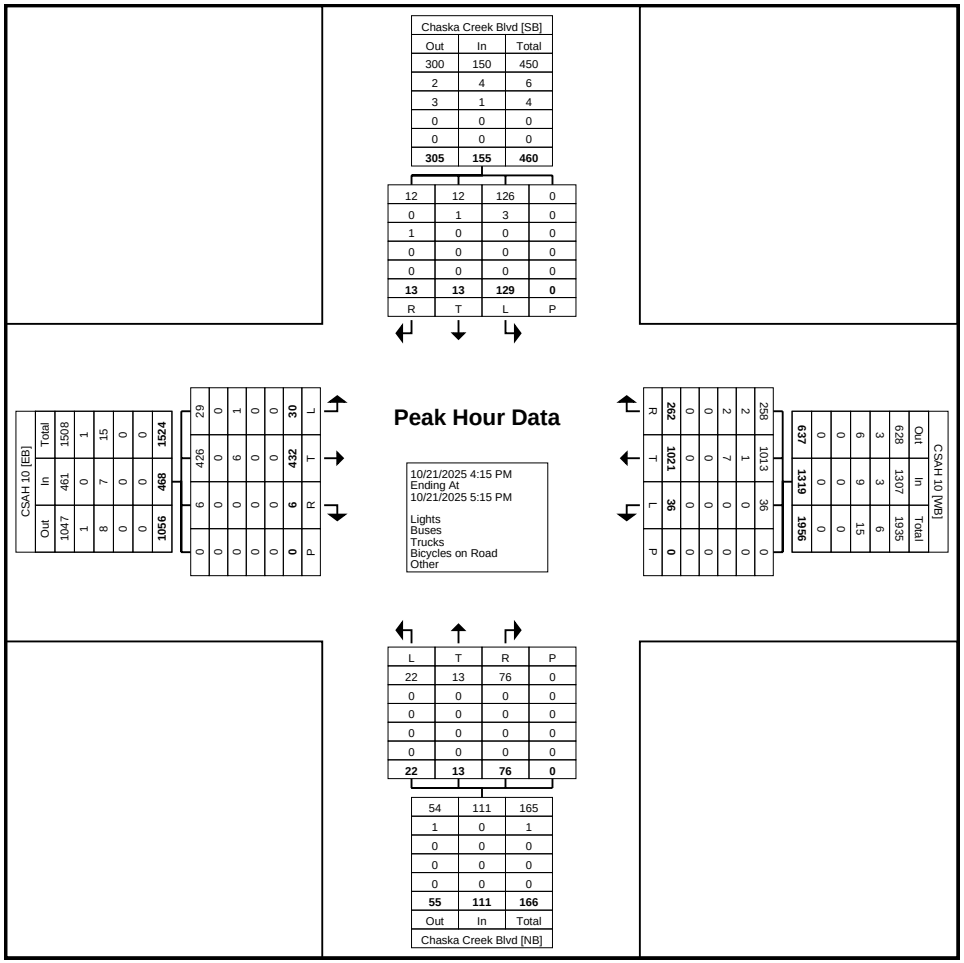
Turning Movement Peak Hour Data (4:15 PM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					Chaska Creek Blvd Northbound					Chaska Creek Blvd Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	5	101	0	0	106	9	245	70	0	324	3	2	19	0	24	30	6	4	0	40	494
4:30 PM	6	114	3	0	123	9	268	65	0	342	8	1	21	0	30	33	6	4	0	43	538
4:45 PM	13	111	0	0	124	10	257	57	0	324	6	3	16	0	25	39	1	2	0	42	515
5:00 PM	6	106	3	0	115	8	251	70	0	329	5	7	20	0	32	27	0	3	0	30	506
Total	30	432	6	0	468	36	1021	262	0	1319	22	13	76	0	111	129	13	13	0	155	2053
Approach %	6.4	92.3	1.3	-	-	2.7	77.4	19.9	-	-	19.8	11.7	68.5	-	-	83.2	8.4	8.4	-	-	-
Total %	1.5	21.0	0.3	-	22.8	1.8	49.7	12.8	-	64.2	1.1	0.6	3.7	-	5.4	6.3	0.6	0.6	-	7.5	-
PHF	0.577	0.947	0.500	-	0.944	0.900	0.952	0.936	-	0.964	0.688	0.464	0.905	-	0.867	0.827	0.542	0.813	-	0.901	0.954
Lights	29	426	6	-	461	36	1013	258	-	1307	22	13	76	-	111	126	12	12	-	150	2029
% Lights	96.7	98.6	100.0	-	98.5	100.0	99.2	98.5	-	99.1	100.0	100.0	100.0	-	100.0	97.7	92.3	92.3	-	96.8	98.8
Buses	0	0	0	-	0	0	1	2	-	3	0	0	0	-	0	3	1	0	-	4	7
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.1	0.8	-	0.2	0.0	0.0	0.0	-	0.0	2.3	7.7	0.0	-	2.6	0.3
Trucks	1	6	0	-	7	0	7	2	-	9	0	0	0	-	0	0	0	1	-	1	17
% Trucks	3.3	1.4	0.0	-	1.5	0.0	0.7	0.8	-	0.7	0.0	0.0	0.0	-	0.0	0.0	0.0	7.7	-	0.6	0.8
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
Start Date: 10/21/2025
Page No: 7



Turning Movement Peak Hour Data Plot (4:15 PM)

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Count Name: CSAH 10 (Engler Boulevard) & CSAH 11 (Jonathan Carver Parkway)
Site Code:
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Page No: 1

Turning Movement Data

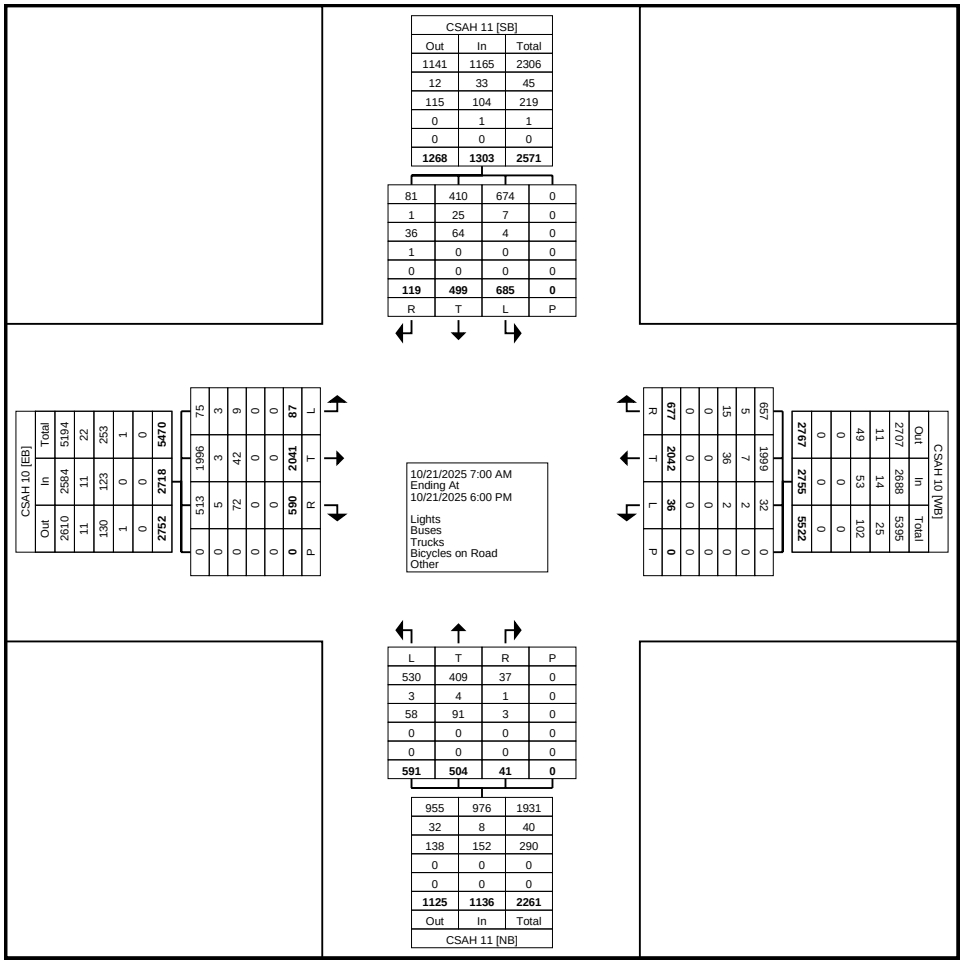
Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	5	165	21	0	191	0	71	10	0	81	33	22	0	0	55	57	26	5	0	88	415
7:15 AM	5	229	54	0	288	0	84	11	0	95	31	29	4	0	64	57	18	4	0	79	526
7:30 AM	6	189	42	0	237	3	79	20	0	102	45	34	2	0	81	67	28	2	0	97	517
7:45 AM	7	180	52	0	239	2	82	35	0	119	24	39	4	0	67	66	32	12	0	110	535
Hourly Total	23	763	169	0	955	5	316	76	0	397	133	124	10	0	267	247	104	23	0	374	1993
8:00 AM	5	171	46	0	222	2	67	21	0	90	15	24	3	0	42	60	25	18	0	103	457
8:15 AM	6	164	31	0	201	3	57	30	0	90	26	20	1	0	47	57	30	16	0	103	441
8:30 AM	4	141	36	0	181	2	76	30	0	108	32	19	3	0	54	45	23	8	0	76	419
8:45 AM	10	104	30	0	144	2	68	27	0	97	16	30	2	0	48	47	26	8	0	81	370
Hourly Total	25	580	143	0	748	9	268	108	0	385	89	93	9	0	191	209	104	50	0	363	1687
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	2	88	41	0	131	3	173	49	0	225	44	38	3	0	85	29	49	6	0	84	525
4:15 PM	4	79	45	0	128	1	188	69	0	258	49	43	2	0	94	28	37	1	0	66	546
4:30 PM	3	89	35	0	127	2	208	67	0	277	55	39	4	0	98	34	50	8	0	92	594
4:45 PM	5	95	42	0	142	2	213	46	0	261	48	47	1	0	96	27	35	5	0	67	566
Hourly Total	14	351	163	0	528	8	782	231	0	1021	196	167	10	0	373	118	171	20	0	309	2231
5:00 PM	6	84	35	0	125	2	189	69	0	260	52	38	2	0	92	28	32	7	0	67	544
5:15 PM	5	86	31	0	122	3	183	74	0	260	54	27	2	0	83	25	36	10	0	71	536
5:30 PM	9	80	24	0	113	2	151	54	0	207	37	27	5	0	69	33	32	7	0	72	461
5:45 PM	5	97	25	0	127	7	153	65	0	225	30	28	3	0	61	25	20	2	0	47	460
Hourly Total	25	347	115	0	487	14	676	262	0	952	173	120	12	0	305	111	120	26	0	257	2001
Grand Total	87	2041	590	0	2718	36	2042	677	0	2755	591	504	41	0	1136	685	499	119	0	1303	7912
Approach %	3.2	75.1	21.7	-	-	1.3	74.1	24.6	-	-	52.0	44.4	3.6	-	-	52.6	38.3	9.1	-	-	-
Total %	1.1	25.8	7.5	-	34.4	0.5	25.8	8.6	-	34.8	7.5	6.4	0.5	-	14.4	8.7	6.3	1.5	-	16.5	-
Lights	75	1996	513	-	2584	32	1999	657	-	2688	530	409	37	-	976	674	410	81	-	1165	7413
% Lights	86.2	97.8	86.9	-	95.1	88.9	97.9	97.0	-	97.6	89.7	81.2	90.2	-	85.9	98.4	82.2	68.1	-	89.4	93.7
Buses	3	3	5	-	11	2	7	5	-	14	3	4	1	-	8	7	25	1	-	33	66
% Buses	3.4	0.1	0.8	-	0.4	5.6	0.3	0.7	-	0.5	0.5	0.8	2.4	-	0.7	1.0	5.0	0.8	-	2.5	0.8
Trucks	9	42	72	-	123	2	36	15	-	53	58	91	3	-	152	4	64	36	-	104	432
% Trucks	10.3	2.1	12.2	-	4.5	5.6	1.8	2.2	-	1.9	9.8	18.1	7.3	-	13.4	0.6	12.8	30.3	-	8.0	5.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.8	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 10 (Engler Boulevard) & CSAH 11 (Jonathan Carver Parkway)
Site Code:
Start Date: 10/21/2025
Page No: 3



Turning Movement Data Plot

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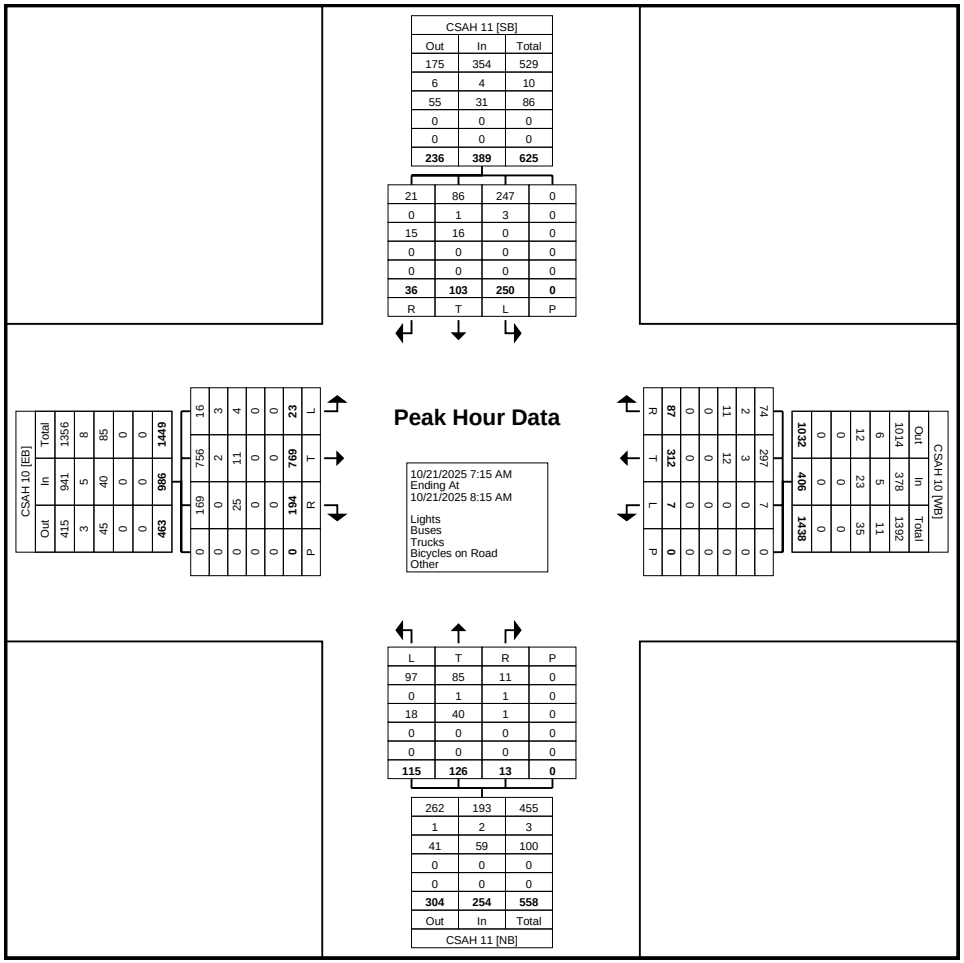
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	5	229	54	0	288	0	84	11	0	95	31	29	4	0	64	57	18	4	0	79	526
7:30 AM	6	189	42	0	237	3	79	20	0	102	45	34	2	0	81	67	28	2	0	97	517
7:45 AM	7	180	52	0	239	2	82	35	0	119	24	39	4	0	67	66	32	12	0	110	535
8:00 AM	5	171	46	0	222	2	67	21	0	90	15	24	3	0	42	60	25	18	0	103	457
Total	23	769	194	0	986	7	312	87	0	406	115	126	13	0	254	250	103	36	0	389	2035
Approach %	2.3	78.0	19.7	-	-	1.7	76.8	21.4	-	-	45.3	49.6	5.1	-	-	64.3	26.5	9.3	-	-	-
Total %	1.1	37.8	9.5	-	48.5	0.3	15.3	4.3	-	20.0	5.7	6.2	0.6	-	12.5	12.3	5.1	1.8	-	19.1	-
PHF	0.821	0.840	0.898	-	0.856	0.583	0.929	0.621	-	0.853	0.639	0.808	0.813	-	0.784	0.933	0.805	0.500	-	0.884	0.951
Lights	16	756	169	-	941	7	297	74	-	378	97	85	11	-	193	247	86	21	-	354	1866
% Lights	69.6	98.3	87.1	-	95.4	100.0	95.2	85.1	-	93.1	84.3	67.5	84.6	-	76.0	98.8	83.5	58.3	-	91.0	91.7
Buses	3	2	0	-	5	0	3	2	-	5	0	1	1	-	2	3	1	0	-	4	16
% Buses	13.0	0.3	0.0	-	0.5	0.0	1.0	2.3	-	1.2	0.0	0.8	7.7	-	0.8	1.2	1.0	0.0	-	1.0	0.8
Trucks	4	11	25	-	40	0	12	11	-	23	18	40	1	-	59	0	16	15	-	31	153
% Trucks	17.4	1.4	12.9	-	4.1	0.0	3.8	12.6	-	5.7	15.7	31.7	7.7	-	23.2	0.0	15.5	41.7	-	8.0	7.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (7:15 AM)

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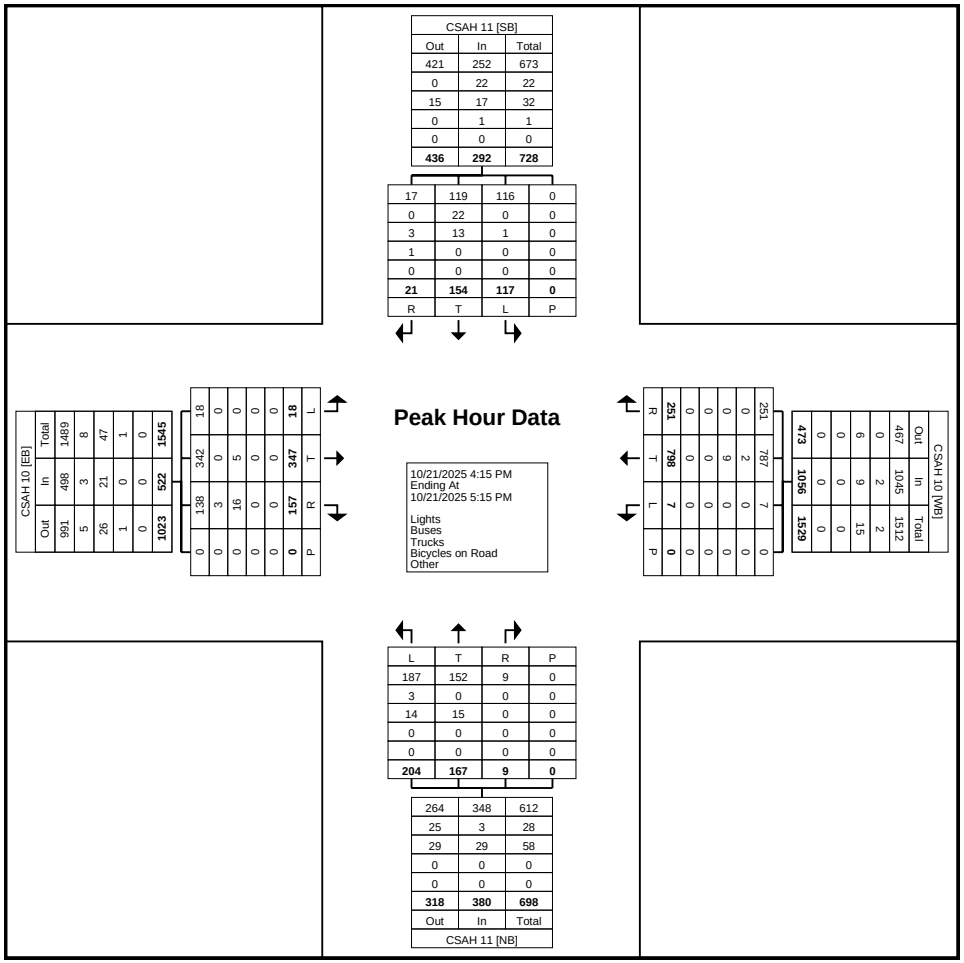
Turning Movement Peak Hour Data (4:15 PM)

Start Time	CSAH 10 Eastbound					CSAH 10 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	4	79	45	0	128	1	188	69	0	258	49	43	2	0	94	28	37	1	0	66	546
4:30 PM	3	89	35	0	127	2	208	67	0	277	55	39	4	0	98	34	50	8	0	92	594
4:45 PM	5	95	42	0	142	2	213	46	0	261	48	47	1	0	96	27	35	5	0	67	566
5:00 PM	6	84	35	0	125	2	189	69	0	260	52	38	2	0	92	28	32	7	0	67	544
Total	18	347	157	0	522	7	798	251	0	1056	204	167	9	0	380	117	154	21	0	292	2250
Approach %	3.4	66.5	30.1	-	-	0.7	75.6	23.8	-	-	53.7	43.9	2.4	-	-	40.1	52.7	7.2	-	-	-
Total %	0.8	15.4	7.0	-	23.2	0.3	35.5	11.2	-	46.9	9.1	7.4	0.4	-	16.9	5.2	6.8	0.9	-	13.0	-
PHF	0.750	0.913	0.872	-	0.919	0.875	0.937	0.909	-	0.953	0.927	0.888	0.563	-	0.969	0.860	0.770	0.656	-	0.793	0.947
Lights	18	342	138	-	498	7	787	251	-	1045	187	152	9	-	348	116	119	17	-	252	2143
% Lights	100.0	98.6	87.9	-	95.4	100.0	98.6	100.0	-	99.0	91.7	91.0	100.0	-	91.6	99.1	77.3	81.0	-	86.3	95.2
Buses	0	0	3	-	3	0	2	0	-	2	3	0	0	-	3	0	22	0	-	22	30
% Buses	0.0	0.0	1.9	-	0.6	0.0	0.3	0.0	-	0.2	1.5	0.0	0.0	-	0.8	0.0	14.3	0.0	-	7.5	1.3
Trucks	0	5	16	-	21	0	9	0	-	9	14	15	0	-	29	1	13	3	-	17	76
% Trucks	0.0	1.4	10.2	-	4.0	0.0	1.1	0.0	-	0.9	6.9	9.0	0.0	-	7.6	0.9	8.4	14.3	-	5.8	3.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	4.8	-	0.3	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 10 (Engler Boulevard) & CSAH 11 (Jonathan Carver Parkway)
Site Code:
Start Date: 10/21/2025
Page No: 7



Turning Movement Peak Hour Data Plot (4:15 PM)

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025

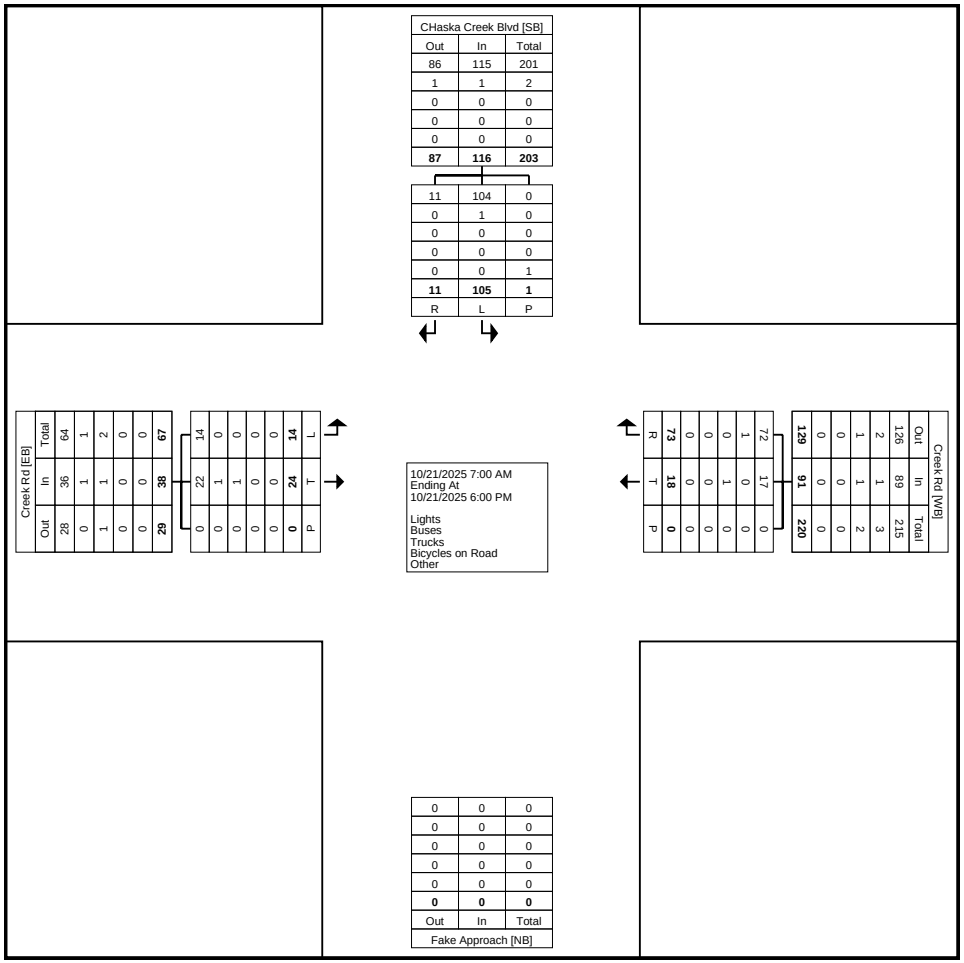
Turning Movement Data

Start Time	Creek Rd Eastbound				Creek Rd Westbound				CHaska Creek Blvd Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	2	3	0	5	3	3	0	6	1	0	0	1	12
7:15 AM	2	1	0	3	1	3	0	4	2	0	0	2	9
7:30 AM	0	2	0	2	2	6	0	8	6	0	0	6	16
7:45 AM	1	1	0	2	0	5	0	5	1	0	0	1	8
Hourly Total	5	7	0	12	6	17	0	23	10	0	0	10	45
8:00 AM	1	2	0	3	1	4	0	5	5	2	0	7	15
8:15 AM	1	1	0	2	1	7	0	8	6	0	0	6	16
8:30 AM	0	0	0	0	2	8	0	10	5	0	0	5	15
8:45 AM	1	0	0	1	0	4	0	4	4	0	0	4	9
Hourly Total	3	3	0	6	4	23	0	27	20	2	0	22	55
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	1	0	2	2	6	0	8	7	0	1	7	17
4:15 PM	2	2	0	4	1	7	0	8	12	0	0	12	24
4:30 PM	0	2	0	2	1	4	0	5	11	1	0	12	19
4:45 PM	1	4	0	5	0	4	0	4	10	2	0	12	21
Hourly Total	4	9	0	13	4	21	0	25	40	3	1	43	81
5:00 PM	1	1	0	2	1	2	0	3	14	0	0	14	19
5:15 PM	1	1	0	2	3	4	0	7	3	3	0	6	15
5:30 PM	0	3	0	3	0	3	0	3	7	1	0	8	14
5:45 PM	0	0	0	0	0	3	0	3	11	2	0	13	16
Hourly Total	2	5	0	7	4	12	0	16	35	6	0	41	64
Grand Total	14	24	0	38	18	73	0	91	105	11	1	116	245
Approach %	36.8	63.2	-	-	19.8	80.2	-	-	90.5	9.5	-	-	-
Total %	5.7	9.8	-	15.5	7.3	29.8	-	37.1	42.9	4.5	-	47.3	-
Lights	14	22	-	36	17	72	-	89	104	11	-	115	240
% Lights	100.0	91.7	-	94.7	94.4	98.6	-	97.8	99.0	100.0	-	99.1	98.0
Buses	0	1	-	1	0	1	-	1	1	0	-	1	3
% Buses	0.0	4.2	-	2.6	0.0	1.4	-	1.1	1.0	0.0	-	0.9	1.2
Trucks	0	1	-	1	1	0	-	1	0	0	-	0	2
% Trucks	0.0	4.2	-	2.6	5.6	0.0	-	1.1	0.0	0.0	-	0.0	0.8
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025



Turning Movement Data Plot

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Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025

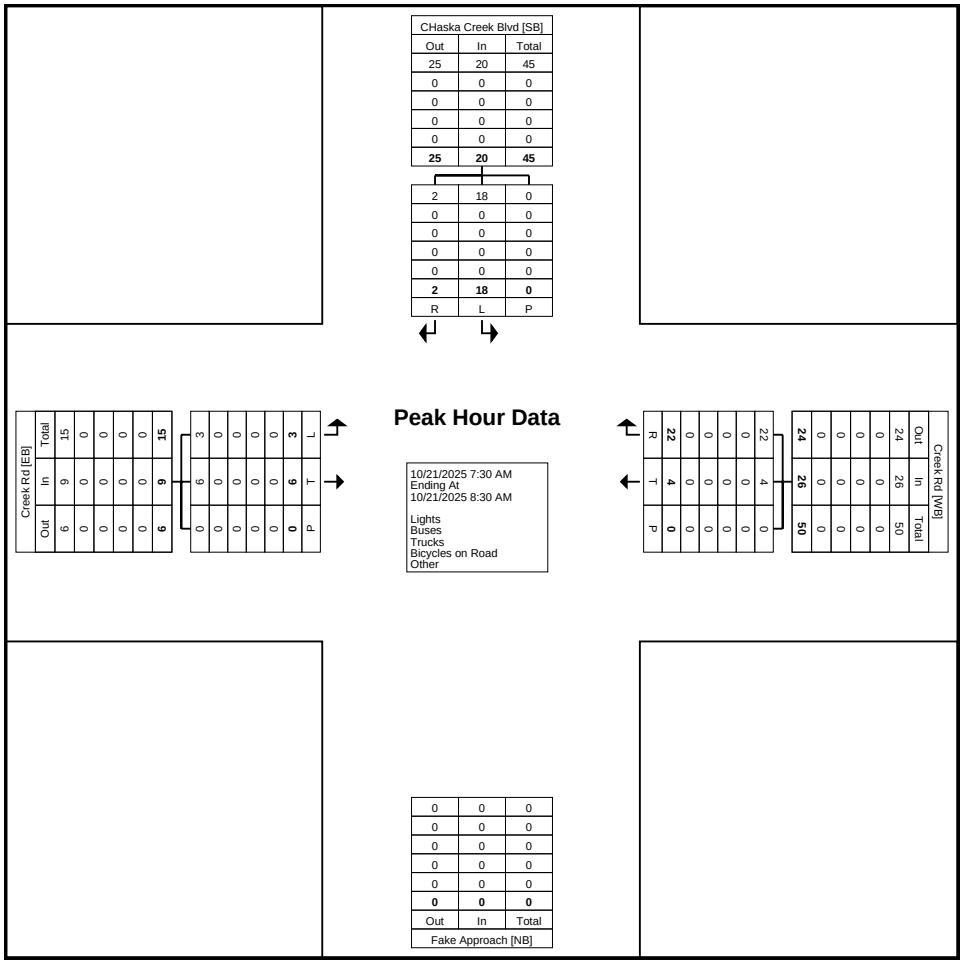
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Creek Rd Eastbound				Creek Rd Westbound				CHaska Creek Blvd Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:30 AM	0	2	0	2	2	6	0	8	6	0	0	6	16
7:45 AM	1	1	0	2	0	5	0	5	1	0	0	1	8
8:00 AM	1	2	0	3	1	4	0	5	5	2	0	7	15
8:15 AM	1	1	0	2	1	7	0	8	6	0	0	6	16
Total	3	6	0	9	4	22	0	26	18	2	0	20	55
Approach %	33.3	66.7	-	-	15.4	84.6	-	-	90.0	10.0	-	-	-
Total %	5.5	10.9	-	16.4	7.3	40.0	-	47.3	32.7	3.6	-	36.4	-
PHF	0.750	0.750	-	0.750	0.500	0.786	-	0.813	0.750	0.250	-	0.714	0.859
Lights	3	6	-	9	4	22	-	26	18	2	-	20	55
% Lights	100.0	100.0	-	100.0	100.0	100.0	-	100.0	100.0	100.0	-	100.0	100.0
Buses	0	0	-	0	0	0	-	0	0	0	-	0	0
% Buses	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:30 AM)

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(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025

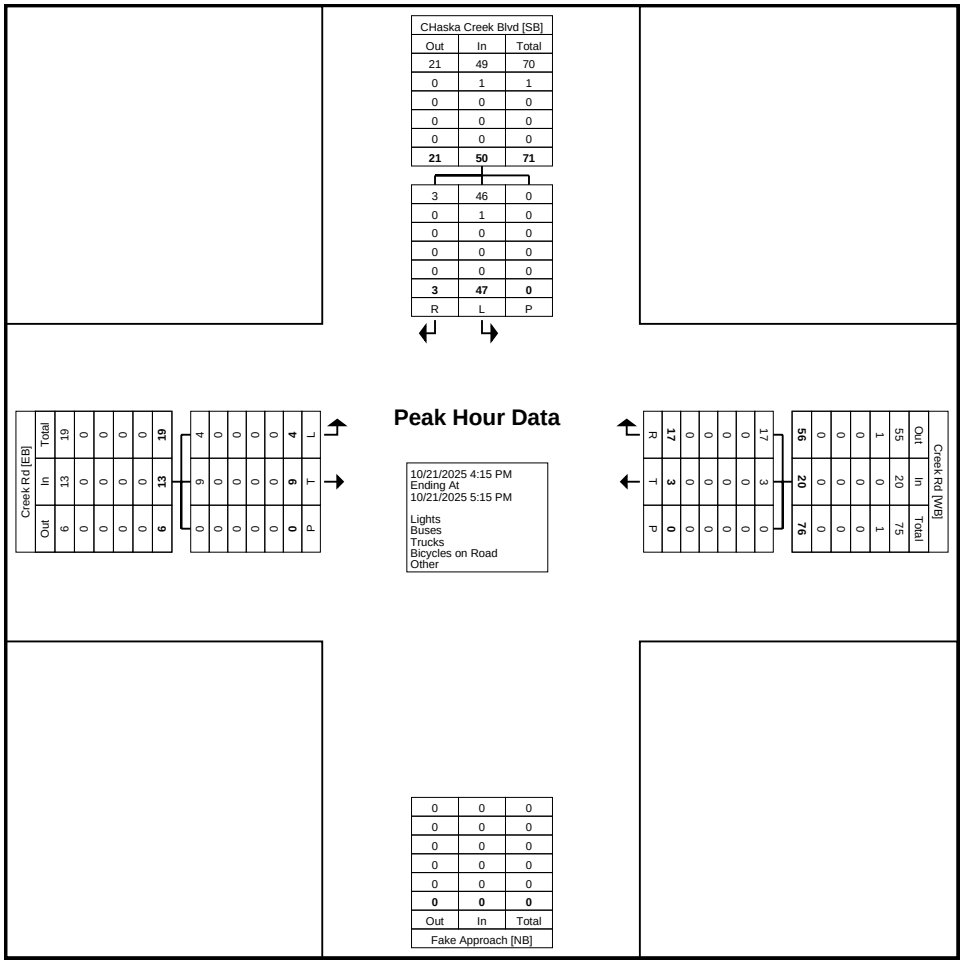
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Creek Rd Eastbound				Creek Rd Westbound				CHaska Creek Blvd Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:15 PM	2	2	0	4	1	7	0	8	12	0	0	12	24
4:30 PM	0	2	0	2	1	4	0	5	11	1	0	12	19
4:45 PM	1	4	0	5	0	4	0	4	10	2	0	12	21
5:00 PM	1	1	0	2	1	2	0	3	14	0	0	14	19
Total	4	9	0	13	3	17	0	20	47	3	0	50	83
Approach %	30.8	69.2	-	-	15.0	85.0	-	-	94.0	6.0	-	-	-
Total %	4.8	10.8	-	15.7	3.6	20.5	-	24.1	56.6	3.6	-	60.2	-
PHF	0.500	0.563	-	0.650	0.750	0.607	-	0.625	0.839	0.375	-	0.893	0.865
Lights	4	9	-	13	3	17	-	20	46	3	-	49	82
% Lights	100.0	100.0	-	100.0	100.0	100.0	-	100.0	97.9	100.0	-	98.0	98.8
Buses	0	0	-	0	0	0	-	0	1	0	-	1	1
% Buses	0.0	0.0	-	0.0	0.0	0.0	-	0.0	2.1	0.0	-	2.0	1.2
Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: Chaska Creek Boulevard & Creek Road
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (4:15 PM)

Kimley-Horn
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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 1

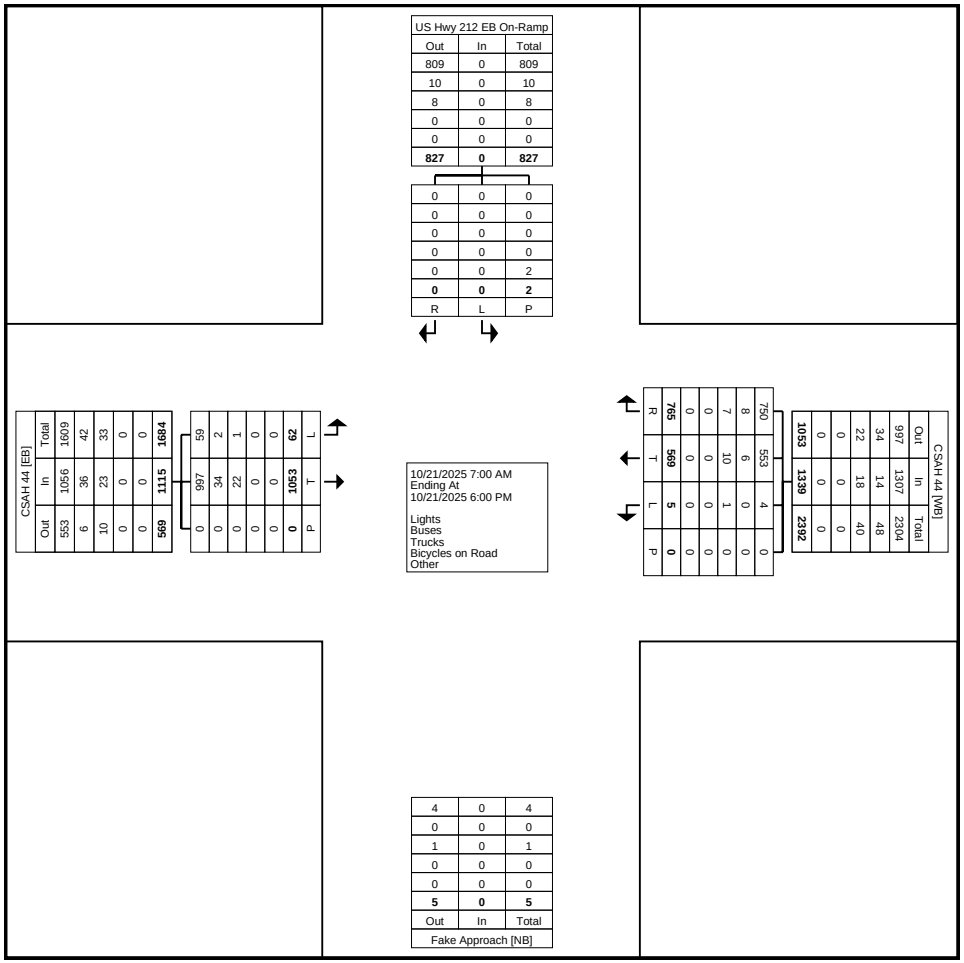
Turning Movement Data

Start Time	CSAH 44 Eastbound				CSAH 44 Westbound					US Hwy 212 EB On-Ramp Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	7	32	0	39	0	28	63	0	91	0	0	0	0	130
7:15 AM	3	48	0	51	0	44	107	0	151	0	0	2	0	202
7:30 AM	7	58	0	65	0	27	77	0	104	0	0	0	0	169
7:45 AM	5	75	0	80	0	28	48	0	76	0	0	0	0	156
Hourly Total	22	213	0	235	0	127	295	0	422	0	0	2	0	657
8:00 AM	4	69	0	73	1	20	68	0	89	0	0	0	0	162
8:15 AM	5	41	0	46	0	18	51	0	69	0	0	0	0	115
8:30 AM	2	46	0	48	0	23	49	0	72	0	0	0	0	120
8:45 AM	3	49	0	52	1	17	34	0	52	0	0	0	0	104
Hourly Total	14	205	0	219	2	78	202	0	282	0	0	0	0	501
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	71	0	74	0	42	34	0	76	0	0	0	0	150
4:15 PM	3	94	0	97	1	52	38	0	91	0	0	0	0	188
4:30 PM	5	90	0	95	0	51	40	0	91	0	0	0	0	186
4:45 PM	2	78	0	80	0	63	28	0	91	0	0	0	0	171
Hourly Total	13	333	0	346	1	208	140	0	349	0	0	0	0	695
5:00 PM	7	64	0	71	0	61	35	0	96	0	0	0	0	167
5:15 PM	2	82	0	84	0	39	34	0	73	0	0	0	0	157
5:30 PM	2	76	0	78	1	31	25	0	57	0	0	0	0	135
5:45 PM	2	80	0	82	1	25	34	0	60	0	0	0	0	142
Hourly Total	13	302	0	315	2	156	128	0	286	0	0	0	0	601
Grand Total	62	1053	0	1115	5	569	765	0	1339	0	0	2	0	2454
Approach %	5.6	94.4	-	-	0.4	42.5	57.1	-	-	0.0	0.0	-	-	-
Total %	2.5	42.9	-	45.4	0.2	23.2	31.2	-	54.6	0.0	0.0	-	0.0	-
Lights	59	997	-	1056	4	553	750	-	1307	0	0	-	0	2363
% Lights	95.2	94.7	-	94.7	80.0	97.2	98.0	-	97.6	-	-	-	-	96.3
Buses	2	34	-	36	0	6	8	-	14	0	0	-	0	50
% Buses	3.2	3.2	-	3.2	0.0	1.1	1.0	-	1.0	-	-	-	-	2.0
Trucks	1	22	-	23	1	10	7	-	18	0	0	-	0	41
% Trucks	1.6	2.1	-	2.1	20.0	1.8	0.9	-	1.3	-	-	-	-	1.7
Bicycles on Road	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 2



Turning Movement Data Plot

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

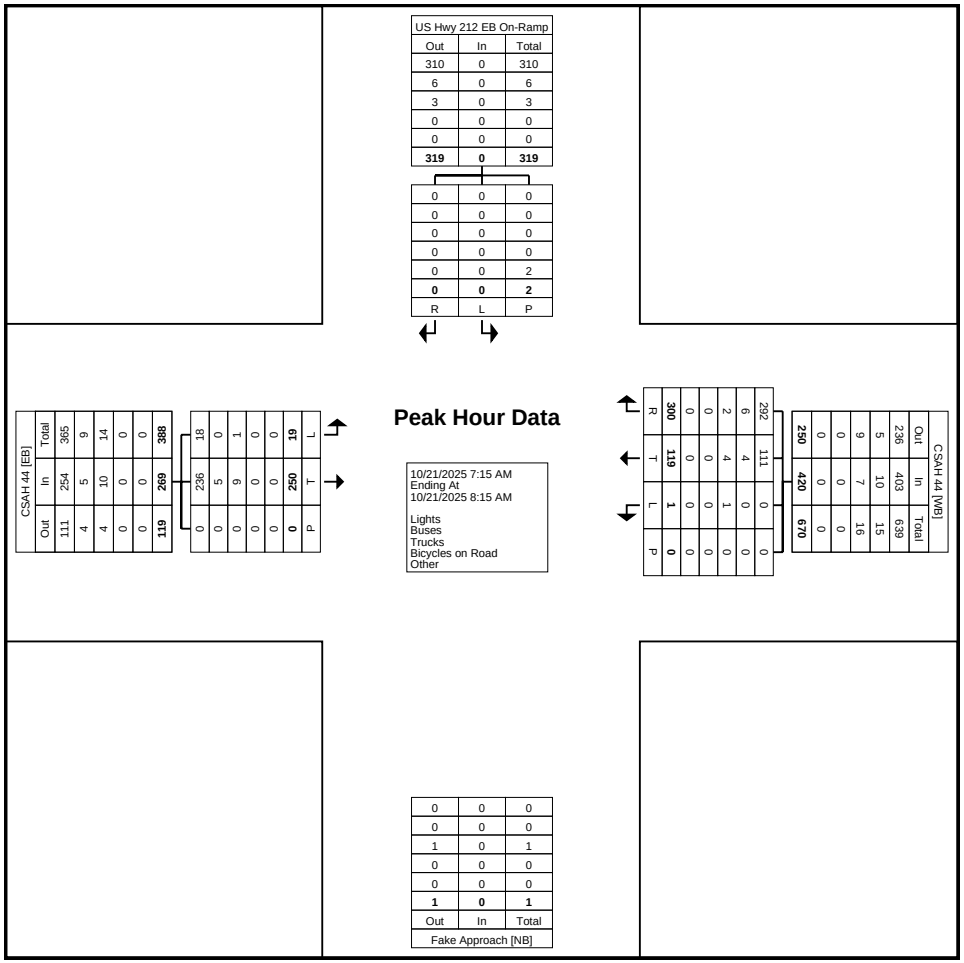
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 44 Eastbound				CSAH 44 Westbound					US Hwy 212 EB On-Ramp Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:15 AM	3	48	0	51	0	44	107	0	151	0	0	2	0	202
7:30 AM	7	58	0	65	0	27	77	0	104	0	0	0	0	169
7:45 AM	5	75	0	80	0	28	48	0	76	0	0	0	0	156
8:00 AM	4	69	0	73	1	20	68	0	89	0	0	0	0	162
Total	19	250	0	269	1	119	300	0	420	0	0	2	0	689
Approach %	7.1	92.9	-	-	0.2	28.3	71.4	-	-	0.0	0.0	-	-	-
Total %	2.8	36.3	-	39.0	0.1	17.3	43.5	-	61.0	0.0	0.0	-	0.0	-
PHF	0.679	0.833	-	0.841	0.250	0.676	0.701	-	0.695	0.000	0.000	-	0.000	0.853
Lights	18	236	-	254	0	111	292	-	403	0	0	-	0	657
% Lights	94.7	94.4	-	94.4	0.0	93.3	97.3	-	96.0	-	-	-	-	95.4
Buses	0	5	-	5	0	4	6	-	10	0	0	-	0	15
% Buses	0.0	2.0	-	1.9	0.0	3.4	2.0	-	2.4	-	-	-	-	2.2
Trucks	1	9	-	10	1	4	2	-	7	0	0	-	0	17
% Trucks	5.3	3.6	-	3.7	100.0	3.4	0.7	-	1.7	-	-	-	-	2.5
Bicycles on Road	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

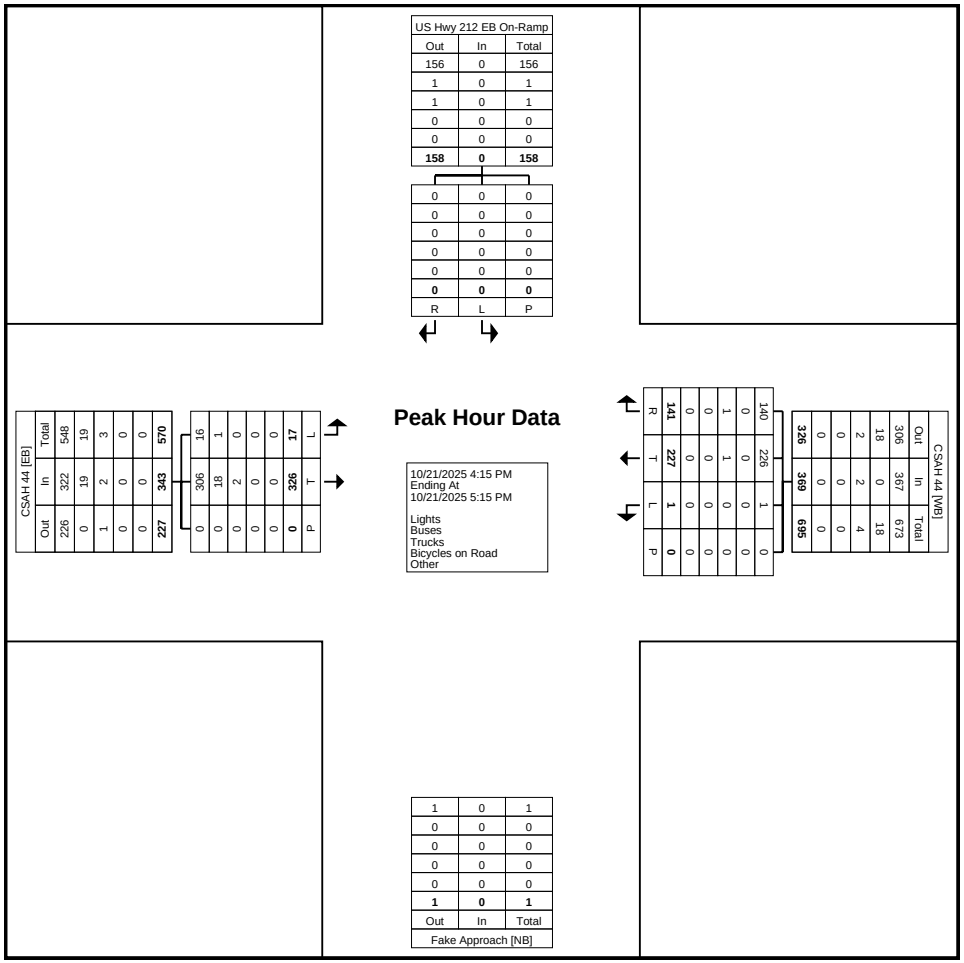
Turning Movement Peak Hour Data (4:15 PM)

Start Time	CSAH 44 Eastbound				CSAH 44 Westbound					US Hwy 212 EB On-Ramp Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:15 PM	3	94	0	97	1	52	38	0	91	0	0	0	0	188
4:30 PM	5	90	0	95	0	51	40	0	91	0	0	0	0	186
4:45 PM	2	78	0	80	0	63	28	0	91	0	0	0	0	171
5:00 PM	7	64	0	71	0	61	35	0	96	0	0	0	0	167
Total	17	326	0	343	1	227	141	0	369	0	0	0	0	712
Approach %	5.0	95.0	-	-	0.3	61.5	38.2	-	-	0.0	0.0	-	-	-
Total %	2.4	45.8	-	48.2	0.1	31.9	19.8	-	51.8	0.0	0.0	-	0.0	-
PHF	0.607	0.867	-	0.884	0.250	0.901	0.881	-	0.961	0.000	0.000	-	0.000	0.947
Lights	16	306	-	322	1	226	140	-	367	0	0	-	0	689
% Lights	94.1	93.9	-	93.9	100.0	99.6	99.3	-	99.5	-	-	-	-	96.8
Buses	1	18	-	19	0	0	0	-	0	0	0	-	0	19
% Buses	5.9	5.5	-	5.5	0.0	0.0	0.0	-	0.0	-	-	-	-	2.7
Trucks	0	2	-	2	0	1	1	-	2	0	0	-	0	4
% Trucks	0.0	0.6	-	0.6	0.0	0.4	0.7	-	0.5	-	-	-	-	0.6
Bicycles on Road	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
4201 Winfield Road Suite 600

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 6



Turning Movement Peak Hour Data Plot (4:15 PM)

Kimley-Horn
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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

Turning Movement Data

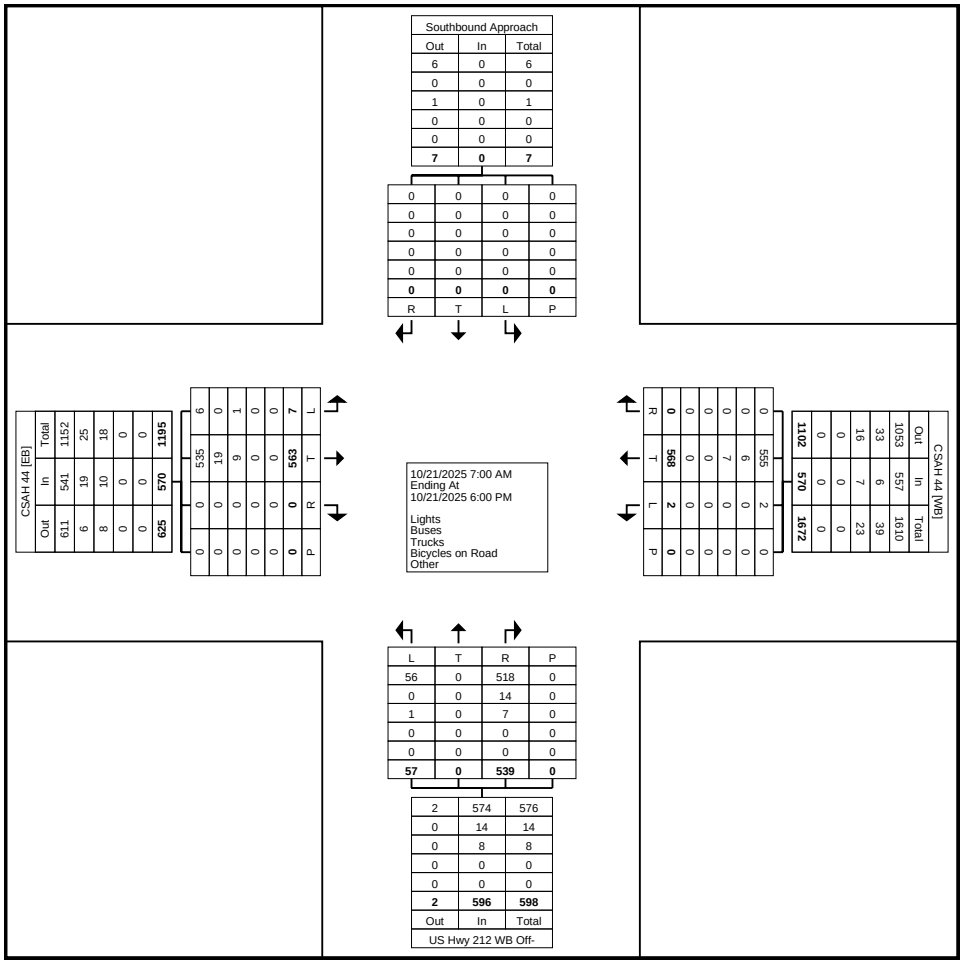
Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					US Hwy 212 WB Off-Ramp Northbound					Southbound Approach Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	28	0	0	28	0	28	0	0	28	2	0	11	0	13	0	0	0	0	0	69
7:15 AM	0	43	0	0	43	0	44	0	0	44	1	0	8	0	9	0	0	0	0	0	96
7:30 AM	2	54	0	0	56	0	28	0	0	28	0	0	11	0	11	0	0	0	0	0	95
7:45 AM	1	55	0	0	56	0	24	0	0	24	2	0	23	0	25	0	0	0	0	0	105
Hourly Total	3	180	0	0	183	0	124	0	0	124	5	0	53	0	58	0	0	0	0	0	365
8:00 AM	1	51	0	0	52	0	20	0	0	20	0	0	19	0	19	0	0	0	0	0	91
8:15 AM	0	27	0	0	27	0	17	0	0	17	0	0	16	0	16	0	0	0	0	0	60
8:30 AM	1	27	0	0	28	0	23	0	0	23	0	0	25	0	25	0	0	0	0	0	76
8:45 AM	1	26	0	0	27	1	18	0	0	19	0	0	22	0	22	0	0	0	0	0	68
Hourly Total	3	131	0	0	134	1	78	0	0	79	0	0	82	0	82	0	0	0	0	0	295
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	33	0	0	34	0	41	0	0	41	9	0	38	0	47	0	0	0	0	0	122
4:15 PM	0	39	0	0	39	0	50	0	0	50	8	0	61	0	69	0	0	0	0	0	158
4:30 PM	0	41	0	0	41	0	55	0	0	55	5	0	52	0	57	0	0	0	0	0	153
4:45 PM	0	39	0	0	39	0	64	0	0	64	8	0	43	0	51	0	0	0	0	0	154
Hourly Total	1	152	0	0	153	0	210	0	0	210	30	0	194	0	224	0	0	0	0	0	587
5:00 PM	0	32	0	0	32	1	60	0	0	61	7	0	38	0	45	0	0	0	0	0	138
5:15 PM	0	24	0	0	24	0	38	0	0	38	8	0	58	0	66	0	0	0	0	0	128
5:30 PM	0	22	0	0	22	0	33	0	0	33	4	0	56	0	60	0	0	0	0	0	115
5:45 PM	0	22	0	0	22	0	25	0	0	25	3	0	58	0	61	0	0	0	0	0	108
Hourly Total	0	100	0	0	100	1	156	0	0	157	22	0	210	0	232	0	0	0	0	0	489
Grand Total	7	563	0	0	570	2	568	0	0	570	57	0	539	0	596	0	0	0	0	0	1736
Approach %	1.2	98.8	0.0	-	-	0.4	99.6	0.0	-	-	9.6	0.0	90.4	-	-	0.0	0.0	0.0	-	-	-
Total %	0.4	32.4	0.0	-	32.8	0.1	32.7	0.0	-	32.8	3.3	0.0	31.0	-	34.3	0.0	0.0	0.0	-	0.0	-
Lights	6	535	0	-	541	2	555	0	-	557	56	0	518	-	574	0	0	0	-	0	1672
% Lights	85.7	95.0	-	-	94.9	100.0	97.7	-	-	97.7	98.2	-	96.1	-	96.3	-	-	-	-	-	96.3
Buses	0	19	0	-	19	0	6	0	-	6	0	0	14	-	14	0	0	0	-	0	39
% Buses	0.0	3.4	-	-	3.3	0.0	1.1	-	-	1.1	0.0	-	2.6	-	2.3	-	-	-	-	-	2.2
Trucks	1	9	0	-	10	0	7	0	-	7	1	0	7	-	8	0	0	0	-	0	25
% Trucks	14.3	1.6	-	-	1.8	0.0	1.2	-	-	1.2	1.8	-	1.3	-	1.3	-	-	-	-	-	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 3



Turning Movement Data Plot

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Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

Approach Data

Start Time	Wb Street Westbound						Eb Street Eastbound						Sb Street Southbound						Nb Street Northbound					
	Peds CCW	Peds CW	Circulating	Out	In	Next	Peds CCW	Peds CW	Circulating	Out	In	Next	Peds CCW	Peds CW	Circulating	Out	In	Next	Peds CCW	Peds CW	Circulating	Out	In	Next
7:00 AM	0	0	2	40	28	28	0	0	0	29	28	0	0	0	30	0	0	0	0	0	28	0	13	11
7:15 AM	0	0	1	52	44	44	0	0	0	46	43	0	0	0	45	0	0	0	0	0	43	0	9	8
7:30 AM	0	0	1	62	28	28	0	0	0	29	59	0	0	0	29	0	0	0	0	0	59	0	12	11
7:45 AM	0	0	3	77	25	24	0	0	0	27	57	0	0	0	28	0	0	0	0	0	57	0	26	23
Hourly Total	0	0	7	231	125	124	0	0	0	131	187	0	0	0	132	0	0	0	0	0	187	0	60	53
8:00 AM	0	0	0	70	20	20	0	0	0	22	52	0	0	0	21	0	0	0	0	0	52	0	19	19
8:15 AM	0	0	0	44	18	17	0	0	0	17	27	0	0	0	18	0	0	0	0	0	27	0	16	16
8:30 AM	0	0	1	52	23	23	0	0	0	24	28	0	0	0	25	0	0	0	0	0	28	0	25	25
8:45 AM	0	0	1	50	18	18	0	0	1	19	27	0	0	0	19	0	0	0	0	0	28	0	22	22
Hourly Total	0	0	2	216	79	78	0	0	1	82	134	0	0	0	83	0	0	0	0	0	135	0	82	82
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	10	71	41	41	0	0	0	52	34	0	0	0	51	0	0	0	0	0	34	0	47	38
4:15 PM	0	0	8	101	50	50	0	0	0	58	39	0	0	0	58	0	0	0	0	0	39	0	69	61
4:30 PM	0	0	5	93	56	55	0	0	0	59	42	0	0	0	61	0	0	0	0	0	42	0	57	52
4:45 PM	0	0	8	84	63	64	0	0	0	73	38	0	0	0	71	0	0	0	0	0	38	0	51	43
Hourly Total	0	0	31	349	210	210	0	0	0	242	153	0	0	0	241	0	0	0	0	0	153	0	224	194
5:00 PM	0	0	7	70	61	60	0	0	1	67	33	0	0	0	68	0	0	0	0	0	34	0	45	38
5:15 PM	0	0	8	82	38	38	0	0	0	46	24	0	0	0	46	0	0	0	0	0	24	0	66	58
5:30 PM	0	0	4	78	33	33	0	0	0	37	23	0	0	0	37	0	0	0	0	0	23	0	60	56
5:45 PM	0	0	3	81	25	25	0	0	0	28	22	0	0	0	28	0	0	0	0	0	22	0	61	58
Hourly Total	0	0	22	311	157	156	0	0	1	178	102	0	0	0	179	0	0	0	0	0	103	0	232	210
Grand Total	0	0	62	1107	571	568	0	0	2	633	576	0	0	0	635	0	0	0	0	0	578	0	598	539
Approach %	-	-	2.7	48.0	24.7	24.6	-	-	0.2	52.3	47.6	0.0	-	-	100.0	0.0	0.0	0.0	-	-	33.7	0.0	34.9	31.4
Total %	-	-	1.1	18.9	9.7	9.7	-	-	0.0	10.8	9.8	0.0	-	-	10.8	0.0	0.0	0.0	-	-	9.8	0.0	10.2	9.2
Lights	-	-	60	1049	556	555	-	-	2	619	545	0	-	-	618	0	0	0	-	-	547	0	576	518
% Lights	-	-	96.8	94.8	97.4	97.7	-	-	100.0	97.8	94.6	-	-	-	97.3	-	-	-	-	-	94.6	-	96.3	96.1
Buses	-	-	0	37	6	6	-	-	0	6	21	0	-	-	6	0	0	0	-	-	21	0	14	14
% Buses	-	-	0.0	3.3	1.1	1.1	-	-	0.0	0.9	3.6	-	-	-	0.9	-	-	-	-	-	3.6	-	2.3	2.6
Trucks	-	-	2	21	9	7	-	-	0	8	10	0	-	-	11	0	0	0	-	-	10	0	8	7
% Trucks	-	-	3.2	1.9	1.6	1.2	-	-	0.0	1.3	1.7	-	-	-	1.7	-	-	-	-	-	1.7	-	1.3	1.3
Bicycles on Road	-	-	0	0	0	0	-	-	0	0	0	0	-	-	0	0	0	0	-	-	0	0	0	0
% Bicycles on Road	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	-	0.0	-	-	-	-	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Pedestrians	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
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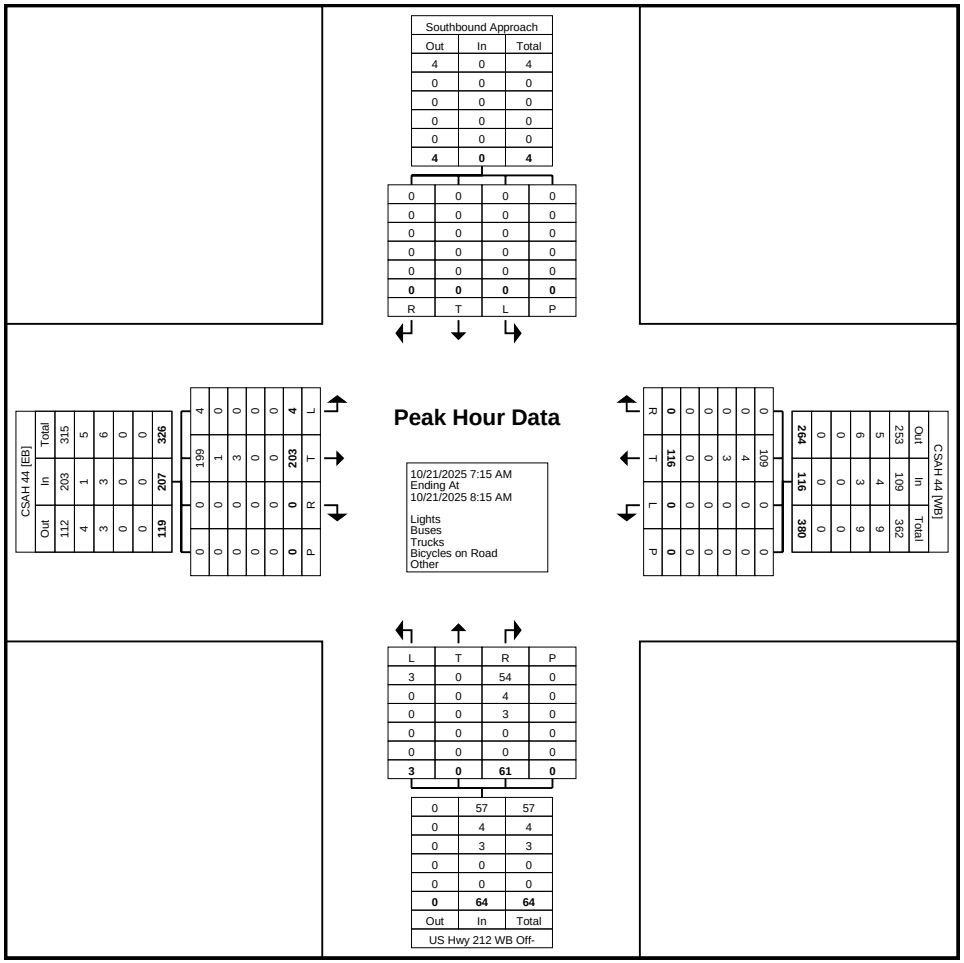
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					US Hwy 212 WB Off-Ramp Northbound					Southbound Approach Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	43	0	0	43	0	44	0	0	44	1	0	8	0	9	0	0	0	0	0	96
7:30 AM	2	54	0	0	56	0	28	0	0	28	0	0	11	0	11	0	0	0	0	0	95
7:45 AM	1	55	0	0	56	0	24	0	0	24	2	0	23	0	25	0	0	0	0	0	105
8:00 AM	1	51	0	0	52	0	20	0	0	20	0	0	19	0	19	0	0	0	0	0	91
Total	4	203	0	0	207	0	116	0	0	116	3	0	61	0	64	0	0	0	0	0	387
Approach %	1.9	98.1	0.0	-	-	0.0	100.0	0.0	-	-	4.7	0.0	95.3	-	-	0.0	0.0	0.0	-	-	-
Total %	1.0	52.5	0.0	-	53.5	0.0	30.0	0.0	-	30.0	0.8	0.0	15.8	-	16.5	0.0	0.0	0.0	-	0.0	-
PHF	0.500	0.923	0.000	-	0.924	0.000	0.659	0.000	-	0.659	0.375	0.000	0.663	-	0.640	0.000	0.000	0.000	-	0.000	0.921
Lights	4	199	0	-	203	0	109	0	-	109	3	0	54	-	57	0	0	0	-	0	369
% Lights	100.0	98.0	-	-	98.1	-	94.0	-	-	94.0	100.0	-	88.5	-	89.1	-	-	-	-	-	95.3
Buses	0	1	0	-	1	0	4	0	-	4	0	0	4	-	4	0	0	0	-	0	9
% Buses	0.0	0.5	-	-	0.5	-	3.4	-	-	3.4	0.0	-	6.6	-	6.3	-	-	-	-	-	2.3
Trucks	0	3	0	-	3	0	3	0	-	3	0	0	3	-	3	0	0	0	-	0	9
% Trucks	0.0	1.5	-	-	1.4	-	2.6	-	-	2.6	0.0	-	4.9	-	4.7	-	-	-	-	-	2.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

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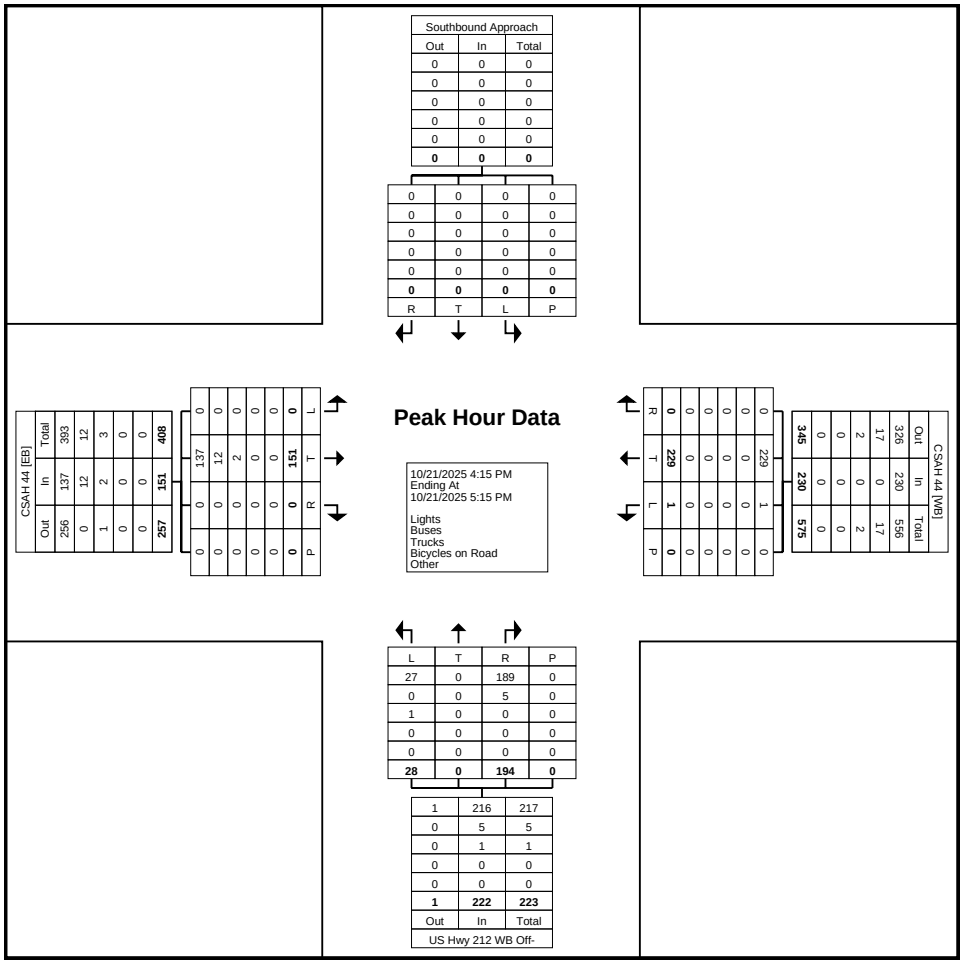
Turning Movement Peak Hour Data (4:15 PM)

Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					US Hwy 212 WB Off-Ramp Northbound					Southbound Approach Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	0	39	0	0	39	0	50	0	0	50	8	0	61	0	69	0	0	0	0	0	158
4:30 PM	0	41	0	0	41	0	55	0	0	55	5	0	52	0	57	0	0	0	0	0	153
4:45 PM	0	39	0	0	39	0	64	0	0	64	8	0	43	0	51	0	0	0	0	0	154
5:00 PM	0	32	0	0	32	1	60	0	0	61	7	0	38	0	45	0	0	0	0	0	138
Total	0	151	0	0	151	1	229	0	0	230	28	0	194	0	222	0	0	0	0	0	603
Approach %	0.0	100.0	0.0	-	-	0.4	99.6	0.0	-	-	12.6	0.0	87.4	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	25.0	0.0	-	25.0	0.2	38.0	0.0	-	38.1	4.6	0.0	32.2	-	36.8	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.921	0.000	-	0.921	0.250	0.895	0.000	-	0.898	0.875	0.000	0.795	-	0.804	0.000	0.000	0.000	-	0.000	0.954
Lights	0	137	0	-	137	1	229	0	-	230	27	0	189	-	216	0	0	0	-	0	583
% Lights	-	90.7	-	-	90.7	100.0	100.0	-	-	100.0	96.4	-	97.4	-	97.3	-	-	-	-	-	96.7
Buses	0	12	0	-	12	0	0	0	-	0	0	0	5	-	5	0	0	0	-	0	17
% Buses	-	7.9	-	-	7.9	0.0	0.0	-	-	0.0	0.0	-	2.6	-	2.3	-	-	-	-	-	2.8
Trucks	0	2	0	-	2	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	3
% Trucks	-	1.3	-	-	1.3	0.0	0.0	-	-	0.0	3.6	-	0.0	-	0.5	-	-	-	-	-	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	-	-	-	-	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 44 (Big Woods Boulevard) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 9



Turning Movement Peak Hour Data Plot (4:15 PM)

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025

Turning Movement Data

Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	1	2	0	0	3	10
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
12:30 AM	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	0	1	0	0	1	4
12:45 AM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	1	0	0	1	3
Hourly Total	0	0	0	0	0	1	0	2	0	3	1	10	0	0	11	1	4	0	0	5	19
1:00 AM	0	1	0	0	1	1	0	1	0	2	1	1	0	0	2	0	1	0	0	1	6
1:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	4
Hourly Total	0	2	0	0	2	1	0	1	0	2	1	1	0	0	2	2	4	0	0	6	12
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
2:30 AM	0	0	0	0	0	0	1	0	0	1	0	1	2	0	3	0	0	0	0	0	4
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	0	0	0	0	1	0	0	1	0	1	2	0	3	1	0	0	0	1	5
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	3
3:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	4
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Hourly Total	0	2	0	0	2	1	0	0	0	1	0	0	0	0	0	3	3	0	0	6	9
4:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	1	1	0	0	2	4
4:15 AM	0	0	0	0	0	1	0	2	0	3	0	1	0	0	1	1	0	0	0	1	5
4:30 AM	0	1	0	0	1	0	0	2	0	2	0	2	1	0	3	0	2	0	0	2	8
4:45 AM	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	1	4	0	0	5	9
Hourly Total	0	2	1	0	3	1	1	4	0	6	0	6	1	0	7	3	7	0	0	10	26
5:00 AM	0	4	1	0	5	0	0	2	0	2	0	2	0	0	2	2	2	0	0	4	13
5:15 AM	0	3	2	0	5	0	0	4	0	4	0	3	0	0	3	1	10	0	0	11	23
5:30 AM	1	8	1	0	10	0	1	4	0	5	3	11	1	0	15	12	10	0	0	22	52
5:45 AM	0	0	1	0	1	0	0	4	0	4	1	9	0	0	10	12	8	0	0	20	35
Hourly Total	1	15	5	0	21	0	1	14	0	15	4	25	1	0	30	27	30	0	0	57	123
6:00 AM	0	7	1	0	8	1	0	6	0	7	1	10	0	0	11	9	14	0	0	23	49
6:15 AM	1	7	2	0	10	0	3	4	0	7	1	23	1	0	25	11	29	0	0	40	82
6:30 AM	0	8	4	0	12	4	5	19	0	28	1	21	1	0	23	14	36	0	0	50	113
6:45 AM	0	6	4	0	10	5	7	17	0	29	2	34	2	0	38	19	31	0	0	50	127
Hourly Total	1	28	11	0	40	10	15	46	0	71	5	88	4	0	97	53	110	0	0	163	371
7:00 AM	0	7	3	0	10	4	7	16	0	27	3	33	4	0	40	21	26	0	0	47	124

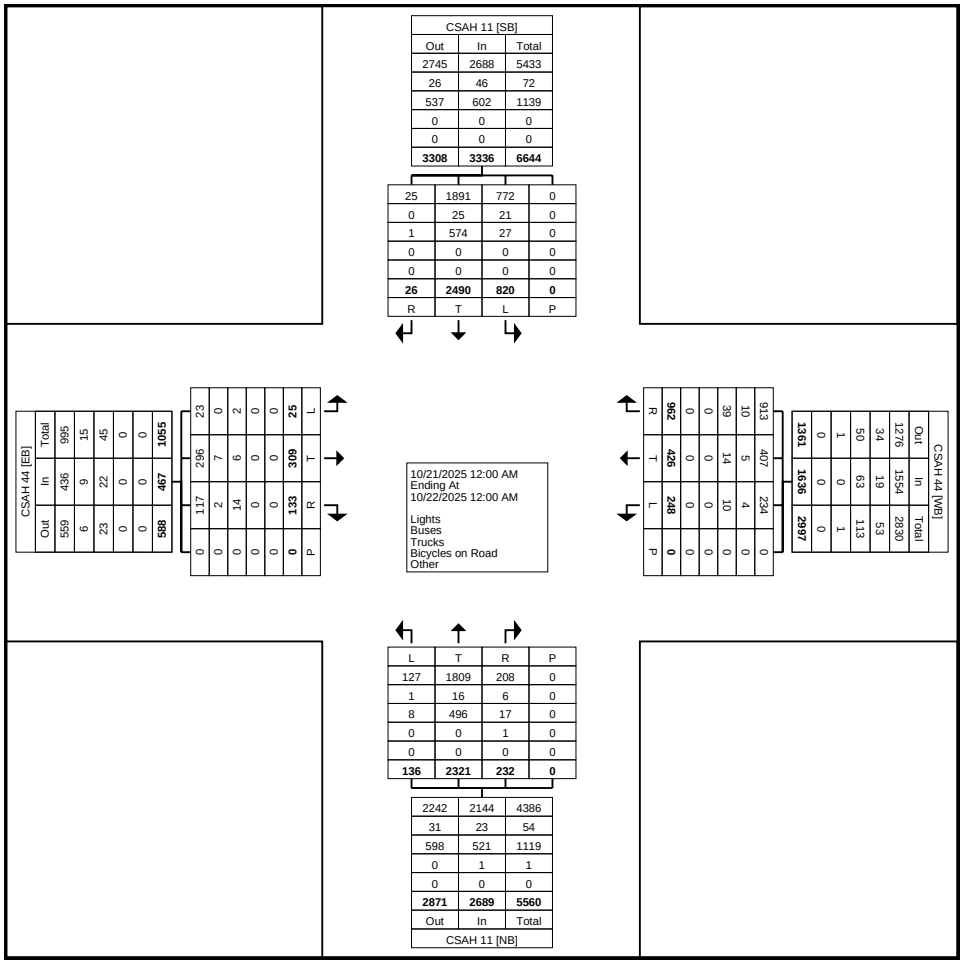
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7:30 AM	0	9	9	0	18	11	4	17	0	32	1	64	5	0	70	44	29	0	0	73	193
7:45 AM	0	11	4	0	15	6	9	13	0	28	7	41	5	0	53	39	44	0	0	83	179
Hourly Total	3	34	21	0	58	40	30	60	0	130	13	197	15	0	225	134	143	0	0	277	690
8:00 AM	0	14	2	0	16	5	3	13	0	21	1	29	4	0	34	38	37	2	0	77	148
8:15 AM	0	9	0	0	9	3	1	13	0	17	0	34	1	0	35	18	46	0	0	64	125
8:30 AM	0	4	4	0	8	1	3	18	0	22	2	46	2	0	50	22	37	0	0	59	139
8:45 AM	0	8	2	0	10	4	2	12	0	18	0	28	4	0	32	14	50	1	0	65	125
Hourly Total	0	35	8	0	43	13	9	56	0	78	3	137	11	0	151	92	170	3	0	265	537
9:00 AM	0	5	2	0	7	5	5	23	0	33	3	33	6	0	42	14	29	1	0	44	126
9:15 AM	0	5	0	0	5	6	6	13	0	25	1	36	0	0	37	11	39	0	0	50	117
9:30 AM	1	8	1	0	10	0	4	12	0	16	2	27	1	0	30	13	46	1	0	60	116
9:45 AM	0	3	3	0	6	3	6	16	0	25	3	41	4	0	48	12	35	0	0	47	126
Hourly Total	1	21	6	0	28	14	21	64	0	99	9	137	11	0	157	50	149	2	0	201	485
10:00 AM	0	2	3	0	5	2	5	8	0	15	0	36	3	0	39	4	34	0	0	38	97
10:15 AM	1	5	0	0	6	2	6	9	0	17	1	40	2	0	43	3	41	0	0	44	110
10:30 AM	0	5	3	0	8	2	2	13	0	17	0	25	2	0	27	7	40	0	0	47	99
10:45 AM	0	3	2	0	5	0	12	8	0	20	5	33	1	0	39	8	52	0	0	60	124
Hourly Total	1	15	8	0	24	6	25	38	0	69	6	134	8	0	148	22	167	0	0	189	430
11:00 AM	0	5	0	0	5	1	2	14	0	17	3	35	5	0	43	11	37	1	0	49	114
11:15 AM	0	2	1	0	3	4	1	11	0	16	0	35	3	0	38	8	41	0	0	49	106
11:30 AM	1	3	2	0	6	1	4	14	0	19	0	33	5	0	38	5	37	1	0	43	106
11:45 AM	1	5	4	0	10	4	3	8	0	15	0	37	2	0	39	5	28	1	0	34	98
Hourly Total	2	15	7	0	24	10	10	47	0	67	3	140	15	0	158	29	143	3	0	175	424
12:00 PM	0	2	0	0	2	5	3	7	0	15	2	48	2	0	52	4	50	0	0	54	123
12:15 PM	1	5	0	0	6	7	2	8	0	17	0	27	0	0	27	13	43	2	0	58	108
12:30 PM	0	2	0	0	2	4	5	10	0	19	2	48	3	0	53	8	46	0	0	54	128
12:45 PM	1	3	3	0	7	5	10	12	0	27	2	39	3	0	44	7	41	1	0	49	127
Hourly Total	2	12	3	0	17	21	20	37	0	78	6	162	8	0	176	32	180	3	0	215	486
1:00 PM	0	4	2	0	6	1	13	6	0	20	3	40	0	0	43	9	59	1	0	69	138
1:15 PM	0	6	0	0	6	0	3	10	0	13	0	35	2	0	37	14	44	0	0	58	114
1:30 PM	0	3	2	0	5	2	9	16	0	27	1	46	1	0	48	10	44	1	0	55	135
1:45 PM	1	7	0	0	8	2	8	15	0	25	0	38	3	0	41	10	40	1	0	51	125
Hourly Total	1	20	4	0	25	5	33	47	0	85	4	159	6	0	169	43	187	3	0	233	512
2:00 PM	0	3	1	0	4	2	6	6	0	14	1	42	2	0	45	12	52	2	0	66	129
2:15 PM	0	3	1	0	4	2	5	25	0	32	0	49	5	0	54	12	38	1	0	51	141
2:30 PM	0	3	2	0	5	2	4	26	0	32	1	48	4	0	53	10	44	0	0	54	144
2:45 PM	1	4	1	0	6	9	8	15	0	32	6	57	2	0	65	17	57	0	0	74	177
Hourly Total	1	13	5	0	19	15	23	72	0	110	8	196	13	0	217	51	191	3	0	245	591
3:00 PM	0	4	5	0	9	15	5	21	0	41	4	47	3	0	54	17	47	1	0	65	169
3:15 PM	0	3	2	0	5	8	8	26	0	42	6	51	17	0	74	7	59	0	0	66	187
3:30 PM	2	3	2	0	7	6	15	26	0	47	2	42	7	0	51	11	61	1	0	73	178
3:45 PM	0	2	5	0	7	4	12	29	0	45	3	58	9	0	70	19	62	0	0	81	203
Hourly Total	2	12	14	0	28	33	40	102	0	175	15	198	36	0	249	54	229	2	0	285	737
4:00 PM	0	9	4	0	13	9	17	30	0	56	7	57	8	0	72	18	68	0	0	86	227
4:15 PM	1	5	1	0	7	7	23	31	0	61	6	58	12	0	76	23	67	1	0	91	235
4:30 PM	1	11	4	0	16	10	16	36	0	62	4	65	5	0	74	20	67	0	0	87	239
4:45 PM	0	4	5	0	9	9	27	38	0	74	3	56	13	0	72	23	51	0	0	74	229
Hourly Total	2	29	14	0	45	35	83	135	0	253	20	236	38	0	294	84	253	1	0	338	930
5:00 PM	0	8	2	0	10	4	19	33	0	56	3	60	5	0	68	15	51	0	0	66	200
5:15 PM	1	2	4	0	7	3	18	25	0	46	2	40	6	0	48	16	54	1	0	71	172
5:30 PM	1	3	1	0	5	5	16	18	0	39	1	52	3	0	56	11	39	0	0	50	150

5:45 PM	0	6	4	0	10	3	9	20	0	32	4	38	9	0	51	10	40	0	0	50	143
Hourly Total	2	19	11	0	32	15	62	96	0	173	10	190	23	0	223	52	184	1	0	237	665
6:00 PM	0	5	2	0	7	3	5	16	0	24	0	29	3	0	32	2	33	0	0	35	98
6:15 PM	1	6	1	0	8	4	8	22	0	34	4	33	5	0	42	11	37	0	0	48	132
6:30 PM	0	1	2	0	3	3	9	9	0	21	5	24	3	0	32	7	26	1	0	34	90
6:45 PM	0	3	1	0	4	2	8	9	0	19	3	21	3	0	27	6	12	0	0	18	68
Hourly Total	1	15	6	0	22	12	30	56	0	98	12	107	14	0	133	26	108	1	0	135	388
7:00 PM	1	1	2	0	4	2	2	7	0	11	2	16	3	0	21	6	24	0	0	30	66
7:15 PM	0	1	0	0	1	3	1	10	0	14	0	8	1	0	9	3	18	0	0	21	45
7:30 PM	1	2	1	0	4	2	0	8	0	10	4	20	1	0	25	3	18	0	0	21	60
7:45 PM	0	3	1	0	4	0	2	5	0	7	0	12	1	0	13	5	23	0	0	28	52
Hourly Total	2	7	4	0	13	7	5	30	0	42	6	56	6	0	68	17	83	0	0	100	223
8:00 PM	0	1	0	0	1	0	2	9	0	11	3	26	5	0	34	1	26	1	0	28	74
8:15 PM	0	1	0	0	1	1	0	9	0	10	1	13	1	0	15	11	21	1	0	33	59
8:30 PM	0	1	0	0	1	1	2	3	0	6	0	9	2	0	11	4	18	1	0	23	41
8:45 PM	0	2	1	0	3	2	3	4	0	9	3	13	3	0	19	10	11	0	0	21	52
Hourly Total	0	5	1	0	6	4	7	25	0	36	7	61	11	0	79	26	76	3	0	105	226
9:00 PM	1	0	0	0	1	0	4	4	0	8	0	7	2	0	9	1	9	0	0	10	28
9:15 PM	1	0	2	0	3	0	1	7	0	8	0	12	2	0	14	2	15	1	0	18	43
9:30 PM	1	1	0	0	2	1	0	1	0	2	1	15	0	0	16	2	6	0	0	8	28
9:45 PM	0	4	0	0	4	0	1	4	0	5	0	12	0	0	12	3	6	0	0	9	30
Hourly Total	3	5	2	0	10	1	6	16	0	23	1	46	4	0	51	8	36	1	0	45	129
10:00 PM	0	0	1	0	1	1	2	3	0	6	0	13	1	0	14	0	6	0	0	6	27
10:15 PM	0	1	0	0	1	0	1	4	0	5	0	5	1	0	6	1	12	0	0	13	25
10:30 PM	0	0	1	0	1	1	0	1	0	2	2	7	2	0	11	6	2	0	0	8	22
10:45 PM	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	4	0	0	4	6
Hourly Total	0	1	2	0	3	3	3	9	0	15	2	25	4	0	31	7	24	0	0	31	80
11:00 PM	0	1	0	0	1	0	0	2	0	2	0	2	1	0	3	0	1	0	0	1	7
11:15 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	1	2	0	0	3	6
11:30 PM	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	0	5	0	0	5	9
11:45 PM	0	1	0	0	1	0	0	2	0	2	0	2	0	0	2	2	1	0	0	3	8
Hourly Total	0	2	0	0	2	0	1	5	0	6	0	9	1	0	10	3	9	0	0	12	30
Grand Total	25	309	133	0	467	248	426	962	0	1636	136	2321	232	0	2689	820	2490	26	0	3336	8128
Approach %	5.4	66.2	28.5	-	-	15.2	26.0	58.8	-	-	5.1	86.3	8.6	-	-	24.6	74.6	0.8	-	-	-
Total %	0.3	3.8	1.6	-	5.7	3.1	5.2	11.8	-	20.1	1.7	28.6	2.9	-	33.1	10.1	30.6	0.3	-	41.0	-
Lights	23	296	117	-	436	234	407	913	-	1554	127	1809	208	-	2144	772	1891	25	-	2688	6822
% Lights	92.0	95.8	88.0	-	93.4	94.4	95.5	94.9	-	95.0	93.4	77.9	89.7	-	79.7	94.1	75.9	96.2	-	80.6	83.9
Buses	0	7	2	-	9	4	5	10	-	19	1	16	6	-	23	21	25	0	-	46	97
% Buses	0.0	2.3	1.5	-	1.9	1.6	1.2	1.0	-	1.2	0.7	0.7	2.6	-	0.9	2.6	1.0	0.0	-	1.4	1.2
Trucks	2	6	14	-	22	10	14	39	-	63	8	496	17	-	521	27	574	1	-	602	1208
% Trucks	8.0	1.9	10.5	-	4.7	4.0	3.3	4.1	-	3.9	5.9	21.4	7.3	-	19.4	3.3	23.1	3.8	-	18.0	14.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025
Page No: 4



Turning Movement Data Plot

Kimley-Horn
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025

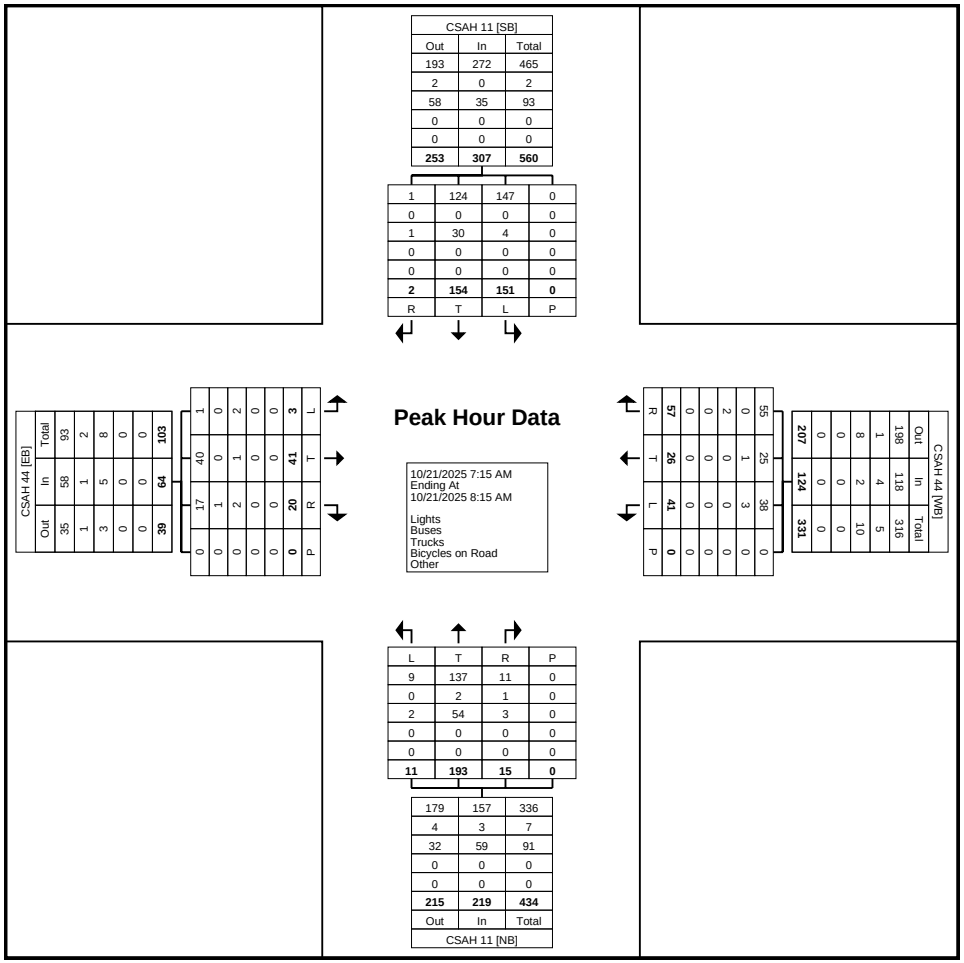
Turning Movement Peak Hour Data (7:15 AM)

Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	3	7	5	0	15	19	10	14	0	43	2	59	1	0	62	30	44	0	0	74	194
7:30 AM	0	9	9	0	18	11	4	17	0	32	1	64	5	0	70	44	29	0	0	73	193
7:45 AM	0	11	4	0	15	6	9	13	0	28	7	41	5	0	53	39	44	0	0	83	179
8:00 AM	0	14	2	0	16	5	3	13	0	21	1	29	4	0	34	38	37	2	0	77	148
Total	3	41	20	0	64	41	26	57	0	124	11	193	15	0	219	151	154	2	0	307	714
Approach %	4.7	64.1	31.3	-	-	33.1	21.0	46.0	-	-	5.0	88.1	6.8	-	-	49.2	50.2	0.7	-	-	-
Total %	0.4	5.7	2.8	-	9.0	5.7	3.6	8.0	-	17.4	1.5	27.0	2.1	-	30.7	21.1	21.6	0.3	-	43.0	-
PHF	0.250	0.732	0.556	-	0.889	0.539	0.650	0.838	-	0.721	0.393	0.754	0.750	-	0.782	0.858	0.875	0.250	-	0.925	0.920
Lights	1	40	17	-	58	38	25	55	-	118	9	137	11	-	157	147	124	1	-	272	605
% Lights	33.3	97.6	85.0	-	90.6	92.7	96.2	96.5	-	95.2	81.8	71.0	73.3	-	71.7	97.4	80.5	50.0	-	88.6	84.7
Buses	0	0	1	-	1	3	1	0	-	4	0	2	1	-	3	0	0	0	-	0	8
% Buses	0.0	0.0	5.0	-	1.6	7.3	3.8	0.0	-	3.2	0.0	1.0	6.7	-	1.4	0.0	0.0	0.0	-	0.0	1.1
Trucks	2	1	2	-	5	0	0	2	-	2	2	54	3	-	59	4	30	1	-	35	101
% Trucks	66.7	2.4	10.0	-	7.8	0.0	0.0	3.5	-	1.6	18.2	28.0	20.0	-	26.9	2.6	19.5	50.0	-	11.4	14.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

Kimley-Horn
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Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025

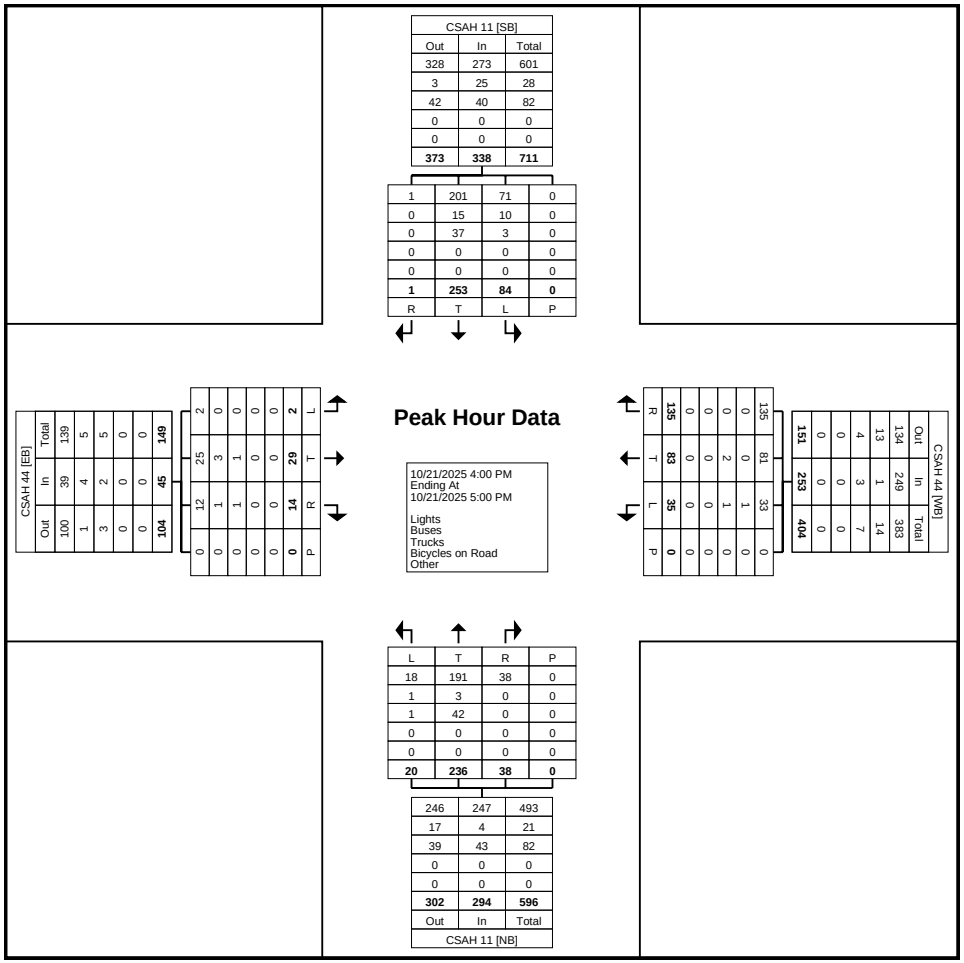
Turning Movement Peak Hour Data (4:00 PM)

Start Time	CSAH 44 Eastbound					CSAH 44 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	9	4	0	13	9	17	30	0	56	7	57	8	0	72	18	68	0	0	86	227
4:15 PM	1	5	1	0	7	7	23	31	0	61	6	58	12	0	76	23	67	1	0	91	235
4:30 PM	1	11	4	0	16	10	16	36	0	62	4	65	5	0	74	20	67	0	0	87	239
4:45 PM	0	4	5	0	9	9	27	38	0	74	3	56	13	0	72	23	51	0	0	74	229
Total	2	29	14	0	45	35	83	135	0	253	20	236	38	0	294	84	253	1	0	338	930
Approach %	4.4	64.4	31.1	-	-	13.8	32.8	53.4	-	-	6.8	80.3	12.9	-	-	24.9	74.9	0.3	-	-	-
Total %	0.2	3.1	1.5	-	4.8	3.8	8.9	14.5	-	27.2	2.2	25.4	4.1	-	31.6	9.0	27.2	0.1	-	36.3	-
PHF	0.500	0.659	0.700	-	0.703	0.875	0.769	0.888	-	0.855	0.714	0.908	0.731	-	0.967	0.913	0.930	0.250	-	0.929	0.973
Lights	2	25	12	-	39	33	81	135	-	249	18	191	38	-	247	71	201	1	-	273	808
% Lights	100.0	86.2	85.7	-	86.7	94.3	97.6	100.0	-	98.4	90.0	80.9	100.0	-	84.0	84.5	79.4	100.0	-	80.8	86.9
Buses	0	3	1	-	4	1	0	0	-	1	1	3	0	-	4	10	15	0	-	25	34
% Buses	0.0	10.3	7.1	-	8.9	2.9	0.0	0.0	-	0.4	5.0	1.3	0.0	-	1.4	11.9	5.9	0.0	-	7.4	3.7
Trucks	0	1	1	-	2	1	2	0	-	3	1	42	0	-	43	3	37	0	-	40	88
% Trucks	0.0	3.4	7.1	-	4.4	2.9	2.4	0.0	-	1.2	5.0	17.8	0.0	-	14.6	3.6	14.6	0.0	-	11.8	9.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 44 (Big Woods Boulevard)
Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (4:00 PM)

Kimley-Horn
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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
Site Code:
Start Date: 10/21/2025
Page No: 1

Turning Movement Data

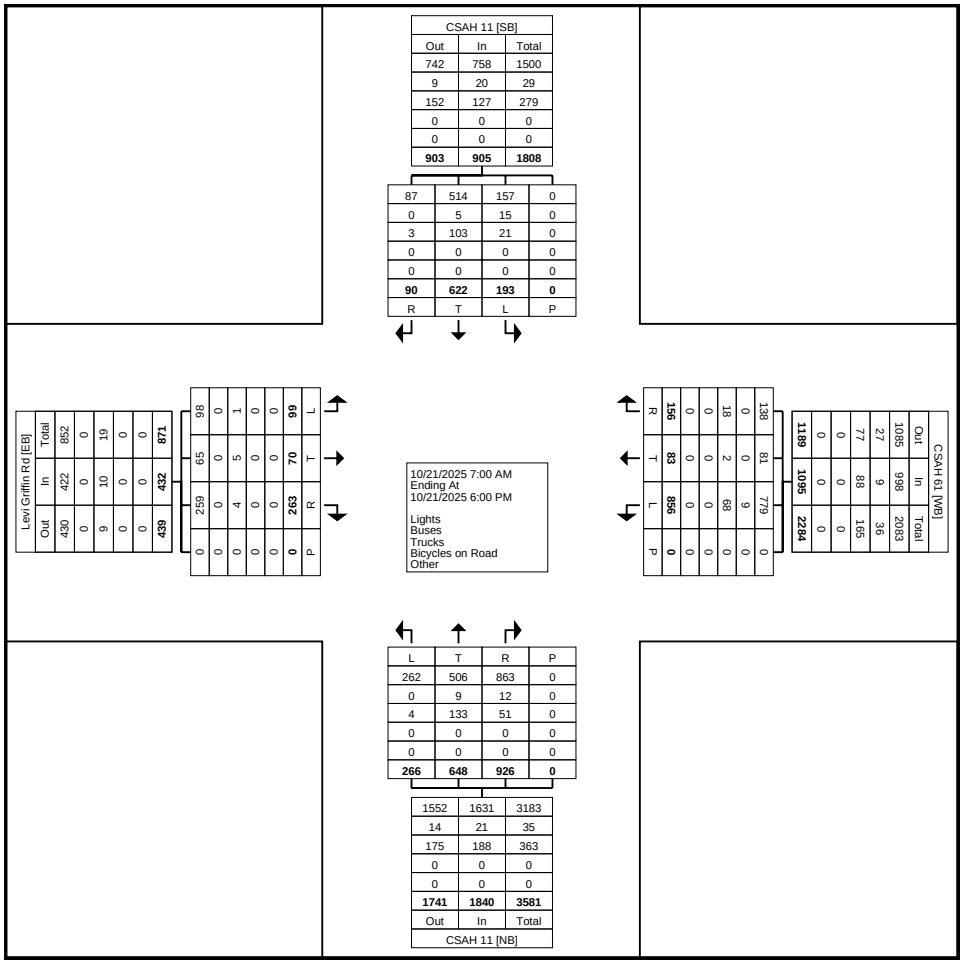
Start Time	Levi Griffin Rd Eastbound					CSAH 61 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	2	0	0	2	34	1	9	0	44	6	47	52	0	105	5	22	2	0	29	180
7:15 AM	0	0	3	0	3	46	2	9	0	57	6	56	89	0	151	18	49	1	0	68	279
7:30 AM	1	2	9	0	12	61	3	11	0	75	9	52	112	0	173	9	32	6	0	47	307
7:45 AM	1	4	8	0	13	35	5	8	0	48	11	37	84	0	132	13	41	0	0	54	247
Hourly Total	2	8	20	0	30	176	11	37	0	224	32	192	337	0	561	45	144	9	0	198	1013
8:00 AM	1	1	6	0	8	44	4	7	0	55	16	29	62	0	107	9	31	3	0	43	213
8:15 AM	2	2	6	0	10	30	4	7	0	41	9	31	50	0	90	7	36	7	0	50	191
8:30 AM	4	3	7	0	14	48	7	12	0	67	7	25	49	0	81	11	34	2	0	47	209
8:45 AM	1	1	9	0	11	34	6	9	0	49	14	29	49	0	92	8	35	6	0	49	201
Hourly Total	8	7	28	0	43	156	21	35	0	212	46	114	210	0	370	35	136	18	0	189	814
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	14	7	36	0	57	62	8	9	0	79	29	52	44	0	125	19	48	9	0	76	337
4:15 PM	16	6	25	0	47	75	10	10	0	95	17	46	45	0	108	19	45	13	0	77	327
4:30 PM	11	12	20	0	43	75	12	11	0	98	29	55	48	0	132	24	53	8	0	85	358
4:45 PM	17	7	27	0	51	78	5	11	0	94	28	46	58	0	132	14	40	8	0	62	339
Hourly Total	58	32	108	0	198	290	35	41	0	366	103	199	195	0	497	76	186	38	0	300	1361
5:00 PM	9	9	38	0	56	60	5	9	0	74	22	47	53	0	122	10	35	10	0	55	307
5:15 PM	6	7	18	0	31	69	3	14	0	86	21	33	53	0	107	10	51	6	0	67	291
5:30 PM	7	4	31	0	42	55	5	11	0	71	22	30	41	0	93	7	36	3	0	46	252
5:45 PM	9	3	20	0	32	50	3	9	0	62	20	33	37	0	90	10	34	6	0	50	234
Hourly Total	31	23	107	0	161	234	16	43	0	293	85	143	184	0	412	37	156	25	0	218	1084
Grand Total	99	70	263	0	432	856	83	156	0	1095	266	648	926	0	1840	193	622	90	0	905	4272
Approach %	22.9	16.2	60.9	-	-	78.2	7.6	14.2	-	-	14.5	35.2	50.3	-	-	21.3	68.7	9.9	-	-	-
Total %	2.3	1.6	6.2	-	10.1	20.0	1.9	3.7	-	25.6	6.2	15.2	21.7	-	43.1	4.5	14.6	2.1	-	21.2	-
Lights	98	65	259	-	422	779	81	138	-	998	262	506	863	-	1631	157	514	87	-	758	3809
% Lights	99.0	92.9	98.5	-	97.7	91.0	97.6	88.5	-	91.1	98.5	78.1	93.2	-	88.6	81.3	82.6	96.7	-	83.8	89.2
Buses	0	0	0	-	0	9	0	0	-	9	0	9	12	-	21	15	5	0	-	20	50
% Buses	0.0	0.0	0.0	-	0.0	1.1	0.0	0.0	-	0.8	0.0	1.4	1.3	-	1.1	7.8	0.8	0.0	-	2.2	1.2
Trucks	1	5	4	-	10	68	2	18	-	88	4	133	51	-	188	21	103	3	-	127	413
% Trucks	1.0	7.1	1.5	-	2.3	7.9	2.4	11.5	-	8.0	1.5	20.5	5.5	-	10.2	10.9	16.6	3.3	-	14.0	9.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
Site Code:
Start Date: 10/21/2025



Turning Movement Data Plot

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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
Site Code:
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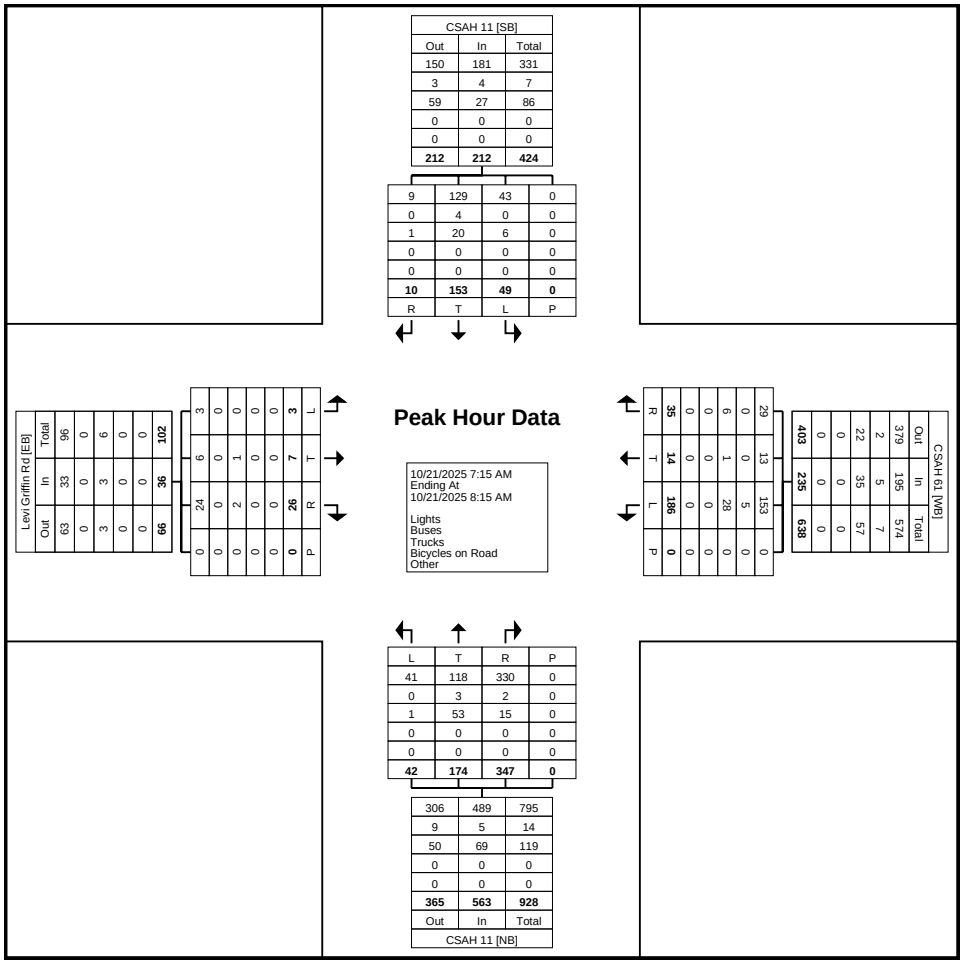
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Levi Griffin Rd Eastbound					CSAH 61 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	0	3	0	3	46	2	9	0	57	6	56	89	0	151	18	49	1	0	68	279
7:30 AM	1	2	9	0	12	61	3	11	0	75	9	52	112	0	173	9	32	6	0	47	307
7:45 AM	1	4	8	0	13	35	5	8	0	48	11	37	84	0	132	13	41	0	0	54	247
8:00 AM	1	1	6	0	8	44	4	7	0	55	16	29	62	0	107	9	31	3	0	43	213
Total	3	7	26	0	36	186	14	35	0	235	42	174	347	0	563	49	153	10	0	212	1046
Approach %	8.3	19.4	72.2	-	-	79.1	6.0	14.9	-	-	7.5	30.9	61.6	-	-	23.1	72.2	4.7	-	-	-
Total %	0.3	0.7	2.5	-	3.4	17.8	1.3	3.3	-	22.5	4.0	16.6	33.2	-	53.8	4.7	14.6	1.0	-	20.3	-
PHF	0.750	0.438	0.722	-	0.692	0.762	0.700	0.795	-	0.783	0.656	0.777	0.775	-	0.814	0.681	0.781	0.417	-	0.779	0.852
Lights	3	6	24	-	33	153	13	29	-	195	41	118	330	-	489	43	129	9	-	181	898
% Lights	100.0	85.7	92.3	-	91.7	82.3	92.9	82.9	-	83.0	97.6	67.8	95.1	-	86.9	87.8	84.3	90.0	-	85.4	85.9
Buses	0	0	0	-	0	5	0	0	-	5	0	3	2	-	5	0	4	0	-	4	14
% Buses	0.0	0.0	0.0	-	0.0	2.7	0.0	0.0	-	2.1	0.0	1.7	0.6	-	0.9	0.0	2.6	0.0	-	1.9	1.3
Trucks	0	1	2	-	3	28	1	6	-	35	1	53	15	-	69	6	20	1	-	27	134
% Trucks	0.0	14.3	7.7	-	8.3	15.1	7.1	17.1	-	14.9	2.4	30.5	4.3	-	12.3	12.2	13.1	10.0	-	12.7	12.8
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
Start Date: 10/21/2025



Turning Movement Peak Hour Data Plot (7:15 AM)

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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
Site Code:
Start Date: 10/21/2025

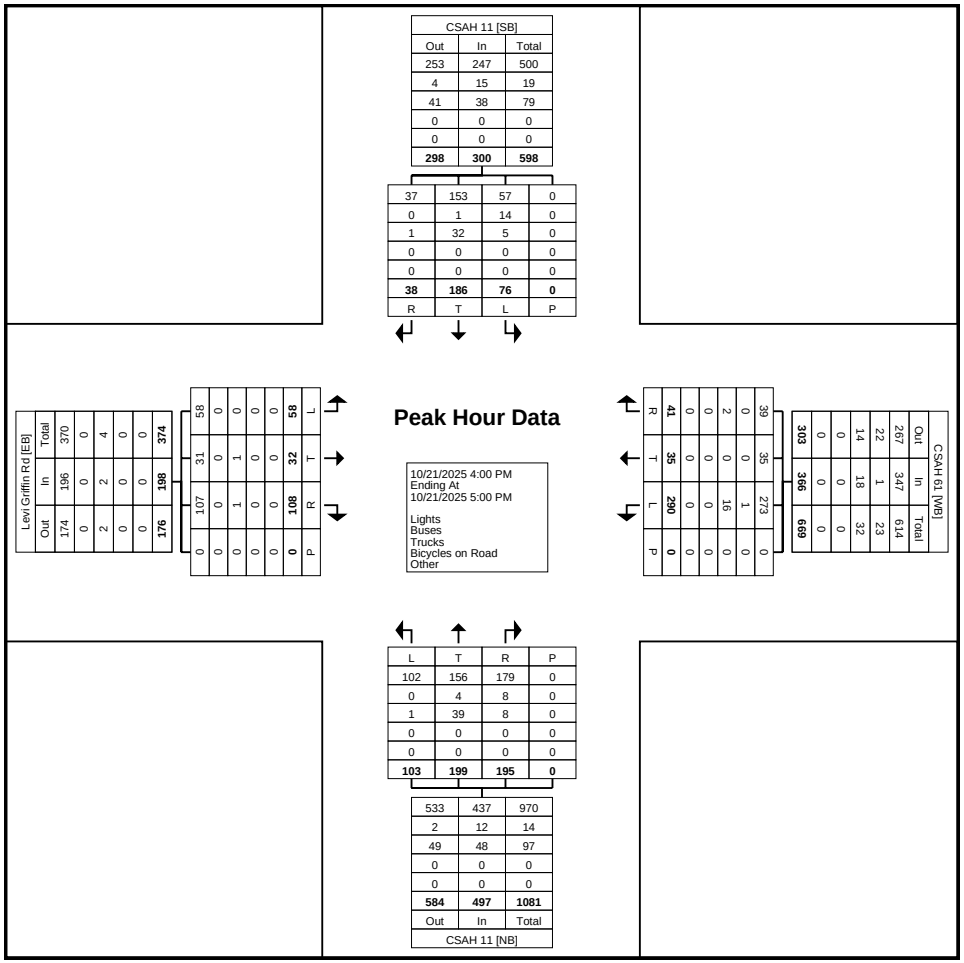
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Levi Griffin Rd Eastbound					CSAH 61 Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	14	7	36	0	57	62	8	9	0	79	29	52	44	0	125	19	48	9	0	76	337
4:15 PM	16	6	25	0	47	75	10	10	0	95	17	46	45	0	108	19	45	13	0	77	327
4:30 PM	11	12	20	0	43	75	12	11	0	98	29	55	48	0	132	24	53	8	0	85	358
4:45 PM	17	7	27	0	51	78	5	11	0	94	28	46	58	0	132	14	40	8	0	62	339
Total	58	32	108	0	198	290	35	41	0	366	103	199	195	0	497	76	186	38	0	300	1361
Approach %	29.3	16.2	54.5	-	-	79.2	9.6	11.2	-	-	20.7	40.0	39.2	-	-	25.3	62.0	12.7	-	-	-
Total %	4.3	2.4	7.9	-	14.5	21.3	2.6	3.0	-	26.9	7.6	14.6	14.3	-	36.5	5.6	13.7	2.8	-	22.0	-
PHF	0.853	0.667	0.750	-	0.868	0.929	0.729	0.932	-	0.934	0.888	0.905	0.841	-	0.941	0.792	0.877	0.731	-	0.882	0.950
Lights	58	31	107	-	196	273	35	39	-	347	102	156	179	-	437	57	153	37	-	247	1227
% Lights	100.0	96.9	99.1	-	99.0	94.1	100.0	95.1	-	94.8	99.0	78.4	91.8	-	87.9	75.0	82.3	97.4	-	82.3	90.2
Buses	0	0	0	-	0	1	0	0	-	1	0	4	8	-	12	14	1	0	-	15	28
% Buses	0.0	0.0	0.0	-	0.0	0.3	0.0	0.0	-	0.3	0.0	2.0	4.1	-	2.4	18.4	0.5	0.0	-	5.0	2.1
Trucks	0	1	1	-	2	16	0	2	-	18	1	39	8	-	48	5	32	1	-	38	106
% Trucks	0.0	3.1	0.9	-	1.0	5.5	0.0	4.9	-	4.9	1.0	19.6	4.1	-	9.7	6.6	17.2	2.6	-	12.7	7.8
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn
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Count Name: CSAH 11 (Johnathan Carver Parkway) & CSAH 61 (Chaska Boulevard)
Site Code:
Start Date: 10/21/2025
Page No: 7



Turning Movement Peak Hour Data Plot (4:00 PM)

Kimley-Horn
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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

Turning Movement Data

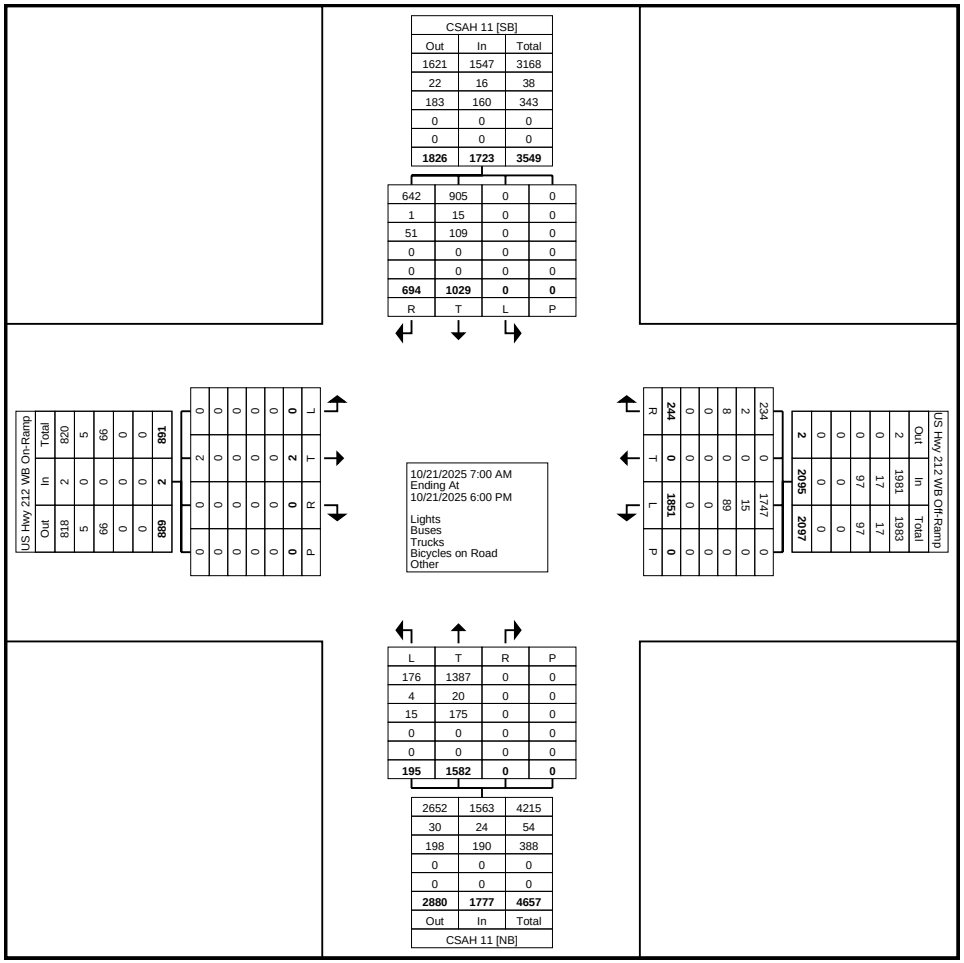
Start Time	US Hwy 212 WB On-Ramp Eastbound					US Hwy 212 WB Off-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	1	0	0	1	46	0	2	0	48	11	103	0	0	114	0	41	18	0	59	222
7:15 AM	0	0	0	0	0	53	0	4	0	57	8	147	0	0	155	0	56	25	0	81	293
7:30 AM	0	0	0	0	0	39	0	12	0	51	10	150	0	0	160	0	76	35	0	111	322
7:45 AM	0	0	0	0	0	61	0	5	0	66	11	130	0	0	141	0	52	31	0	83	290
Hourly Total	0	1	0	0	1	199	0	23	0	222	40	530	0	0	570	0	225	109	0	334	1127
8:00 AM	0	0	0	0	0	46	0	5	0	51	31	99	0	0	130	0	49	33	0	82	263
8:15 AM	0	0	0	0	0	50	0	4	0	54	13	86	0	0	99	0	41	27	0	68	221
8:30 AM	0	0	0	0	0	52	0	6	0	58	9	76	0	0	85	0	51	34	0	85	228
8:45 AM	0	0	0	0	0	41	0	8	0	49	6	83	0	0	89	0	49	30	0	79	217
Hourly Total	0	0	0	0	0	189	0	23	0	212	59	344	0	0	403	0	190	124	0	314	929
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	0	0	1	186	0	22	0	208	7	105	0	0	112	0	85	66	0	151	472
4:15 PM	0	0	0	0	0	196	0	22	0	218	15	92	0	0	107	0	78	65	0	143	468
4:30 PM	0	0	0	0	0	204	0	24	0	228	14	98	0	0	112	0	83	64	0	147	487
4:45 PM	0	0	0	0	0	177	0	25	0	202	14	105	0	0	119	0	86	60	0	146	467
Hourly Total	0	1	0	0	1	763	0	93	0	856	50	400	0	0	450	0	332	255	0	587	1894
5:00 PM	0	0	0	0	0	172	0	25	0	197	14	104	0	0	118	0	76	56	0	132	447
5:15 PM	0	0	0	0	0	188	0	29	0	217	9	65	0	0	74	0	75	57	0	132	423
5:30 PM	0	0	0	0	0	172	0	31	0	203	11	66	0	0	77	0	64	52	0	116	396
5:45 PM	0	0	0	0	0	168	0	20	0	188	12	73	0	0	85	0	67	41	0	108	381
Hourly Total	0	0	0	0	0	700	0	105	0	805	46	308	0	0	354	0	282	206	0	488	1647
Grand Total	0	2	0	0	2	1851	0	244	0	2095	195	1582	0	0	1777	0	1029	694	0	1723	5597
Approach %	0.0	100.0	0.0	-	-	88.4	0.0	11.6	-	-	11.0	89.0	0.0	-	-	0.0	59.7	40.3	-	-	-
Total %	0.0	0.0	0.0	-	0.0	33.1	0.0	4.4	-	37.4	3.5	28.3	0.0	-	31.7	0.0	18.4	12.4	-	30.8	-
Lights	0	2	0	-	2	1747	0	234	-	1981	176	1387	0	-	1563	0	905	642	-	1547	5093
% Lights	-	100.0	-	-	100.0	94.4	-	95.9	-	94.6	90.3	87.7	-	-	88.0	-	87.9	92.5	-	89.8	91.0
Buses	0	0	0	-	0	15	0	2	-	17	4	20	0	-	24	0	15	1	-	16	57
% Buses	-	0.0	-	-	0.0	0.8	-	0.8	-	0.8	2.1	1.3	-	-	1.4	-	1.5	0.1	-	0.9	1.0
Trucks	0	0	0	-	0	89	0	8	-	97	15	175	0	-	190	0	109	51	-	160	447
% Trucks	-	0.0	-	-	0.0	4.8	-	3.3	-	4.6	7.7	11.1	-	-	10.7	-	10.6	7.3	-	9.3	8.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 3



Turning Movement Data Plot

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

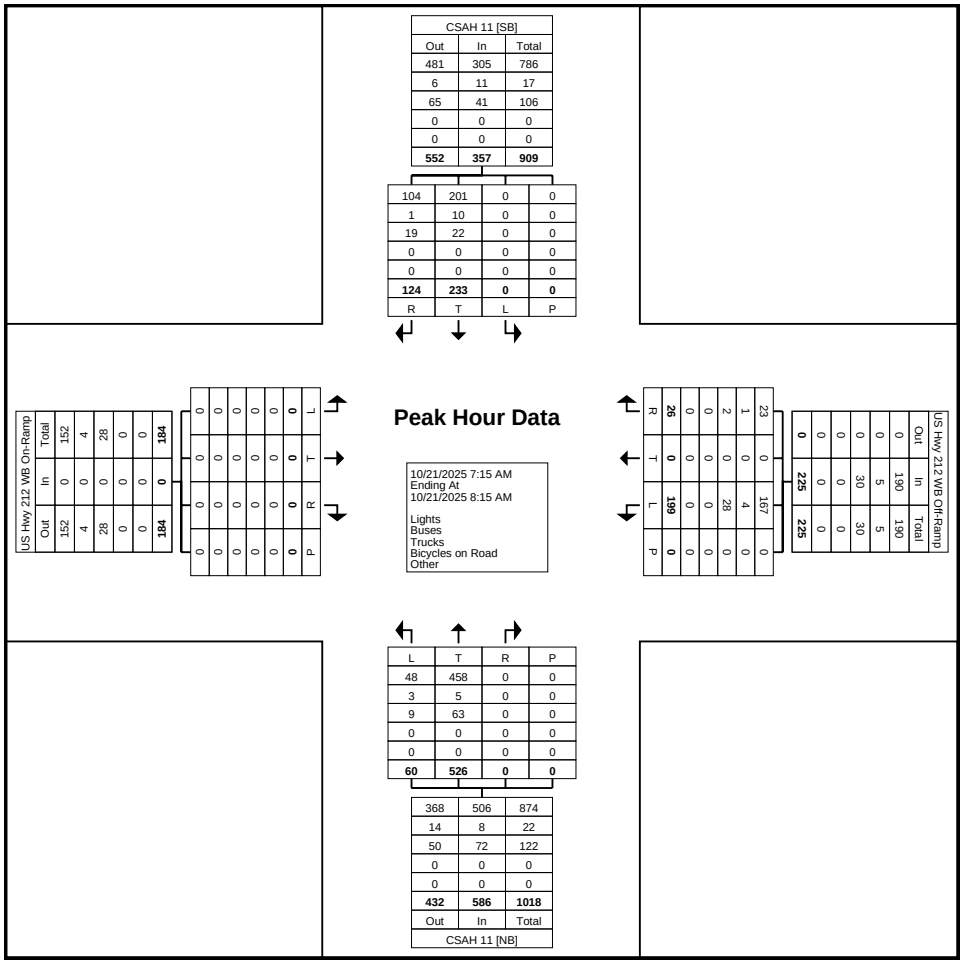
Turning Movement Peak Hour Data (7:15 AM)

Start Time	US Hwy 212 WB On-Ramp Eastbound					US Hwy 212 WB Off-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	0	0	0	0	53	0	4	0	57	8	147	0	0	155	0	56	25	0	81	293
7:30 AM	0	0	0	0	0	39	0	12	0	51	10	150	0	0	160	0	76	35	0	111	322
7:45 AM	0	0	0	0	0	61	0	5	0	66	11	130	0	0	141	0	52	31	0	83	290
8:00 AM	0	0	0	0	0	46	0	5	0	51	31	99	0	0	130	0	49	33	0	82	263
Total	0	0	0	0	0	199	0	26	0	225	60	526	0	0	586	0	233	124	0	357	1168
Approach %	0.0	0.0	0.0	-	-	88.4	0.0	11.6	-	-	10.2	89.8	0.0	-	-	0.0	65.3	34.7	-	-	-
Total %	0.0	0.0	0.0	-	0.0	17.0	0.0	2.2	-	19.3	5.1	45.0	0.0	-	50.2	0.0	19.9	10.6	-	30.6	-
PHF	0.000	0.000	0.000	-	0.000	0.816	0.000	0.542	-	0.852	0.484	0.877	0.000	-	0.916	0.000	0.766	0.886	-	0.804	0.907
Lights	0	0	0	-	0	167	0	23	-	190	48	458	0	-	506	0	201	104	-	305	1001
% Lights	-	-	-	-	-	83.9	-	88.5	-	84.4	80.0	87.1	-	-	86.3	-	86.3	83.9	-	85.4	85.7
Buses	0	0	0	-	0	4	0	1	-	5	3	5	0	-	8	0	10	1	-	11	24
% Buses	-	-	-	-	-	2.0	-	3.8	-	2.2	5.0	1.0	-	-	1.4	-	4.3	0.8	-	3.1	2.1
Trucks	0	0	0	-	0	28	0	2	-	30	9	63	0	-	72	0	22	19	-	41	143
% Trucks	-	-	-	-	-	14.1	-	7.7	-	13.3	15.0	12.0	-	-	12.3	-	9.4	15.3	-	11.5	12.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 5



Turning Movement Peak Hour Data Plot (7:15 AM)

Kimley-Horn
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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025

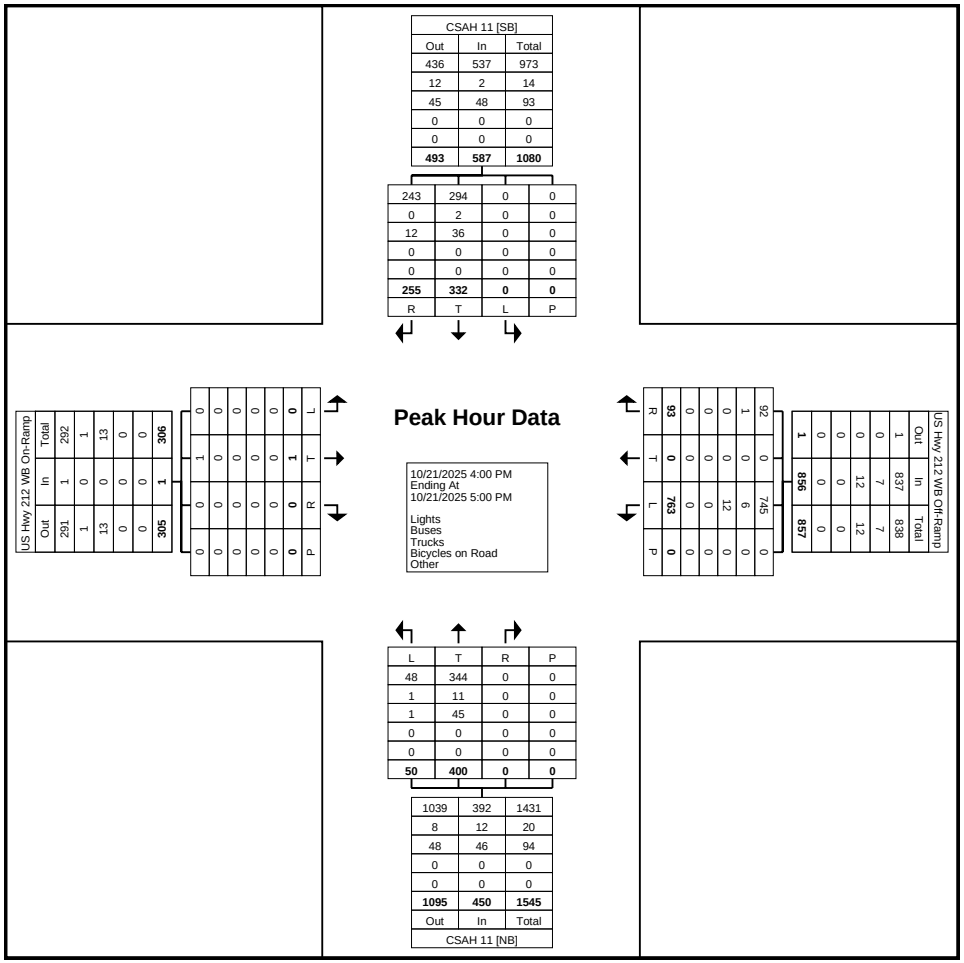
Turning Movement Peak Hour Data (4:00 PM)

Start Time	US Hwy 212 WB On-Ramp Eastbound					US Hwy 212 WB Off-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	0	1	0	0	1	186	0	22	0	208	7	105	0	0	112	0	85	66	0	151	472
4:15 PM	0	0	0	0	0	196	0	22	0	218	15	92	0	0	107	0	78	65	0	143	468
4:30 PM	0	0	0	0	0	204	0	24	0	228	14	98	0	0	112	0	83	64	0	147	487
4:45 PM	0	0	0	0	0	177	0	25	0	202	14	105	0	0	119	0	86	60	0	146	467
Total	0	1	0	0	1	763	0	93	0	856	50	400	0	0	450	0	332	255	0	587	1894
Approach %	0.0	100.0	0.0	-	-	89.1	0.0	10.9	-	-	11.1	88.9	0.0	-	-	0.0	56.6	43.4	-	-	-
Total %	0.0	0.1	0.0	-	0.1	40.3	0.0	4.9	-	45.2	2.6	21.1	0.0	-	23.8	0.0	17.5	13.5	-	31.0	-
PHF	0.000	0.250	0.000	-	0.250	0.935	0.000	0.930	-	0.939	0.833	0.952	0.000	-	0.945	0.000	0.965	0.966	-	0.972	0.972
Lights	0	1	0	-	1	745	0	92	-	837	48	344	0	-	392	0	294	243	-	537	1767
% Lights	-	100.0	-	-	100.0	97.6	-	98.9	-	97.8	96.0	86.0	-	-	87.1	-	88.6	95.3	-	91.5	93.3
Buses	0	0	0	-	0	6	0	1	-	7	1	11	0	-	12	0	2	0	-	2	21
% Buses	-	0.0	-	-	0.0	0.8	-	1.1	-	0.8	2.0	2.8	-	-	2.7	-	0.6	0.0	-	0.3	1.1
Trucks	0	0	0	-	0	12	0	0	-	12	1	45	0	-	46	0	36	12	-	48	106
% Trucks	-	0.0	-	-	0.0	1.6	-	0.0	-	1.4	2.0	11.3	-	-	10.2	-	10.8	4.7	-	8.2	5.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	-	0.0	-	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Westbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 7



Turning Movement Peak Hour Data Plot (4:00 PM)

Kimley-Horn
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Warrenville, Illinois, United States 60555
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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025

Turning Movement Data

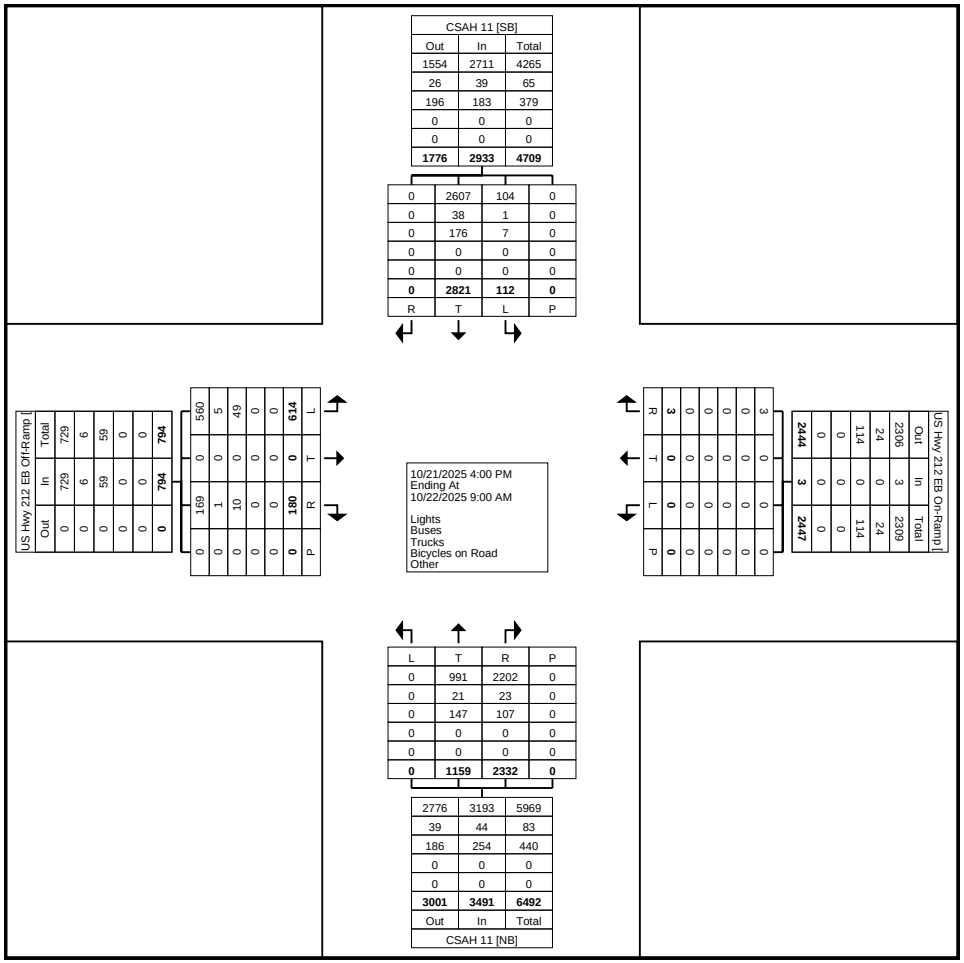
Start Time	US Hwy 212 EB Off-Ramp Eastbound					US Hwy 212 EB On-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	27	0	15	0	42	0	0	0	0	0	0	73	97	0	170	9	282	0	0	291	503
4:15 PM	38	0	3	0	41	0	0	0	0	0	0	73	84	0	157	6	270	0	0	276	474
4:30 PM	31	0	17	0	48	0	0	1	0	1	0	91	81	0	172	6	267	0	0	273	494
4:45 PM	30	0	7	0	37	0	0	0	0	0	0	84	86	0	170	3	278	0	0	281	488
Hourly Total	126	0	42	0	168	0	0	1	0	1	0	321	348	0	669	24	1097	0	0	1121	1959
5:00 PM	44	0	7	0	51	0	0	0	0	0	0	76	81	0	157	8	244	0	0	252	460
5:15 PM	26	0	6	0	32	0	0	0	0	0	0	56	89	0	145	5	253	0	0	258	435
5:30 PM	15	0	7	0	22	0	0	0	0	0	0	61	106	0	167	10	246	0	0	256	445
5:45 PM	37	0	4	0	41	0	0	0	0	0	0	54	78	0	132	6	223	0	0	229	402
Hourly Total	122	0	24	0	146	0	0	0	0	0	0	247	354	0	601	29	966	0	0	995	1742
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	46	0	12	0	58	0	0	0	0	0	0	63	235	0	298	5	82	0	0	87	443
7:15 AM	50	0	14	0	64	0	0	0	0	0	0	72	284	0	356	7	110	0	0	117	537
7:30 AM	69	0	18	0	87	0	0	0	0	0	0	92	262	0	354	13	109	0	0	122	563
7:45 AM	63	0	12	0	75	0	0	0	0	0	0	101	233	0	334	3	96	0	0	99	508
Hourly Total	228	0	56	0	284	0	0	0	0	0	0	328	1014	0	1342	28	397	0	0	425	2051
8:00 AM	49	0	14	0	63	0	0	2	0	2	0	73	209	0	282	12	93	0	0	105	452
8:15 AM	31	0	16	0	47	0	0	0	0	0	0	79	166	0	245	2	95	0	0	97	389
8:30 AM	43	0	19	0	62	0	0	0	0	0	0	61	121	0	182	10	95	0	0	105	349
8:45 AM	15	0	9	0	24	0	0	0	0	0	0	50	120	0	170	7	78	0	0	85	279
Hourly Total	138	0	58	0	196	0	0	2	0	2	0	263	616	0	879	31	361	0	0	392	1469
Grand Total	614	0	180	0	794	0	0	3	0	3	0	1159	2332	0	3491	112	2821	0	0	2933	7221
Approach %	77.3	0.0	22.7	-	-	0.0	0.0	100.0	-	-	0.0	33.2	66.8	-	-	3.8	96.2	0.0	-	-	-
Total %	8.5	0.0	2.5	-	11.0	0.0	0.0	0.0	-	0.0	0.0	16.1	32.3	-	48.3	1.6	39.1	0.0	-	40.6	-
Lights	560	0	169	-	729	0	0	3	-	3	0	991	2202	-	3193	104	2607	0	-	2711	6636
% Lights	91.2	-	93.9	-	91.8	-	-	100.0	-	100.0	-	85.5	94.4	-	91.5	92.9	92.4	-	-	92.4	91.9
Buses	5	0	1	-	6	0	0	0	-	0	0	21	23	-	44	1	38	0	-	39	89
% Buses	0.8	-	0.6	-	0.8	-	-	0.0	-	0.0	-	1.8	1.0	-	1.3	0.9	1.3	-	-	1.3	1.2
Trucks	49	0	10	-	59	0	0	0	-	0	0	147	107	-	254	7	176	0	-	183	496
% Trucks	8.0	-	5.6	-	7.4	-	-	0.0	-	0.0	-	12.7	4.6	-	7.3	6.3	6.2	-	-	6.2	6.9
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-

% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Eastbound Ramps
Site Code:
Start Date: 10/21/2025
Page No: 3



Turning Movement Data Plot

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Count Name: CSAH 11 (Johnathan Carver Parkway) & US Highway 212 Eastbound Ramps
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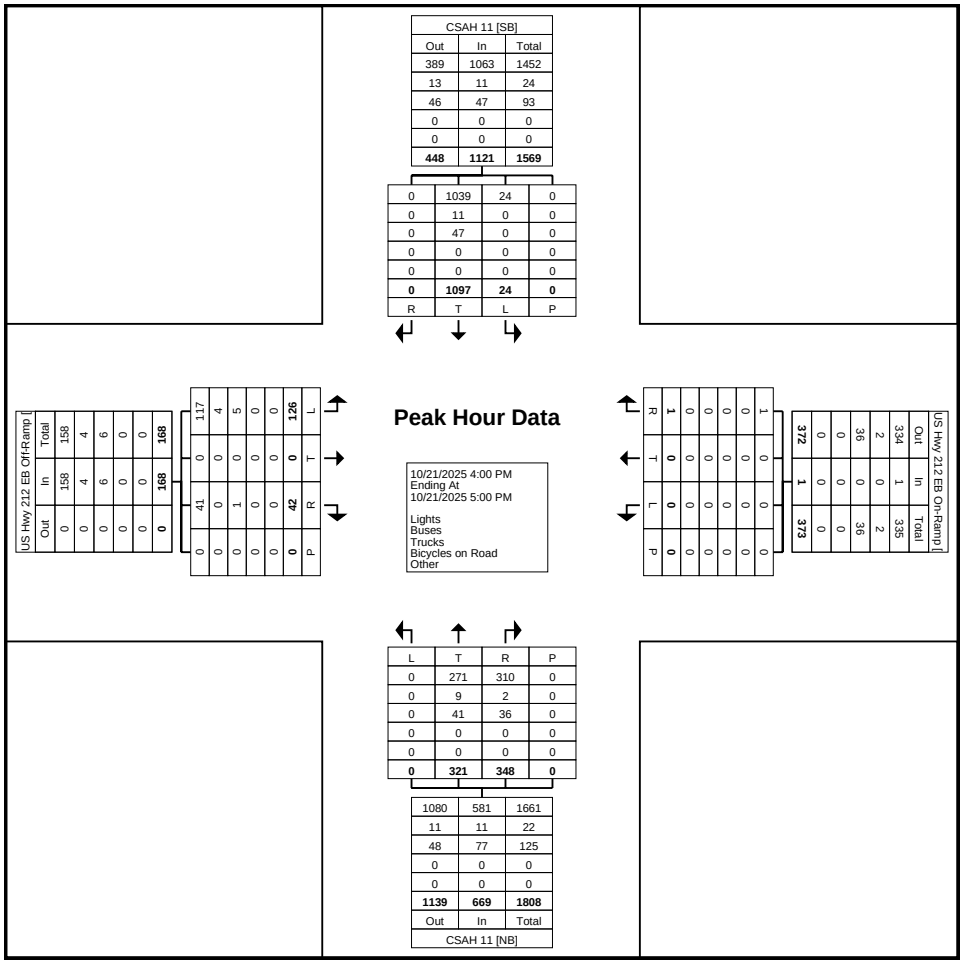
Turning Movement Peak Hour Data (4:00 PM)

Start Time	US Hwy 212 EB Off-Ramp Eastbound					US Hwy 212 EB On-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	27	0	15	0	42	0	0	0	0	0	0	73	97	0	170	9	282	0	0	291	503
4:15 PM	38	0	3	0	41	0	0	0	0	0	0	73	84	0	157	6	270	0	0	276	474
4:30 PM	31	0	17	0	48	0	0	1	0	1	0	91	81	0	172	6	267	0	0	273	494
4:45 PM	30	0	7	0	37	0	0	0	0	0	0	84	86	0	170	3	278	0	0	281	488
Total	126	0	42	0	168	0	0	1	0	1	0	321	348	0	669	24	1097	0	0	1121	1959
Approach %	75.0	0.0	25.0	-	-	0.0	0.0	100.0	-	-	0.0	48.0	52.0	-	-	2.1	97.9	0.0	-	-	-
Total %	6.4	0.0	2.1	-	8.6	0.0	0.0	0.1	-	0.1	0.0	16.4	17.8	-	34.2	1.2	56.0	0.0	-	57.2	-
PHF	0.829	0.000	0.618	-	0.875	0.000	0.000	0.250	-	0.250	0.000	0.882	0.897	-	0.972	0.667	0.973	0.000	-	0.963	0.974
Lights	117	0	41	-	158	0	0	1	-	1	0	271	310	-	581	24	1039	0	-	1063	1803
% Lights	92.9	-	97.6	-	94.0	-	-	100.0	-	100.0	-	84.4	89.1	-	86.8	100.0	94.7	-	-	94.8	92.0
Buses	4	0	0	-	4	0	0	0	-	0	0	9	2	-	11	0	11	0	-	11	26
% Buses	3.2	-	0.0	-	2.4	-	-	0.0	-	0.0	-	2.8	0.6	-	1.6	0.0	1.0	-	-	1.0	1.3
Trucks	5	0	1	-	6	0	0	0	-	0	0	41	36	-	77	0	47	0	-	47	130
% Trucks	4.0	-	2.4	-	3.6	-	-	0.0	-	0.0	-	12.8	10.3	-	11.5	0.0	4.3	-	-	4.2	6.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (4:00 PM)

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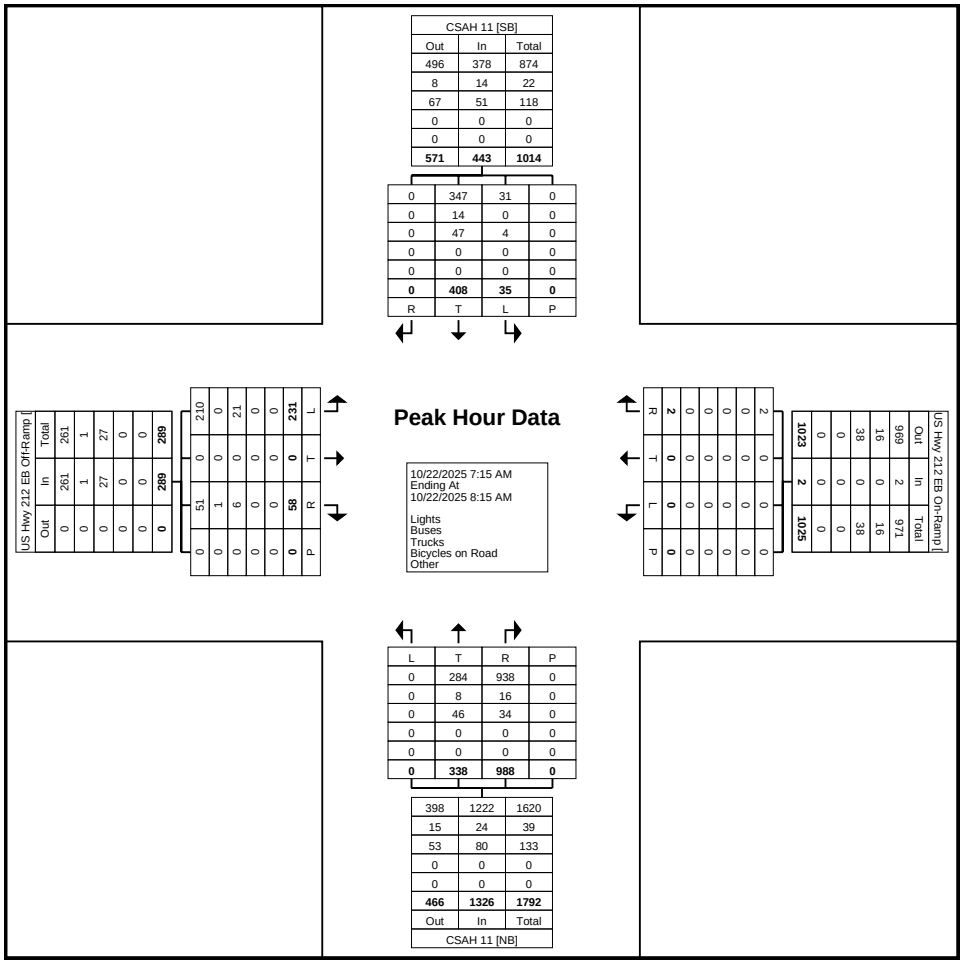
Turning Movement Peak Hour Data (7:15 AM)

Start Time	US Hwy 212 EB Off-Ramp Eastbound					US Hwy 212 EB On-Ramp Westbound					CSAH 11 Northbound					CSAH 11 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	50	0	14	0	64	0	0	0	0	0	0	72	284	0	356	7	110	0	0	117	537
7:30 AM	69	0	18	0	87	0	0	0	0	0	0	92	262	0	354	13	109	0	0	122	563
7:45 AM	63	0	12	0	75	0	0	0	0	0	0	101	233	0	334	3	96	0	0	99	508
8:00 AM	49	0	14	0	63	0	0	2	0	2	0	73	209	0	282	12	93	0	0	105	452
Total	231	0	58	0	289	0	0	2	0	2	0	338	988	0	1326	35	408	0	0	443	2060
Approach %	79.9	0.0	20.1	-	-	0.0	0.0	100.0	-	-	0.0	25.5	74.5	-	-	7.9	92.1	0.0	-	-	-
Total %	11.2	0.0	2.8	-	14.0	0.0	0.0	0.1	-	0.1	0.0	16.4	48.0	-	64.4	1.7	19.8	0.0	-	21.5	-
PHF	0.837	0.000	0.806	-	0.830	0.000	0.000	0.250	-	0.250	0.000	0.837	0.870	-	0.931	0.673	0.927	0.000	-	0.908	0.915
Lights	210	0	51	-	261	0	0	2	-	2	0	284	938	-	1222	31	347	0	-	378	1863
% Lights	90.9	-	87.9	-	90.3	-	-	100.0	-	100.0	-	84.0	94.9	-	92.2	88.6	85.0	-	-	85.3	90.4
Buses	0	0	1	-	1	0	0	0	-	0	0	8	16	-	24	0	14	0	-	14	39
% Buses	0.0	-	1.7	-	0.3	-	-	0.0	-	0.0	-	2.4	1.6	-	1.8	0.0	3.4	-	-	3.2	1.9
Trucks	21	0	6	-	27	0	0	0	-	0	0	46	34	-	80	4	47	0	-	51	158
% Trucks	9.1	-	10.3	-	9.3	-	-	0.0	-	0.0	-	13.6	3.4	-	6.0	11.4	11.5	-	-	11.5	7.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	-	0.0	-	0.0	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (7:15 AM)

Appendix C:

Development Scenario Concepts

Figure 3: Development Scenario 1

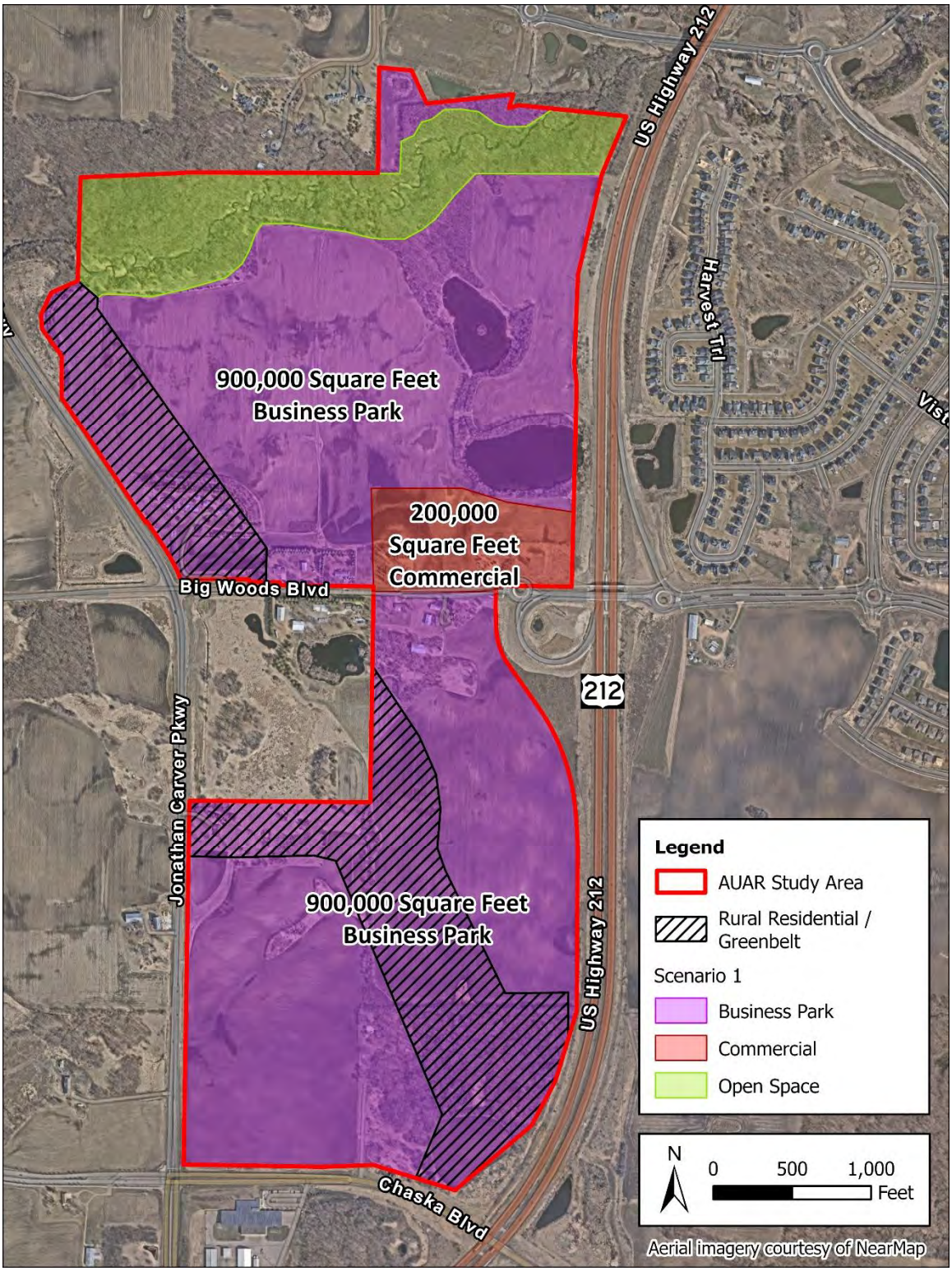
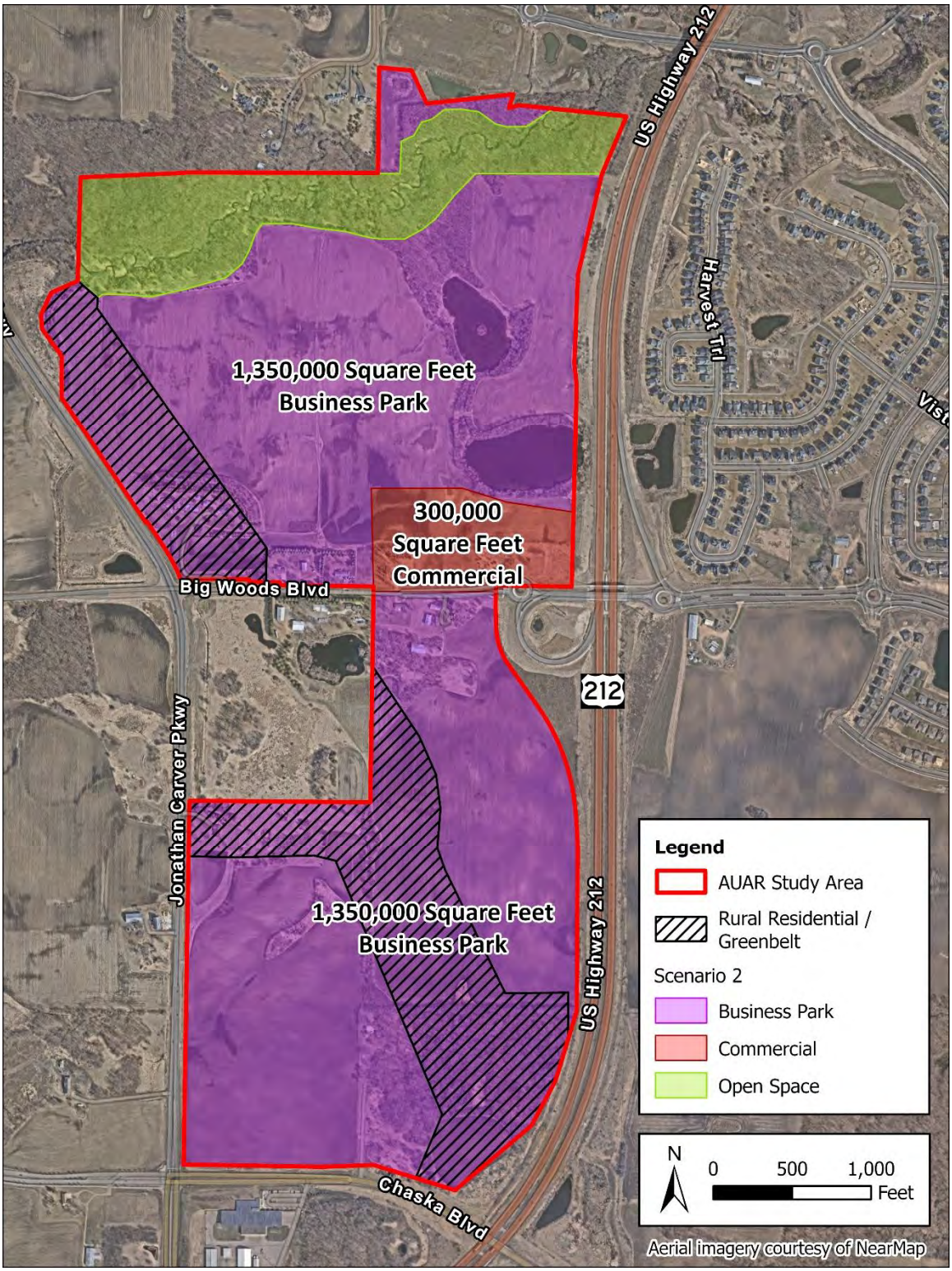


Figure 4: Development Scenario 2



Appendix D:

Existing Year (2025) Analysis Report

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.5	0.3	0.7	4.0	0.4
Total Del/Veh (s)	7.6	3.3	37.5	14.7	39.5	43.5	5.8	11.5

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.6	1.0	0.2
Total Del/Veh (s)	11.7	3.1	92.0	6.6	69.9	7.2	12.3

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	3.6	3.8
Total Del/Veh (s)	14.5	23.5	2.8	40.9	7.5	1.5	8.1	63.5	7.5	29.2	29.7	5.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	20.3

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.1	1.5	3.1	0.0	0.0	0.0	0.1	0.0	0.0	3.5	0.8	3.6
Total Del/Veh (s)	20.0	25.3	11.3	21.0	14.9	5.5	22.8	30.8	21.5	29.0	25.8	6.2

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	1.4
Total Del/Veh (s)	21.8

8: Johnathan Carver Pkwy & Big Woods Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.0	0.2	3.9	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.0
Total Del/Veh (s)	11.7	12.6	2.9	10.4	9.6	2.3	2.1	2.4	1.4	3.6	1.4	0.3

8: Johnathan Carver Pkwy & Big Woods Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	3.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.0	0.1	1.3	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	33.2	37.2	4.6	19.4	17.4	2.5	10.3	10.7	7.5	8.9	6.8	1.2

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	10.3

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.8	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	29.4	5.9	36.6	6.9	9.8	4.0	12.6

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.4	3.7	0.3	0.3	0.0	0.0	0.3
Total Del/Veh (s)	30.0	6.3	7.4	14.2	5.4	3.8	12.2

Total Zone Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	784.6

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	144	165	47	52	182	148	111	90	69
Average Queue (ft)	66	68	6	9	81	40	39	33	30
95th Queue (ft)	128	132	28	38	141	100	80	74	53
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	531	218	34	102	9	4	76	141	90
Average Queue (ft)	111	39	3	29	0	0	26	53	25
95th Queue (ft)	324	137	18	76	7	3	64	95	60
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	176	484	396	28	85	58	126	87	58	8	30	36
Average Queue (ft)	9	235	114	6	41	8	57	11	13	0	4	10
95th Queue (ft)	66	413	264	25	73	35	107	49	37	5	19	28
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		14	1									
Queuing Penalty (veh)		2	0									

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	161	175	40
Average Queue (ft)	80	69	10
95th Queue (ft)	135	130	29
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	5	2	
Queuing Penalty (veh)	9	4	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	175	482	250	29	236	85	151	196	226	154	80
Average Queue (ft)	22	225	81	4	80	23	64	92	110	62	22
95th Queue (ft)	100	396	220	21	177	57	125	169	186	124	59
Link Distance (ft)		1410			4237			865		1154	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		175	175		175	225		275		275
Storage Blk Time (%)		12			1			0	0		
Queuing Penalty (veh)		25			1			0	0		

Intersection: 8: Johnathan Carver Pkwy & Big Woods Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	R	L	R
Maximum Queue (ft)	18	49	34	58	22	29	12	14	67	4
Average Queue (ft)	1	15	7	14	4	2	1	0	23	0
95th Queue (ft)	7	33	23	38	13	13	8	8	54	3
Link Distance (ft)		1369			1265					
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	250		250	250		250	300	300	250	250
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	22	8	37	52	38	124	147	62	67	128	70	136
Average Queue (ft)	3	0	8	11	6	35	72	19	12	41	3	39
95th Queue (ft)	17	6	29	37	26	91	135	49	38	98	25	98
Link Distance (ft)			1114	1114				757		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	62	114	40
Average Queue (ft)	23	37	4
95th Queue (ft)	52	90	21
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	136	198	63	129	117	149	36	94	89	74
Average Queue (ft)	45	96	14	51	50	72	4	29	24	22
95th Queue (ft)	108	167	43	104	101	127	21	70	64	58
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)								0	0	0
Queuing Penalty (veh)								0	0	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	243	119	57	119	153	112	72	69	85
Average Queue (ft)	120	27	9	26	36	4	20	17	28
95th Queue (ft)	191	57	37	75	118	63	53	54	68
Link Distance (ft)	1077			2650	2650	2650	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	0								
Queuing Penalty (veh)	0								

Zone Summary

Zone wide Queuing Penalty: 41

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.5	0.3	0.1	3.9	0.3
Total Del/Veh (s)	26.4	4.0	11.2	3.6	46.1	17.8	4.9	14.4

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.1	1.9	1.0
Total Del/Veh (s)	17.1	3.4	13.6	10.0	22.8	14.3	14.7

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	3.0	0.1	0.1	2.1	3.9	3.9
Total Del/Veh (s)	45.8	9.0	1.7	42.9	13.5	3.7	33.5	56.1	4.7	31.4	34.9	7.6

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	13.7

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.4	0.8	3.3	0.3	0.0	0.0	0.0	0.0	0.0	3.6	0.6	3.7
Total Del/Veh (s)	25.1	12.1	5.0	34.8	36.4	22.1	33.4	28.9	11.7	25.8	33.4	17.6

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	27.0

8: Johnathan Carver Pkwy & Big Woods Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.9	0.1	4.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.2	11.9	3.4	11.1	12.7	3.0	3.0	2.6	1.2	3.9	1.8	1.6

8: Johnathan Carver Pkwy & Big Woods Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	3.9

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.9	0.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.8	39.1	6.0	26.6	32.0	7.4	16.5	18.8	6.4	13.2	15.5	1.8

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	17.1

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	1.1	3.1	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	38.1	8.9	43.7	16.0	16.3	6.3	24.1

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.3	3.9	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	42.5	11.8	3.5	5.0	5.1	4.3	7.0

Total Zone Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	961.6

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	178	188	50	52	114	65	37	85	41
Average Queue (ft)	56	85	13	6	50	20	11	33	19
95th Queue (ft)	134	159	41	31	102	49	31	72	39
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	220	142	32	73	100	80	115	277	251
Average Queue (ft)	96	71	10	20	35	30	38	151	105
95th Queue (ft)	173	127	31	52	79	70	81	237	209
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								6	0

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	56	125	120	25	70	30	277	246	62	64	36	48
Average Queue (ft)	17	55	43	3	24	2	138	76	23	15	9	19
95th Queue (ft)	43	107	95	16	55	14	247	191	47	42	27	37
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)							0	0				
Queuing Penalty (veh)							0	1				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	82	111	55
Average Queue (ft)	36	45	12
95th Queue (ft)	71	89	36
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	0	1	
Queuing Penalty (veh)	0	1	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	B19	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	T	L	TR	L	T	R
Maximum Queue (ft)	42	190	101	161	824	250	16	243	219	114	237	56
Average Queue (ft)	10	77	33	16	304	108	0	104	89	55	108	12
95th Queue (ft)	33	141	74	99	651	273	6	190	177	97	191	38
Link Distance (ft)		1410			4237		1228		865		1154	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175		175	175		175		225		275		275
Storage Blk Time (%)		0	0		17			0	0		0	
Queuing Penalty (veh)		1	0		42			1	1		0	

Intersection: 8: Johnathan Carver Pkwy & Big Woods Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T
Maximum Queue (ft)	13	42	33	46	53	31	28	12	19	55	4
Average Queue (ft)	1	12	4	11	13	5	2	0	1	17	0
95th Queue (ft)	6	32	17	31	34	19	14	7	8	45	0
Link Distance (ft)		1369			1265			2580			1216
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	250		250	250		250	300		300	250	
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	74	54	67	65	47	143	201	85	97	271	129	97
Average Queue (ft)	32	10	25	25	22	51	102	29	33	70	9	25
95th Queue (ft)	62	42	58	50	45	115	170	65	74	185	67	69
Link Distance (ft)			1114	1114				757		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	97	186	44
Average Queue (ft)	39	77	14
95th Queue (ft)	85	155	38
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	340	374	233	125	231	179	31	129	127	100
Average Queue (ft)	210	250	39	42	103	78	3	55	48	37
95th Queue (ft)	308	344	129	91	181	140	15	105	100	79
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	0	4						0	1	0
Queuing Penalty (veh)	2	20						0	2	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	168	73	38	58	65	45	143	172
Average Queue (ft)	92	23	3	16	11	9	39	35
95th Queue (ft)	154	57	17	49	41	33	111	108
Link Distance (ft)	1077			2636	2636	360	360	360
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)								
Queuing Penalty (veh)								

Zone Summary

Zone wide Queuing Penalty: 75

Operational Results

2025 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	10		14		6	1076		0.0093	
2	Creek Road WB	None	22		4		20	1107		0.0199	
3	Chaska Creek SB	None	16		4		22	1098		0.0146	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	0.09		0.09	0.00		A		A
2	Creek Road WB	None	3.32		3.32	0.06		A		A
3	Chaska Creek SB	None	3.28		3.28	0.04		A		A

Global Results

Performance and Accidents

2025 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	48		48
Capacity	veh/hr	3280		3280
Average Delay	sec/veh	2.55		2.55
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.03		0.03

Operational Results

2025 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	13		40		7	1062		0.0122	
2	Creek Road WB	None	25		4		49	1107		0.0226	
3	Chaska Creek SB	None	43		4		25	1098		0.0392	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	3.18		3.18	0.03		A		A
2	Creek Road WB	None	3.36		3.36	0.06		A		A
3	Chaska Creek SB	None	3.60		3.60	0.11		A		A

Global Results

Performance and Accidents

2025 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	81		81
Capacity	veh/hr	3267		3267
Average Delay	sec/veh	3.31		3.31
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.07		0.07

Operational Results

2025 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		319	0		0.0000	
2	EB CSAH 44	None	268		0		119	2005		0.1337	
3	WB CSAH 44	None	419		19		249	1039		0.4031	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	3.49		3.49	0.48		A		A
3	WB CSAH 44	None	7.92		7.92	1.82		A		A

Global Results

Performance and Accidents

2025 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	687		687
Capacity	veh/hr	3044		3044
Average Delay	sec/veh	5.32		5.32
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.02		1.02

Operational Results

2025 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		153	0		0.0000	
2	EB CSAH 44	None	345		0		210	2005		0.1721	
3	WB CSAH 44	None	350		13		332	1124		0.3114	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	3.89		3.89	0.63		A		A
3	WB CSAH 44	None	6.84		6.84	1.29		A		A

Global Results

Performance and Accidents

2025 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	695		695
Capacity	veh/hr	3129		3129
Average Delay	sec/veh	4.44		4.44
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.86		0.86

Operational Results

2025 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	211		0		126	1167		0.1808	
2	NB US 212 EXIT	Free	3	61	211	0	0	995	1264	0.0030	0.0483
3	WB CSAH 44	None	119		7		268	1077		0.1105	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	5.43		5.43	0.64		A		A
2	NB US 212 EXIT	Free	0.03	0.48	0.46	0.00	0.00	A	A	A
3	WB CSAH 44	None	4.56		4.56	0.34		A		A

Global Results

Performance and Accidents

2025 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	333	61	394
Capacity	veh/hr	3240	1264	4504
Average Delay	sec/veh	4.30	0.24	3.67
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.40	0.00	0.40

Operational Results

2025 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	153		0		241	1004		0.1524	
2	NB US 212 EXIT	Free	30	194	153	0	0	1079	1301	0.0278	0.1491
3	WB CSAH 44	None	210		31		346	1151		0.1825	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	5.20		5.20	0.48		A		A
2	NB US 212 EXIT	Free	3.60	1.49	1.78	0.08	0.00	A	A	A
3	WB CSAH 44	None	5.50		5.50	0.65		A		A

Global Results

Performance and Accidents

2025 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	393	194	587
Capacity	veh/hr	3233	1301	4534
Average Delay	sec/veh	4.44	0.75	3.22
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.49	0.04	0.53

Appendix E:

Opening Year (2030) No-Build Analysis Reports

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.6	0.4	0.4	3.9	0.4
Total Del/Veh (s)	10.0	3.2	41.4	14.5	38.5	67.6	6.2	13.6

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.3	1.3	0.3
Total Del/Veh (s)	13.0	3.3	83.9	6.6	79.1	7.9	13.1

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	2.8	3.6	3.6
Total Del/Veh (s)	26.4	25.9	2.8	41.0	5.6	1.8	57.0	44.8	10.1	32.3	34.7	9.8

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	21.6

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.6	0.3	2.6	0.0	0.0	0.1	0.1	0.0	0.0	3.5	0.7	3.3
Total Del/Veh (s)	13.3	12.6	4.6	19.1	12.7	4.7	17.3	21.8	6.4	19.5	23.1	4.0

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	13.7

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.5	0.1	1.3	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	25.2	33.8	4.9	21.3	17.1	2.8	10.9	11.1	10.3	10.5	7.6	1.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	11.8

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.5	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	30.9	8.5	36.9	7.8	11.4	4.5	14.2

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.6	0.4	0.4	0.0	0.0	0.4
Total Del/Veh (s)	30.2	7.2	27.2	45.8	6.9	4.2	31.0

Total Zone Performance

Denied Del/Veh (s)	1.1
Total Del/Veh (s)	1111.9

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	213	212	42	61	164	151	92	103	81
Average Queue (ft)	94	94	5	13	86	57	44	44	33
95th Queue (ft)	174	174	23	45	143	117	81	89	62
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	TR	R
Maximum Queue (ft)	408	122	36	98	75	114	81
Average Queue (ft)	140	26	4	31	27	56	31
95th Queue (ft)	331	83	21	75	63	91	60
Link Distance (ft)	909	909				775	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275	225	225		225
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	258	536	434	28	93	61	87	96	44	11	26	40
Average Queue (ft)	21	263	122	7	43	9	30	26	10	1	3	10
95th Queue (ft)	128	484	290	26	80	37	65	69	29	6	16	29
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		18	2									
Queuing Penalty (veh)		3	0									

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	168	217	65
Average Queue (ft)	97	85	16
95th Queue (ft)	159	174	47
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	11	4	
Queuing Penalty (veh)	21	8	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	72	171	143	72	31	102	123	78	93	112	134	121
Average Queue (ft)	18	99	60	35	5	43	44	17	31	50	51	48
95th Queue (ft)	52	152	114	62	21	91	93	50	70	89	103	94
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175			175	175			175	225	225		
Storage Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	45	103	132	128	41	73
Average Queue (ft)	9	41	69	57	5	21
95th Queue (ft)	31	79	111	105	24	56
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	30	55	49	53	131	163	66	58	172	49	207	70
Average Queue (ft)	3	9	14	8	37	80	21	14	50	4	64	24
95th Queue (ft)	17	34	39	31	93	143	50	37	122	30	160	57
Link Distance (ft)		1114	1114				757		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)											0	
Queuing Penalty (veh)											0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	132	43
Average Queue (ft)	44	4
95th Queue (ft)	99	22
Link Distance (ft)	469	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	201	232	69	145	136	191	54	102	88	82
Average Queue (ft)	69	120	20	60	58	87	8	36	32	25
95th Queue (ft)	154	192	56	114	115	159	33	79	75	56
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	0	0						0	0	0
Queuing Penalty (veh)	0	0						0	0	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	265	83	108	965	1149	1205	81	82	69
Average Queue (ft)	138	34	14	109	295	314	23	23	30
95th Queue (ft)	224	67	68	584	991	1092	60	65	65
Link Distance (ft)	1077			2650	2650	2650	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	0			1					
Queuing Penalty (veh)	0			1					

Zone Summary

Zone wide Queuing Penalty: 34

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.4	0.2	0.5	3.9	0.3
Total Del/Veh (s)	24.3	4.3	12.8	4.7	38.1	14.8	5.9	14.0

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	3.3	2.3	1.2
Total Del/Veh (s)	18.7	3.9	13.8	9.6	20.6	14.9	15.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.1	0.1	2.0	3.9	3.8
Total Del/Veh (s)	43.5	9.6	1.7	46.9	11.5	4.9	31.2	48.5	5.0	30.9	34.7	7.8

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	13.0

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.2	0.2	3.1	0.3	0.0	0.0	0.0	0.0	0.0	3.6	0.4	3.7
Total Del/Veh (s)	19.7	11.1	3.9	13.2	15.8	10.5	19.7	18.9	3.1	19.6	26.7	7.7

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	15.2

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.7	0.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.4	37.4	6.7	27.2	35.3	10.1	19.4	22.0	8.4	15.8	18.3	2.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	18.7

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	1.6	3.1	0.0	0.0	0.0	0.1	0.8
Total Del/Veh (s)	42.9	13.9	41.7	18.1	21.7	7.5	28.7

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.4	3.7	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	43.9	15.0	4.5	6.9	5.8	7.8	9.3

Total Zone Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	991.3

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	167	204	78	86	143	92	49	94	51
Average Queue (ft)	58	87	15	11	58	29	12	35	19
95th Queue (ft)	124	156	52	48	115	68	36	75	43
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	0	0							
Queuing Penalty (veh)	0	0							

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	229	163	41	66	70	104	101	258	226
Average Queue (ft)	109	81	11	28	23	46	39	160	121
95th Queue (ft)	191	142	33	57	59	88	82	245	211
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								6	1

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	67	162	118	32	61	33	196	217	76	51	41	53
Average Queue (ft)	22	64	48	2	27	1	94	107	30	14	9	20
95th Queue (ft)	54	127	103	14	54	12	174	192	59	39	30	38
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		0						2				
Queuing Penalty (veh)		0						6				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	88	121	56
Average Queue (ft)	36	47	14
95th Queue (ft)	70	99	39
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	0	2	
Queuing Penalty (veh)	0	2	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	39	123	91	79	30	184	176	122	109	123	116	110
Average Queue (ft)	10	64	25	29	4	81	80	30	49	59	45	49
95th Queue (ft)	30	109	61	60	20	154	153	77	92	102	89	92
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175			175	175			175	225	225		
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	1					

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	30	51	95	197	153	61
Average Queue (ft)	6	19	44	97	25	16
95th Queue (ft)	23	47	78	174	91	48
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	77	58	83	67	52	157	207	114	118	204	115	112
Average Queue (ft)	34	15	24	30	24	66	109	37	42	84	18	38
95th Queue (ft)	62	49	58	56	43	128	170	87	93	173	71	91
Link Distance (ft)			1114	1114				757		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	123	212	51
Average Queue (ft)	46	96	15
95th Queue (ft)	96	183	40
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	349	676	350	123	210	174	23	159	164	124
Average Queue (ft)	280	359	73	55	120	104	4	75	73	45
95th Queue (ft)	391	569	250	103	193	161	16	132	133	92
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	3	17						0	4	0
Queuing Penalty (veh)	19	104						0	11	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	215	91	54	112	82	62	293	315
Average Queue (ft)	106	37	8	25	16	15	103	108
95th Queue (ft)	182	71	32	72	53	46	246	267
Link Distance (ft)	1077			2636	2636	360	360	360
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Zone Summary

Zone wide Queuing Penalty: 150

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	12		16		7	1075		0.0112	
2	Creek Road WB	None	25		5		23	1106		0.0226	
3	Chaska Creek SB	None	18		5		25	1097		0.0164	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	3.14		3.14	0.03		A		A
2	Creek Road WB	None	3.36		3.36	0.06		A		A
3	Chaska Creek SB	None	3.30		3.30	0.05		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	55		55
Capacity	veh/hr	3278		3278
Average Delay	sec/veh	3.20		3.20
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.05		0.05

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	15		45		8	1060		0.0142	
2	Creek Road WB	None	29		5		55	1106		0.0262	
3	Chaska Creek SB	None	48		5		29	1097		0.0438	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	3.39		3.39	0.04		A		A
2	Creek Road WB	None	3.40		3.40	0.08		A		A
3	Chaska Creek SB	None	3.66		3.66	0.13		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	92		92
Capacity	veh/hr	3263		3263
Average Delay	sec/veh	3.37		3.37
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.09		0.09

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	319		219		250	733		0.4352	
2	WB CSAH 44	None	136		78		460	1062		0.1280	
3	SB CSAH 11	None	356		136		78	941		0.3783	
4	EB CSAH 44	None	71		398		94	843		0.0843	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	8.96		8.96	1.72		A		A
2	WB CSAH 44	None	4.89		4.89	0.41		A		A
3	SB CSAH 11	None	7.96		7.96	1.61		A		A
4	EB CSAH 44	None	5.06		5.06	0.26		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	882		882
Capacity	veh/hr	3579		3579
Average Delay	sec/veh	6.72		6.72
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.65		1.65

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	319		219		250	865		0.3688	
2	WB CSAH 44	None	136		78		460	1108		0.1228	
3	SB CSAH 11	None	356		136		78	864		0.4119	
4	EB CSAH 44	None	71		398		94	762		0.0931	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	8.12		8.12	1.46		A		A
2	WB CSAH 44	None	4.76		4.76	0.39		A		A
3	SB CSAH 11	None	8.37		8.37	1.65		A		A
4	EB CSAH 44	None	5.39		5.39	0.26		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	882		882
Capacity	veh/hr	3599		3599
Average Delay	sec/veh	6.59		6.59
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.61		1.61

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		360	0		0.0000	
2	EB CSAH 44	None	303		0		135	2005		0.1511	
3	WB CSAH 44	None	474		21		282	1038		0.4565	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	3.70		3.70	0.56		A		A
3	WB CSAH 44	None	8.60		8.60	2.26		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	777		777
Capacity	veh/hr	3043		3043
Average Delay	sec/veh	5.79		5.79
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.25		1.25

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		173	0		0.0000	
2	EB CSAH 44	None	391		0		238	2005		0.1950	
3	WB CSAH 44	None	396		15		376	1123		0.3527	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	4.16		4.16	0.74		A		A
3	WB CSAH 44	None	7.30		7.30	1.56		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	787		787
Capacity	veh/hr	3128		3128
Average Delay	sec/veh	4.76		4.76
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.04		1.04

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	239		0		143	1167		0.2047	
2	NB US 212 EXIT	Free	3	69	239	0	0	981	1264	0.0031	0.0546
3	WB CSAH 44	None	135		8		303	1077		0.1254	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	5.73		5.73	0.75		A		A
2	NB US 212 EXIT	Free	0.03	0.55	0.53	0.00	0.00	A	A	A
3	WB CSAH 44	None	4.76		4.76	0.40		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	377	69	446
Capacity	veh/hr	3225	1264	4489
Average Delay	sec/veh	4.49	0.27	3.84
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.47	0.01	0.48

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	173		0		273	1004		0.1724	
2	NB US 212 EXIT	Free	34	219	173	0	0	1068	1301	0.0318	0.1683
3	WB CSAH 44	None	238		35		391	1149		0.2072	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	5.47		5.47	0.55		A		A
2	NB US 212 EXIT	Free	3.69	1.69	1.96	0.10	0.00	A	A	A
3	WB CSAH 44	None	5.83		5.83	0.76		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	445	219	664
Capacity	veh/hr	3220	1301	4521
Average Delay	sec/veh	4.64	0.84	3.39
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.57	0.05	0.63

Appendix F:

Opening Year (2030) Build Scenario 1 Analysis Reports

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.6	0.5	0.1	3.9	0.5
Total Del/Veh (s)	10.9	3.7	39.1	16.1	42.9	28.1	7.0	14.1

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.3	1.3	0.3
Total Del/Veh (s)	13.7	4.9	77.7	6.3	71.2	7.9	13.7

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	1.9	3.7	3.6
Total Del/Veh (s)	18.2	17.5	3.5	39.2	5.2	2.0	49.4	51.1	9.4	33.0	35.6	6.8

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	17.1

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.7	0.3	2.5	0.1	0.0	0.1	0.0	0.0	0.0	3.4	0.7	3.4
Total Del/Veh (s)	15.7	12.9	4.8	21.7	12.7	4.7	17.1	23.3	7.2	21.5	23.2	4.4

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	14.1

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.5	0.1	1.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	20.1	35.1	4.7	21.7	9.6	2.3	10.9	12.7	9.8	9.7	7.3	1.2

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	11.8

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.7	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	30.0	7.8	35.3	7.6	11.2	4.8	13.7

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.6	0.3	0.2	0.0	0.0	0.3
Total Del/Veh (s)	33.3	7.7	30.3	47.6	7.7	4.4	32.7

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.4	1.9	1.1	0.7	1.2

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	907.8

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	228	236	109	82	164	133	115	111	82
Average Queue (ft)	104	112	11	13	89	55	46	49	35
95th Queue (ft)	184	203	58	51	147	113	89	98	64
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	0								
Queuing Penalty (veh)	0								

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	L	TR	R
Maximum Queue (ft)	336	280	34	108	5	80	123	96
Average Queue (ft)	107	63	4	38	0	27	59	35
95th Queue (ft)	255	184	21	83	4	64	102	71
Link Distance (ft)	909	909			669		775	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			275	225		225		225
Storage Blk Time (%)		0						
Queuing Penalty (veh)		0						

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	45	297	284	33	81	54	88	90	61	14	37	52
Average Queue (ft)	9	169	143	7	41	9	31	25	13	1	6	12
95th Queue (ft)	33	271	248	27	75	36	66	71	38	7	27	35
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		4	1					0				
Queuing Penalty (veh)		1	0					0				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	167	185	63
Average Queue (ft)	82	88	14
95th Queue (ft)	137	153	41
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	5	6	
Queuing Penalty (veh)	10	12	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	59	169	147	85	26	124	122	61	77	93	117	118
Average Queue (ft)	15	106	69	35	4	46	42	15	28	48	50	53
95th Queue (ft)	48	157	130	67	18	95	94	42	67	85	95	106
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	55	110	173	122	58	87
Average Queue (ft)	11	29	92	60	7	25
95th Queue (ft)	37	77	146	105	35	64
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	19	45	44	33	128	164	60	50	210	134	221	77
Average Queue (ft)	2	7	15	6	40	78	19	13	71	7	63	26
95th Queue (ft)	12	30	39	24	97	137	48	37	156	46	151	60
Link Distance (ft)		1114	1114				769		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)										0	0	
Queuing Penalty (veh)										0	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	153	30
Average Queue (ft)	47	4
95th Queue (ft)	110	19
Link Distance (ft)	449	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	199	231	64	145	151	182	45	96	101	96
Average Queue (ft)	67	117	18	70	70	82	5	36	28	31
95th Queue (ft)	148	186	47	129	129	145	23	72	70	70
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)		0							0	0
Queuing Penalty (veh)		0							0	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	347	229	135	944	1018	1084	69	80	91
Average Queue (ft)	163	41	20	196	374	460	21	26	37
95th Queue (ft)	283	128	82	729	969	1069	55	65	76
Link Distance (ft)	1077			2636	2636	2636	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	2			1					
Queuing Penalty (veh)	2			2					

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB
Directions Served	LR
Maximum Queue (ft)	38
Average Queue (ft)	6
95th Queue (ft)	28
Link Distance (ft)	1061
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 27

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.4	0.3	0.1	4.0	0.4
Total Del/Veh (s)	22.5	4.4	13.3	4.0	40.6	59.1	5.5	13.5

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.2	2.3	1.2
Total Del/Veh (s)	19.7	4.3	16.2	9.8	21.8	15.7	16.2

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.2	0.1	2.1	3.9	4.0
Total Del/Veh (s)	45.9	10.7	1.5	48.3	10.6	4.7	39.9	39.2	5.3	31.5	33.3	10.3

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	13.0

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.3	3.1	0.1	0.0	0.0	0.0	0.0	0.0	3.5	0.5	3.5
Total Del/Veh (s)	52.0	12.0	4.1	51.5	19.8	11.1	43.5	35.8	4.0	47.0	48.9	9.7

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	24.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.7	0.3	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	33.3	47.2	7.8	42.9	38.8	16.8	16.8	9.0	5.4	22.4	14.0	1.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	19.6

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	1.5	3.0	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	29.4	11.0	59.0	17.3	26.2	9.9	23.6

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.8	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	42.1	16.4	5.3	6.6	6.7	5.2	8.4

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.8	2.4	1.3	0.8	1.6

Total Zone Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	992.2

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	196	214	53	48	150	120	50	99	63
Average Queue (ft)	60	81	12	5	64	32	13	32	25
95th Queue (ft)	133	151	38	26	128	80	35	72	48
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	0	0							
Queuing Penalty (veh)	0	0							

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	240	169	30	90	77	110	121	277	255
Average Queue (ft)	115	83	12	34	20	45	39	168	126
95th Queue (ft)	194	140	32	69	59	96	93	257	230
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								8	1

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	80	154	133	26	70	30	214	229	70	58	41	54
Average Queue (ft)	21	70	55	3	29	2	87	100	28	16	6	22
95th Queue (ft)	55	132	112	17	59	15	154	175	54	44	25	44
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)							0	1				
Queuing Penalty (veh)							0	3				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	114	110	60
Average Queue (ft)	42	50	15
95th Queue (ft)	89	100	42
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	0	1	
Queuing Penalty (veh)	0	1	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	52	140	109	81	38	263	267	196	172	181	160	157
Average Queue (ft)	13	69	32	33	5	123	125	42	88	100	71	76
95th Queue (ft)	39	128	83	68	22	231	233	130	153	161	128	129
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)						3	3		0	0		
Queuing Penalty (veh)						0	9		0	0		

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	27	90	138	276	239	77
Average Queue (ft)	6	30	70	142	64	16
95th Queue (ft)	23	69	118	236	176	49
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				1	0	
Queuing Penalty (veh)				1	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	82	69	111	57	64	237	266	130	80	87	44	80
Average Queue (ft)	38	20	31	28	27	95	147	45	26	23	4	13
95th Queue (ft)	72	61	78	50	51	195	235	96	59	68	23	45
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	145	238	48
Average Queue (ft)	56	117	11
95th Queue (ft)	117	217	36
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	339	462	131	125	208	194	27	189	236	197
Average Queue (ft)	223	269	30	54	112	92	4	102	100	74
95th Queue (ft)	325	382	84	100	198	169	17	173	183	144
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	0	5						2	8	2
Queuing Penalty (veh)	2	33						3	27	3

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	250	90	40	114	95	48	158	159
Average Queue (ft)	129	35	6	30	21	11	61	72
95th Queue (ft)	211	70	25	79	62	38	126	127
Link Distance (ft)	1077			2668	2668	360	360	360
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	1061
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 92

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	108		151		224	853		0.1266	
2	EB Big Woods Blvd	None	300		74		185	1080		0.2778	
3	WB Big Woods Blvd	None	309		66		308	1068		0.2894	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	5.27		5.27	0.36		A		A
2	EB Big Woods Blvd	None	6.66		6.66	1.07		A		A
3	WB Big Woods Blvd	None	6.77		6.77	1.11		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	717		717
Capacity	veh/hr	3001		3001
Average Delay	sec/veh	5.55		5.55
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.11		1.11

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	458		291		321	991		0.4623	
2	EB Big Woods Blvd	None	266		313		436	907		0.2932	
3	WB Big Woods Blvd	None	518		94		485	1093		0.4739	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	9.57		9.57	2.31		A		A
2	EB Big Woods Blvd	None	7.43		7.43	1.07		A		A
3	WB Big Woods Blvd	None	9.16		9.16	2.40		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1242		1242
Capacity	veh/hr	2991		2991
Average Delay	sec/veh	7.94		7.94
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.74		2.74

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	340		246		280	800		0.4249	
2	WB CSAH 44	None	184		286		300	892		0.2063	
3	SB CSAH 11	None	383		115		355	990		0.3870	
4	EB CSAH 44	None	71		455		43	816		0.0870	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	8.88		8.88	1.80		A		A
2	WB CSAH 44	None	6.51		6.51	0.72		A		A
3	SB CSAH 11	None	7.98		7.98	1.72		A		A
4	EB CSAH 44	None	5.24		5.24	0.27		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	978		978
Capacity	veh/hr	3498		3498
Average Delay	sec/veh	6.86		6.86
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.86		1.86

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	445		167		487	891		0.4994	
2	WB CSAH 44	None	435		347		265	951		0.4575	
3	SB CSAH 11	None	447		263		519	811		0.5511	
4	EB CSAH 44	None	51		603		107	666		0.0765	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	9.66		9.66	2.42		A		A
2	WB CSAH 44	None	9.75		9.75	2.45		A		A
3	SB CSAH 11	None	10.71		10.71	2.80		B		B
4	EB CSAH 44	None	5.80		5.80	0.22		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1378		1378
Capacity	veh/hr	3319		3319
Average Delay	sec/veh	8.91		8.91
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.41		3.41

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		423	0		0.0000	
2	EB CSAH 44	None	377		0		161	1756		0.2147	
3	WB CSAH 44	None	500		84		293	1005		0.4973	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	4.97		4.97	0.94		A		A
3	WB CSAH 44	None	9.37		9.37	2.67		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	877		877
Capacity	veh/hr	2761		2761
Average Delay	sec/veh	6.48		6.48
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.58		1.58

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		439	0		0.0000	
2	EB CSAH 44	None	705		0		275	1892		0.3726	
3	WB CSAH 44	None	433		281		424	981		0.4412	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	7.39		7.39	2.75		A		A
3	WB CSAH 44	None	9.18		9.18	2.34		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1138		1138
Capacity	veh/hr	2873		2873
Average Delay	sec/veh	7.07		7.07
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.24		2.24

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	313		0		314	1102		0.2841	
2	NB US 212 EXIT	Free	148	69	313	0	0	888	1229	0.1667	0.0562
3	WB CSAH 44	None	161		153		377	1001		0.1609	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	6.57		6.57	1.12		A		A
2	NB US 212 EXIT	Free	6.00	0.56	4.27	0.55	0.00	A	A	A
3	WB CSAH 44	None	5.52		5.52	0.54		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	622	69	691
Capacity	veh/hr	2990	1229	4219
Average Delay	sec/veh	5.25	0.28	4.76
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.91	0.01	0.91

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	486		0		519	1004		0.4842	
2	NB US 212 EXIT	Free	243	219	486	0	0	887	1301	0.2739	0.1683
3	WB CSAH 44	None	275		244		704	1037		0.2652	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	8.95		8.95	2.43		A		A
2	NB US 212 EXIT	Free	7.72	1.69	4.86	1.16	0.00	A	A	A
3	WB CSAH 44	None	6.85		6.85	1.08		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1004	219	1223
Capacity	veh/hr	2928	1301	4229
Average Delay	sec/veh	7.08	0.84	5.96
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	1.97	0.05	2.03

Appendix G:

Opening Year (2030) Build Scenario 2 Analysis Reports

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.5	0.4	1.6	3.9	0.4
Total Del/Veh (s)	11.3	4.2	39.2	17.2	42.5	31.5	6.6	14.6

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.6	1.3	0.3
Total Del/Veh (s)	16.6	5.8	84.6	6.6	69.4	8.2	16.1

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.8	0.0	0.0	1.9	3.3	3.7
Total Del/Veh (s)	13.9	21.0	4.4	38.5	7.8	2.5	26.6	61.0	11.8	29.3	27.8	5.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	18.8

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.6	0.3	2.5	0.0	0.0	0.1	0.0	0.0	0.0	3.4	0.7	3.4
Total Del/Veh (s)	14.2	13.1	4.9	20.7	13.5	5.0	17.0	24.2	8.2	22.2	23.6	3.4

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	14.5

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.5	0.1	1.6	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	23.4	36.0	4.2	21.5	12.2	2.8	12.2	12.8	8.9	10.5	7.0	1.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	11.4

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.5	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	29.2	7.0	37.2	7.5	11.2	4.6	13.3

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.5	0.2	0.2	0.0	0.0	0.3
Total Del/Veh (s)	31.5	7.5	41.1	47.6	6.7	4.6	34.5

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.1	2.3	1.3	0.7	1.4

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	946.4

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	226	230	98	96	151	135	107	135	80
Average Queue (ft)	105	110	11	14	88	57	48	46	33
95th Queue (ft)	192	202	58	57	139	110	92	94	62
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	L	TR	R
Maximum Queue (ft)	388	375	36	127	5	82	141	82
Average Queue (ft)	155	108	5	46	0	26	59	33
95th Queue (ft)	327	271	22	98	4	62	100	65
Link Distance (ft)	909	909			669		775	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			275	225		225		225
Storage Blk Time (%)		1						
Queuing Penalty (veh)		0						

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	38	392	316	34	88	66	90	106	65	8	36	42
Average Queue (ft)	10	187	156	7	44	9	39	41	20	1	4	13
95th Queue (ft)	31	315	279	28	79	38	77	91	45	6	20	33
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		6	3									
Queuing Penalty (veh)		1	1									

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	167	165	45
Average Queue (ft)	72	75	14
95th Queue (ft)	125	131	35
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	2	3	
Queuing Penalty (veh)	4	7	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	67	178	167	76	27	131	142	72	88	96	92	105
Average Queue (ft)	17	104	67	36	4	44	43	18	32	50	42	49
95th Queue (ft)	52	158	126	63	17	90	92	51	74	85	78	95
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	55	128	166	150	44	61
Average Queue (ft)	10	33	90	61	6	22
95th Queue (ft)	37	87	141	113	26	56
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	21	45	50	38	129	178	65	45	228	95	156	79
Average Queue (ft)	3	7	12	7	35	79	20	15	70	7	53	25
95th Queue (ft)	15	31	37	27	93	146	45	40	165	41	121	60
Link Distance (ft)		1114	1114				769		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)											0	
Queuing Penalty (veh)											0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	138	24
Average Queue (ft)	49	3
95th Queue (ft)	110	16
Link Distance (ft)	449	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	167	211	62	165	159	162	46	108	101	84
Average Queue (ft)	57	115	17	66	70	77	5	39	32	28
95th Queue (ft)	129	180	48	130	126	139	24	84	78	64
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)								0	0	0
Queuing Penalty (veh)								0	1	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	311	151	157	946	987	1050	68	92	86
Average Queue (ft)	163	37	17	193	356	411	20	29	38
95th Queue (ft)	253	90	69	793	1015	1098	54	73	77
Link Distance (ft)	1077			2636	2636	2636	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	1			3					
Queuing Penalty (veh)	1			5					

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB
Directions Served	LR
Maximum Queue (ft)	45
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	1061
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 18

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.5	0.3	0.1	3.9	0.4
Total Del/Veh (s)	26.4	4.4	13.5	4.6	42.8	40.7	5.9	15.0

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.3	2.4	1.3
Total Del/Veh (s)	19.8	3.8	18.7	9.5	23.2	16.2	16.5

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.1	0.1	2.1	3.9	3.8
Total Del/Veh (s)	43.9	10.3	1.3	49.5	10.9	5.0	47.4	48.3	5.4	34.2	34.2	13.6

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	13.4

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.8	0.2	3.2	0.1	0.0	0.0	0.0	0.0	0.1	3.5	0.5	3.6
Total Del/Veh (s)	54.5	11.8	4.2	71.3	19.8	11.2	42.1	34.1	3.8	49.7	47.2	9.9

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	24.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.7	0.4	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	33.3	55.1	8.6	47.1	39.1	13.0	21.2	9.7	5.5	21.4	12.8	1.5

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	20.0

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	1.5	3.0	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	28.7	11.9	58.3	18.5	27.2	10.3	23.5

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.6	0.2	0.2	0.0	0.0	0.2
Total Del/Veh (s)	42.2	16.3	5.8	6.8	9.9	5.7	9.2

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	2.9	1.5	0.9	1.9

Total Zone Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	1078.7

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	234	248	54	43	147	122	50	94	60
Average Queue (ft)	68	92	11	7	64	37	10	37	27
95th Queue (ft)	161	184	38	30	128	89	34	80	50
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	0	0							
Queuing Penalty (veh)	0	0							

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	224	186	28	97	78	105	99	264	254
Average Queue (ft)	117	84	10	36	20	44	41	167	129
95th Queue (ft)	201	152	30	75	56	85	86	242	228
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)								1	0
Queuing Penalty (veh)								6	2

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	72	171	142	26	70	40	230	248	114	51	41	57
Average Queue (ft)	23	68	52	2	30	3	85	100	30	17	9	22
95th Queue (ft)	58	137	115	13	61	18	181	198	75	43	32	42
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		0	0				0	2				
Queuing Penalty (veh)		0	0				0	6				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	125	135	68
Average Queue (ft)	44	51	15
95th Queue (ft)	93	104	47
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	1	2	
Queuing Penalty (veh)	1	2	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	48	130	96	87	36	265	275	219	163	172	161	148
Average Queue (ft)	14	68	32	35	8	124	124	45	88	105	68	73
95th Queue (ft)	39	121	80	72	27	236	238	142	146	160	124	127
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)						3	3			0		
Queuing Penalty (veh)						0	8			0		

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	28	116	137	246	216	53
Average Queue (ft)	6	32	69	138	66	13
95th Queue (ft)	23	74	116	224	174	40
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	78	55	77	72	60	243	296	112	104	109	30	84
Average Queue (ft)	36	15	30	30	27	107	161	39	32	29	1	14
95th Queue (ft)	67	50	69	54	50	211	256	83	75	82	13	56
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	139	253	43
Average Queue (ft)	51	113	10
95th Queue (ft)	104	210	32
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	346	410	182	119	296	271	40	191	225	196
Average Queue (ft)	230	270	37	55	127	105	6	107	104	79
95th Queue (ft)	338	371	119	104	225	198	25	175	177	153
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	0	6						2	8	2
Queuing Penalty (veh)	2	35						3	33	3

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	262	151	74	144	125	10	49	197	211
Average Queue (ft)	145	42	9	41	26	0	15	70	84
95th Queue (ft)	226	97	41	104	79	7	41	152	164
Link Distance (ft)	1077			2668	2668	2668	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	1								
Queuing Penalty (veh)	1								

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB	B47
Directions Served	LR	T
Maximum Queue (ft)	50	19
Average Queue (ft)	22	1
95th Queue (ft)	48	14
Link Distance (ft)	1061	855
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 102

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	162		157		333	850		0.1905	
2	EB Big Woods Blvd	None	332		111		208	1059		0.3137	
3	WB Big Woods Blvd	None	392		98		345	1051		0.3729	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	6.14		6.14	0.58		A		A
2	EB Big Woods Blvd	None	7.14		7.14	1.27		A		A
3	WB Big Woods Blvd	None	7.78		7.78	1.63		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	886		886
Capacity	veh/hr	2960		2960
Average Delay	sec/veh	6.25		6.25
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.54		1.54

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	688		300		482	986		0.6978	
2	EB Big Woods Blvd	None	314		471		517	830		0.3784	
3	WB Big Woods Blvd	None	640		142		643	1067		0.6000	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	15.14		15.14	6.05		C		C
2	EB Big Woods Blvd	None	8.97		8.97	1.56		A		A
3	WB Big Woods Blvd	None	11.64		11.64	3.96		B		B

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1642		1642
Capacity	veh/hr	2882		2882
Average Delay	sec/veh	11.60		11.60
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	5.29		5.29

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	372		257		294	795		0.4677	
2	WB CSAH 44	None	207		298		331	885		0.2338	
3	SB CSAH 11	None	394		129		376	983		0.4010	
4	EB CSAH 44	None	71		480		43	803		0.0884	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	9.48		9.48	2.13		A		A
2	WB CSAH 44	None	6.83		6.83	0.85		A		A
3	SB CSAH 11	None	8.19		8.19	1.82		A		A
4	EB CSAH 44	None	5.32		5.32	0.27		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1044		1044
Capacity	veh/hr	3467		3467
Average Delay	sec/veh	7.22		7.22
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.09		2.09

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	493		185		548	882		0.5589	
2	WB CSAH 44	None	516		366		312	940		0.5491	
3	SB CSAH 11	None	465		324		558	785		0.5924	
4	EB CSAH 44	None	51		682		107	630		0.0809	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	10.67		10.67	3.03		B		B
2	WB CSAH 44	None	11.53		11.53	3.58		B		B
3	SB CSAH 11	None	11.69		11.69	3.28		B		B
4	EB CSAH 44	None	6.16		6.16	0.23		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1525		1525
Capacity	veh/hr	3237		3237
Average Delay	sec/veh	10.14		10.14
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	4.30		4.30

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		455	0		0.0000	
2	EB CSAH 44	None	414		0		173	1756		0.2358	
3	WB CSAH 44	None	512		116		298	989		0.5176	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	5.38		5.38	1.14		A		A
3	WB CSAH 44	None	9.79		9.79	2.91		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	926		926
Capacity	veh/hr	2745		2745
Average Delay	sec/veh	6.82		6.82
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.75		1.75

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		572	0		0.0000	
2	EB CSAH 44	None	861		0		293	1892		0.4551	
3	WB CSAH 44	None	451		414		447	911		0.4951	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	9.25		9.25	4.44		A		A
3	WB CSAH 44	None	10.57		10.57	2.98		B		B

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1312		1312
Capacity	veh/hr	2803		2803
Average Delay	sec/veh	8.70		8.70
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.17		3.17

Operational Results

2030 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	350		0		398	1102		0.3177	
2	NB US 212 EXIT	Free	220	69	350	0	0	869	1229	0.2530	0.0562
3	WB CSAH 44	None	173		225		414	963		0.1796	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	6.92		6.92	1.31		A		A
2	NB US 212 EXIT	Free	7.12	0.56	5.56	0.94	0.00	A	A	A
3	WB CSAH 44	None	5.95		5.95	0.62		A		A

Global Results

Performance and Accidents

2030 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	743	69	812
Capacity	veh/hr	2934	1229	4163
Average Delay	sec/veh	5.78	0.28	5.31
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	1.19	0.01	1.20

Operational Results

2030 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	644		0		641	1102		0.5846	
2	NB US 212 EXIT	Free	347	219	644	0	0	649	1047	0.5350	0.2091
3	WB CSAH 44	None	293		348		862	899		0.3261	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	10.72		10.72	4.01		B		B
2	NB US 212 EXIT	Free	13.60	2.05	9.13	3.41	0.00	B	A	A
3	WB CSAH 44	None	7.94		7.94	1.39		A		A

Global Results

Performance and Accidents

2030 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1284	219	1503
Capacity	veh/hr	2649	1047	3696
Average Delay	sec/veh	9.86	1.05	8.58
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	3.52	0.06	3.58

Appendix H:

Design Year (2045) No-Build Analysis Reports

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	3.4	0.6	0.6	3.8	0.4
Total Del/Veh (s)	20.8	5.7	47.6	32.9	59.4	59.3	8.3	22.3

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.5	1.4	0.3
Total Del/Veh (s)	28.0	10.9	168.8	6.5	125.5	12.7	26.1

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	10.8	9.2	10.5
Total Del/Veh (s)	35.2	39.4	16.7	112.1	8.7	2.9	69.3	98.9	32.1	86.2	61.0	27.8

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	1.8
Total Del/Veh (s)	40.7

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.1	0.5	2.3	0.0	0.0	0.1	0.1	0.0	0.1	3.3	0.9	3.0
Total Del/Veh (s)	18.1	18.8	7.6	29.3	15.2	7.5	23.4	31.8	15.1	35.6	28.8	6.1

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	20.1

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.9	0.1	1.5	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	16.9	39.7	5.8	23.7	17.1	2.8	12.7	17.5	14.8	11.7	8.9	1.4

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	15.2

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.5	0.1	0.0	0.0	0.1	0.3
Total Del/Veh (s)	31.9	9.2	51.4	9.7	12.1	5.8	16.5

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.6	3.5	356.1	362.2	0.0	0.0	238.7
Total Del/Veh (s)	37.3	11.2	301.8	328.7	8.5	5.3	200.6

Total Zone Performance

Denied Del/Veh (s)	112.2
Total Del/Veh (s)	1931.4

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	420	469	353	311	240	207	195	164	95
Average Queue (ft)	204	217	77	41	135	103	86	71	42
95th Queue (ft)	383	404	249	155	216	181	164	137	77
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	2	5						0	
Queuing Penalty (veh)	19	35						0	

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	L	TR	R
Maximum Queue (ft)	737	724	206	162	17	151	225	195
Average Queue (ft)	263	236	11	68	1	55	93	56
95th Queue (ft)	602	574	104	130	14	123	162	125
Link Distance (ft)	909	909			669		775	
Upstream Blk Time (%)	0							
Queuing Penalty (veh)	0							
Storage Bay Dist (ft)			275	225		225		225
Storage Blk Time (%)		7					0	0
Queuing Penalty (veh)		3					1	0

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	B19	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	R	T	L	L	T	T	R	L	T
Maximum Queue (ft)	328	894	864	390	8	212	226	219	197	46	22	65
Average Queue (ft)	25	394	372	32	0	79	58	71	64	13	3	11
95th Queue (ft)	132	754	735	188	6	149	147	161	148	34	15	42
Link Distance (ft)		1228	1228		4206			909	909			1277
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		3	2									
Storage Bay Dist (ft)	210			210		250	250			150	240	
Storage Blk Time (%)		27	21			0	0	0	0			
Queuing Penalty (veh)		5	7			0	0	0	0			

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	NB	SB	SB	SB
Directions Served	R	L	L	TR
Maximum Queue (ft)	72	190	574	231
Average Queue (ft)	22	157	285	36
95th Queue (ft)	56	216	582	140
Link Distance (ft)	1277		547	
Upstream Blk Time (%)			11	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)		100		400
Storage Blk Time (%)		44	45	0
Queuing Penalty (veh)		124	128	0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	178	284	272	184	32	176	190	89	104	140	146	162
Average Queue (ft)	25	171	140	54	7	67	66	24	43	60	64	71
95th Queue (ft)	91	256	237	123	23	140	148	64	87	110	124	135
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175			175	175			175	225	225		
Storage Blk Time (%)		6	2	0		0	0					
Queuing Penalty (veh)		2	7	0		0	1					

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	51	199	235	156	102	86
Average Queue (ft)	11	97	145	74	14	32
95th Queue (ft)	38	184	210	130	55	69
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	26	56	58	55	156	182	84	70	275	284	299	103
Average Queue (ft)	3	11	17	11	60	102	25	17	82	20	98	36
95th Queue (ft)	15	37	42	36	126	164	58	48	208	119	221	77
Link Distance (ft)		1114	1114				757		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)										0	1	
Queuing Penalty (veh)										1	2	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	165	39
Average Queue (ft)	68	5
95th Queue (ft)	138	23
Link Distance (ft)	469	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	208	243	74	252	154	229	43	118	125	88
Average Queue (ft)	91	148	23	93	70	109	8	50	46	37
95th Queue (ft)	180	221	60	199	132	187	30	102	99	72
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)				0						
Queuing Penalty (veh)				1						
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)									1	0
Queuing Penalty (veh)									1	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	392	276	295	2706	2711	2713	72	101	100
Average Queue (ft)	209	55	47	2526	2570	2583	27	44	50
95th Queue (ft)	347	169	197	3159	3043	3112	63	89	90
Link Distance (ft)	1077			2650	2650	2650	360	360	360
Upstream Blk Time (%)				48	78	77			
Queuing Penalty (veh)				0	0	0			
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	6		0	4					
Queuing Penalty (veh)	6		0	8					

Zone Summary

Zone wide Queuing Penalty: 358

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.3	0.4	0.7	3.9	0.4
Total Del/Veh (s)	26.7	4.8	16.4	6.5	35.0	38.6	7.3	16.0

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	88.4	85.7	44.4
Total Del/Veh (s)	29.6	5.5	23.8	9.3	32.1	36.5	29.5

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.2	0.3	3.3	0.1	0.1	2.1	3.6	3.6
Total Del/Veh (s)	47.1	14.8	1.9	48.1	31.7	15.4	28.5	51.2	9.5	27.3	32.9	15.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	25.3

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.6	0.3	2.8	0.4	0.0	0.0	0.0	0.0	0.0	3.3	0.6	3.3
Total Del/Veh (s)	27.0	13.6	5.6	23.2	24.7	18.2	29.1	24.9	5.2	28.3	39.8	12.8

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	22.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.3	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	38.6	50.2	10.0	40.2	38.1	14.2	20.9	10.1	7.7	38.1	20.8	2.0

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	22.6

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	5.0	5.6	0.0	0.0	0.0	0.0	2.4
Total Del/Veh (s)	40.3	24.8	60.7	23.2	41.1	15.9	33.8

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.5	3.7	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	43.9	26.0	6.0	8.9	9.0	5.6	9.2

Total Zone Performance

Denied Del/Veh (s)	19.5
Total Del/Veh (s)	1331.8

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	209	234	77	72	168	151	63	102	65
Average Queue (ft)	86	110	23	13	85	61	20	39	29
95th Queue (ft)	181	206	59	47	145	121	48	83	57
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	1	1							
Queuing Penalty (veh)	2	2							

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	477	325	39	93	87	113	353	565	360
Average Queue (ft)	206	130	15	39	20	46	71	299	264
95th Queue (ft)	374	240	37	78	62	92	190	445	362
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		1						19	9
Queuing Penalty (veh)		0						181	82

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	95	233	182	28	74	139	642	645	300	60	50	88
Average Queue (ft)	37	109	82	4	35	17	274	289	134	21	11	34
95th Queue (ft)	79	198	150	18	68	137	576	593	335	52	35	67
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							1	3				
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		1	0				11	24				
Queuing Penalty (veh)		0	0				7	94				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	108	138	66
Average Queue (ft)	47	60	21
95th Queue (ft)	87	108	53
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	0	1	
Queuing Penalty (veh)	0	2	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	49	182	156	138	50	308	316	225	161	167	150	148
Average Queue (ft)	16	90	50	46	10	157	155	72	83	94	68	73
95th Queue (ft)	42	152	112	94	34	278	272	182	138	146	119	125
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	175			175	175			175	225	225		
Storage Blk Time (%)		0	0	0		7	6	0				
Queuing Penalty (veh)		0	0	0		1	23	0				

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	41	100	137	267	241	70
Average Queue (ft)	8	36	70	153	86	18
95th Queue (ft)	28	74	121	238	207	52
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	100	92	105	87	74	264	293	155	148	78	37	118
Average Queue (ft)	48	23	41	40	33	134	185	55	54	20	3	23
95th Queue (ft)	85	67	83	72	59	222	269	114	113	58	17	73
Link Distance (ft)			1114	1114				757		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						0	0					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	216	279	50
Average Queue (ft)	92	143	18
95th Queue (ft)	175	245	42
Link Distance (ft)		469	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	349	709	350	157	266	255	104	308	381	200
Average Queue (ft)	304	362	98	77	151	138	9	155	166	111
95th Queue (ft)	390	531	292	139	239	221	56	252	298	217
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	3	15						10	28	7
Queuing Penalty (veh)	28	131						20	117	13

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	253	141	41	104	116	57	192	214
Average Queue (ft)	135	56	9	35	35	19	80	79
95th Queue (ft)	220	109	31	83	88	48	134	139
Link Distance (ft)	1077			2636	2636	360	360	360
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Zone Summary

Zone wide Queuing Penalty: 712

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	17		23		10	1071		0.0159	
2	Creek Road WB	None	36		7		33	1105		0.0326	
3	Chaska Creek SB	None	26		7		36	1096		0.0237	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	3.37		3.37	0.05		A		A
2	Creek Road WB	None	3.49		3.49	0.09		A		A
3	Chaska Creek SB	None	3.40		3.40	0.07		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	79		79
Capacity	veh/hr	3272		3272
Average Delay	sec/veh	3.30		3.30
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.07		0.07

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	Creek Road EB	None	22		66		12	1049		0.0210	
2	Creek Road WB	None	41		7		81	1105		0.0371	
3	Chaska Creek SB	None	71		7		41	1096		0.0648	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	Creek Road EB	None	3.51		3.51	0.06		A		A
2	Creek Road WB	None	3.55		3.55	0.11		A		A
3	Chaska Creek SB	None	3.93		3.93	0.19		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	134		134
Capacity	veh/hr	3250		3250
Average Delay	sec/veh	3.50		3.50
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.13		0.13

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	385		318		358	693		0.5558	
2	WB CSAH 44	None	199		365		338	887		0.2244	
3	SB CSAH 11	None	511		125		439	950		0.5380	
4	EB CSAH 44	None	104		572		64	752		0.1382	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	11.01		11.01	2.69		B		B
2	WB CSAH 44	None	6.93		6.93	0.84		A		A
3	SB CSAH 11	None	10.11		10.11	3.03		B		B
4	EB CSAH 44	None	6.36		6.36	0.46		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1199		1199
Capacity	veh/hr	3282		3282
Average Delay	sec/veh	8.57		8.57
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.85		2.85

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	499		189		518	880		0.5670	
2	WB CSAH 44	None	392		440		248	897		0.4372	
3	SB CSAH 11	None	583		205		627	836		0.6976	
4	EB CSAH 44	None	74		633		155	646		0.1146	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	10.83		10.83	3.13		B		B
2	WB CSAH 44	None	9.82		9.82	2.28		A		A
3	SB CSAH 11	None	13.41		13.41	4.81		B		B
4	EB CSAH 44	None	6.52		6.52	0.34		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1548		1548
Capacity	veh/hr	3258		3258
Average Delay	sec/veh	10.36		10.36
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	4.45		4.45

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		523	0		0.0000	
2	EB CSAH 44	None	439		0		195	2005		0.2190	
3	WB CSAH 44	None	687		31		408	1034		0.6647	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	4.46		4.46	0.88		A		A
3	WB CSAH 44	None	12.36		12.36	5.23		B		B

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1126		1126
Capacity	veh/hr	3039		3039
Average Delay	sec/veh	8.28		8.28
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.59		2.59

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		250	0		0.0000	
2	EB CSAH 44	None	565		0		344	2005		0.2818	
3	WB CSAH 44	None	573		21		544	1120		0.5117	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	4.88		4.88	1.20		A		A
3	WB CSAH 44	None	9.47		9.47	3.04		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1138		1138
Capacity	veh/hr	3125		3125
Average Delay	sec/veh	6.19		6.19
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.96		1.96

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	346		0		207	1167		0.2964	
2	NB US 212 EXIT	Free	5	100	346	0	0	927	1264	0.0054	0.0791
3	WB CSAH 44	None	195		12		439	1075		0.1814	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	6.67		6.67	1.24		A		A
2	NB US 212 EXIT	Free	0.05	0.79	0.76	0.00	0.00	A	A	A
3	WB CSAH 44	None	5.54		5.54	0.61		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	546	100	646
Capacity	veh/hr	3169	1264	4433
Average Delay	sec/veh	5.24	0.40	4.49
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.80	0.01	0.81

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	250		0		384	1004		0.2491	
2	NB US 212 EXIT	Free	49	318	250	0	0	1023	1301	0.0479	0.2445
3	WB CSAH 44	None	334		50		567	1141		0.2928	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	6.30		6.30	0.88		A		A
2	NB US 212 EXIT	Free	4.06	2.22	2.47	0.15	0.00	A	A	A
3	WB CSAH 44	None	6.73		6.73	1.22		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	633	318	951
Capacity	veh/hr	3167	1301	4468
Average Delay	sec/veh	5.41	1.22	4.01
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	0.95	0.11	1.06

Appendix I:

Design Year (2045) Build Scenario 1 Analysis Reports

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	3.2	0.6	0.6	3.8	0.4
Total Del/Veh (s)	22.2	6.0	46.0	32.7	59.7	75.6	9.1	23.5

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.4	1.4	0.3
Total Del/Veh (s)	32.2	11.9	160.9	6.5	113.3	14.2	29.9

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.0	3.3	4.6	4.0
Total Del/Veh (s)	42.1	37.9	11.6	95.4	8.6	2.9	98.4	82.7	28.1	71.7	60.6	20.0

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	36.8

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.2	0.5	2.3	0.0	0.0	0.1	0.0	0.0	0.1	3.2	0.8	3.2
Total Del/Veh (s)	19.5	18.6	7.6	34.2	16.1	8.0	24.4	32.0	12.1	36.1	30.3	5.9

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	20.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.9	0.2	1.3	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	20.9	36.8	6.4	26.3	12.3	3.6	13.0	18.1	14.6	14.5	9.8	1.4

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	15.9

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.4	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	32.7	11.8	38.4	8.2	13.1	6.1	14.6

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.7	3.4	0.5	0.5	0.0	0.0	0.5
Total Del/Veh (s)	48.8	14.8	19.8	37.6	9.9	5.4	28.3

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.1	2.3	1.5	0.9	1.6

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	10.5	5.8	2.0	0.5	5.9	2.7	2.4

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.4	0.1	0.1	0.1
Total Del/Veh (s)	4.3	1.9	1.0	0.6	13.2	3.8	1.6

Total Zone Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	1102.1

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	448	524	359	160	251	220	198	166	102
Average Queue (ft)	217	223	74	33	148	107	87	79	42
95th Queue (ft)	404	425	244	103	223	187	150	147	74
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	4	6				0		0	
Queuing Penalty (veh)	30	44				0		0	

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	805	809	295	192	50	4	156	185	154
Average Queue (ft)	326	285	27	99	2	0	56	102	62
95th Queue (ft)	746	714	196	177	28	3	121	164	128
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	0	0							
Queuing Penalty (veh)	1	1							
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		11		0					
Queuing Penalty (veh)		5		0					

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	321	666	674	389	159	168	178	173	56	21	46	82
Average Queue (ft)	38	362	340	45	76	52	61	66	14	2	9	23
95th Queue (ft)	190	646	633	228	127	125	136	143	37	11	34	56
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		28	22		0	0	0	0				
Queuing Penalty (veh)		5	7		0	0	0	1				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	190	518	351
Average Queue (ft)	156	249	45
95th Queue (ft)	219	497	195
Link Distance (ft)		547	
Upstream Blk Time (%)		3	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	40	41	0
Queuing Penalty (veh)	113	117	0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	89	269	258	154	48	188	180	100	124	143	164	172
Average Queue (ft)	25	166	136	54	10	74	73	28	55	72	82	85
95th Queue (ft)	66	243	223	107	30	156	148	72	100	119	144	145
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		1	0			0	0					0
Queuing Penalty (veh)		0	1			0	0					0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	56	194	238	177	178	94
Average Queue (ft)	13	103	145	90	26	31
95th Queue (ft)	42	187	210	153	102	72
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	25	62	61	61	180	214	86	68	282	178	278	119
Average Queue (ft)	4	10	18	12	69	110	28	20	124	23	109	43
95th Queue (ft)	18	36	46	40	147	185	63	48	239	103	209	87
Link Distance (ft)		1114	1114				769		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)					0	0				0	1	
Queuing Penalty (veh)					0	0				1	2	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	188	42
Average Queue (ft)	73	5
95th Queue (ft)	141	24
Link Distance (ft)	449	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	232	258	117	204	185	194	68	126	124	97
Average Queue (ft)	95	151	33	89	86	112	11	58	51	39
95th Queue (ft)	193	228	75	163	156	179	39	108	102	78
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	0	0						0	1	0
Queuing Penalty (veh)	0	0						0	2	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	R	L	T	T
Maximum Queue (ft)	505	325	140	430	1103	1241	231	89	122	112
Average Queue (ft)	275	84	35	80	150	143	10	36	47	53
95th Queue (ft)	458	249	101	170	537	674	112	77	97	92
Link Distance (ft)	1077			2636	2636	2636		360	360	360
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		250	275				450			
Storage Blk Time (%)	18			0		0				
Queuing Penalty (veh)	19			0		1				

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	9
95th Queue (ft)	34
Link Distance (ft)	1061
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	B44	SB
Directions Served	LR	T	LT
Maximum Queue (ft)	66	110	70
Average Queue (ft)	17	0	6
95th Queue (ft)	52	0	34
Link Distance (ft)	639	449	2596
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	112	50
Average Queue (ft)	15	10
95th Queue (ft)	69	33
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 353

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.2	0.5	0.8	3.8	0.4
Total Del/Veh (s)	26.7	5.5	17.2	5.8	34.6	69.8	7.5	16.3

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	119.7	116.2	60.4
Total Del/Veh (s)	32.5	5.3	24.0	9.2	34.7	37.6	30.9

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.1	0.1	2.0	3.6	3.6
Total Del/Veh (s)	40.9	14.0	2.2	46.1	31.8	14.3	27.7	44.5	9.0	26.9	30.6	19.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	24.9

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.7	0.3	2.9	0.2	0.0	0.0	0.0	0.0	0.0	3.3	0.6	3.3
Total Del/Veh (s)	27.9	13.4	5.8	24.1	24.7	18.1	28.2	27.1	5.9	28.4	38.4	15.8

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	22.5

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	37.7	49.7	13.4	43.4	38.7	17.4	31.2	15.0	9.9	44.6	26.0	2.9

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	26.1

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	10.7	10.1	0.0	0.0	0.0	0.2	4.6
Total Del/Veh (s)	44.4	30.0	61.2	26.2	56.6	29.8	40.4

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.6	3.5	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	56.0	34.0	7.8	6.2	9.5	6.4	11.2

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.6	3.3	2.3	0.9	2.2

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	19.4	10.0	1.3	0.4	7.8	4.0	3.2

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.2	0.1	0.1	0.3
Total Del/Veh (s)	4.4	2.0	1.5	0.4	26.6	6.1	2.0

Total Zone Performance

Denied Del/Veh (s)	26.0
Total Del/Veh (s)	1225.8

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	176	203	105	119	184	148	51	98	84
Average Queue (ft)	81	105	24	18	95	59	19	43	36
95th Queue (ft)	144	174	65	66	161	115	42	84	66
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)		0							
Queuing Penalty (veh)		0							

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	456	289	42	118	84	113	262	533	359
Average Queue (ft)	224	147	14	45	22	45	63	302	274
95th Queue (ft)	378	244	37	87	64	91	139	439	362
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		0						22	10
Queuing Penalty (veh)		0						204	93

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	92	233	184	28	84	280	596	625	300	63	49	91
Average Queue (ft)	30	104	76	6	39	28	275	290	133	19	11	33
95th Queue (ft)	66	193	144	23	72	187	529	553	333	46	33	67
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		1	0				11	25	0			
Queuing Penalty (veh)		0	0				8	98	0			

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	104	134	86
Average Queue (ft)	47	63	23
95th Queue (ft)	86	119	62
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	0	2	
Queuing Penalty (veh)	1	4	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	57	156	139	123	88	328	362	250	172	166	146	156
Average Queue (ft)	20	89	47	49	12	153	150	78	84	94	81	89
95th Queue (ft)	48	142	100	93	65	277	282	195	142	149	131	141
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)						6	5	0				
Queuing Penalty (veh)						1	20	0				

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	32	105	140	251	229	75
Average Queue (ft)	9	35	66	145	75	22
95th Queue (ft)	29	72	112	227	187	59
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				0	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	89	76	128	97	82	301	345	151	178	168	45	175
Average Queue (ft)	46	21	45	41	37	149	202	65	77	47	4	38
95th Queue (ft)	80	66	98	76	69	254	305	131	144	131	24	118
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)						0	1					0
Queuing Penalty (veh)						0	1					1

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB	B44
Directions Served	L	T	R	T
Maximum Queue (ft)	273	390	54	13
Average Queue (ft)	97	219	18	0
95th Queue (ft)	196	357	43	9
Link Distance (ft)		469		450
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	0	2		
Storage Bay Dist (ft)	325		325	
Storage Blk Time (%)		2		
Queuing Penalty (veh)		3		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	349	530	350	155	293	290	152	475	534	200
Average Queue (ft)	314	358	125	74	184	168	16	236	265	168
95th Queue (ft)	383	477	339	133	272	257	85	508	566	248
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)								0	0	
Queuing Penalty (veh)								0	0	
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	5	16						26	46	22
Queuing Penalty (veh)	41	136						58	242	49

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	393	243	48	164	161	70	216	232
Average Queue (ft)	215	72	11	58	43	26	89	81
95th Queue (ft)	353	177	39	129	109	61	160	155
Link Distance (ft)	1077			2668	2668	360	360	360
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)	9							
Queuing Penalty (veh)	9							

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB	B47
Directions Served	LR	T
Maximum Queue (ft)	47	33
Average Queue (ft)	16	1
95th Queue (ft)	42	17
Link Distance (ft)	1061	855
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	93	91
Average Queue (ft)	34	4
95th Queue (ft)	73	49
Link Distance (ft)	639	2596
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	89	49
Average Queue (ft)	7	17
95th Queue (ft)	44	41
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 971

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	108		284		224	813		0.1329	
2	EB Big Woods Drive	None	424		126		266	1021		0.4153	
3	NB Access B	None	18		483		67	582		0.0309	
4	WB Big Woods Dr	None	438		70		431	1033		0.4238	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	5.61		5.61	0.39		A		A
2	EB Big Woods Drive	None	8.36		8.36	1.92		A		A
3	NB Access B	None	5.22		5.22	0.07		A		A
4	WB Big Woods Dr	None	8.31		8.31	1.95		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	988		988
Capacity	veh/hr	3449		3449
Average Delay	sec/veh	7.03		7.03
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.93		1.93

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	458		452		321	907		0.5050	
2	EB Big Woods Drive	None	364		332		578	811		0.4489	
3	NB Access B	None	66		671		25	746		0.0885	
4	WB Big Woods Dr	None	664		109		628	1050		0.6326	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	10.91		10.91	2.77		B		B
2	EB Big Woods Drive	None	9.43		9.43	1.87		A		A
3	NB Access B	None	5.84		5.84	0.26		A		A
4	WB Big Woods Dr	None	12.10		12.10	4.29		B		B

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1552		1552
Capacity	veh/hr	3514		3514
Average Delay	sec/veh	9.88		9.88
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	4.26		4.26

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	468		350		414	702		0.6667	
2	WB CSAH 44	None	267		394		424	825		0.3236	
3	SB CSAH 11	None	552		173		488	925		0.5968	
4	EB CSAH 44	None	103		661		64	680		0.1514	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	13.30		13.30	4.19		B		B
2	WB CSAH 44	None	8.20		8.20	1.35		A		A
3	SB CSAH 11	None	11.36		11.36	3.85		B		B
4	EB CSAH 44	None	6.98		6.98	0.50		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1390		1390
Capacity	veh/hr	3132		3132
Average Delay	sec/veh	10.10		10.10
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	3.90		3.90

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	621		228		656	860		0.7218	
2	WB CSAH 44	None	577		486		363	870		0.6634	
3	SB CSAH 11	None	625		340		723	778		0.8037	
4	EB CSAH 44	None	74		810		155	565		0.1310	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	14.56		14.56	5.75		B		B
2	WB CSAH 44	None	15.38		15.38	6.02		C		C
3	SB CSAH 11	None	17.63		17.63	7.62		C		C
4	EB CSAH 44	None	7.55		7.55	0.40		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1897		1897
Capacity	veh/hr	3073		3073
Average Delay	sec/veh	14.56		14.56
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	7.67		7.67

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		602	0		0.0000	
2	EB CSAH 44	None	532		0		235	1756		0.3030	
3	WB CSAH 44	None	727		110		422	992		0.7327	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	5.64		5.64	1.46		A		A
3	WB CSAH 44	None	14.75		14.75	7.23		B		B

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1259		1259
Capacity	veh/hr	2748		2748
Average Delay	sec/veh	9.90		9.90
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.46		3.46

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		568	0		0.0000	
2	EB CSAH 44	None	945		0		385	1892		0.4995	
3	WB CSAH 44	None	614		339		606	951		0.6459	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	8.71		8.71	4.34		A		A
3	WB CSAH 44	None	13.66		13.66	5.66		B		B

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1559		1559
Capacity	veh/hr	2843		2843
Average Delay	sec/veh	9.66		9.66
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	4.18		4.18

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	439		0		445	1167		0.3761	
2	NB US 212 EXIT	Free	203	100	439	0	0	880	1264	0.2306	0.0791
3	WB CSAH 44	None	235		210		532	974		0.2413	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	7.58		7.58	1.78		A		A
2	NB US 212 EXIT	Free	7.04	0.79	4.98	0.87	0.00	A	A	A
3	WB CSAH 44	None	6.60		6.60	0.90		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	877	100	977
Capacity	veh/hr	3021	1264	4285
Average Delay	sec/veh	6.19	0.40	5.60
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	1.51	0.01	1.52

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	630		0		665	1004		0.6277	
2	NB US 212 EXIT	Free	278	318	630	0	0	772	1261	0.3599	0.2521
3	WB CSAH 44	None	385		280		946	1018		0.3783	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	11.35		11.35	4.25		B		B
2	NB US 212 EXIT	Free	9.77	2.26	5.76	1.80	0.00	A	A	A
3	WB CSAH 44	None	8.31		8.31	1.85		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1293	318	1611
Capacity	veh/hr	2794	1261	4055
Average Delay	sec/veh	9.10	1.26	7.55
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	3.27	0.11	3.38

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	3.4	0.6	0.5	3.8	0.4
Total Del/Veh (s)	19.8	8.2	46.6	34.8	62.4	66.8	9.0	23.0

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.5	0.0	0.0	0.0	3.3	1.4	0.6
Total Del/Veh (s)	44.1	15.9	163.3	6.1	125.0	16.2	37.0

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.4	0.8	0.0	0.0	0.0	0.2	0.0	0.1	22.4	16.2	24.4
Total Del/Veh (s)	40.7	43.2	16.7	155.6	7.9	2.5	77.6	94.8	51.7	101.6	83.0	47.1

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	3.7
Total Del/Veh (s)	49.3

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.2	0.5	2.3	0.2	0.0	0.2	0.1	0.0	0.1	3.2	0.8	3.1
Total Del/Veh (s)	19.5	19.8	7.5	29.4	15.2	7.3	24.3	33.3	14.9	36.0	29.4	6.1

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	20.7

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.2	1.2	0.2	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.0
Total Del/Veh (s)	21.6	41.1	6.8	30.8	13.9	4.0	14.6	20.9	16.4	14.4	10.0	1.8

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	18.1

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.5	0.0	0.0	0.0	0.1	0.3
Total Del/Veh (s)	31.9	11.9	40.0	10.1	13.4	6.2	15.5

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.7	3.2	0.5	0.5	0.0	0.0	0.5
Total Del/Veh (s)	30.8	10.5	32.2	26.6	12.2	5.5	23.4

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.1
Total Del/Veh (s)	3.5	2.4	1.6	0.8	1.6

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.0	0.1
Total Del/Veh (s)	13.0	5.7	2.2	0.6	5.5	2.9	2.6

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.4	0.1	0.1	0.2
Total Del/Veh (s)	3.5	1.8	1.0	0.4	16.6	3.6	1.6

Total Zone Performance

Denied Del/Veh (s)	2.6
Total Del/Veh (s)	1109.9

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	359	374	363	319	255	210	188	199	83
Average Queue (ft)	176	216	143	70	145	103	93	85	42
95th Queue (ft)	327	382	351	211	224	187	163	160	72
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	1	4						0	
Queuing Penalty (veh)	8	29						1	

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	TR	R
Maximum Queue (ft)	895	896	475	163	127	214	192
Average Queue (ft)	468	440	58	85	52	123	72
95th Queue (ft)	960	917	305	158	113	204	158
Link Distance (ft)	909	909				775	
Upstream Blk Time (%)	1	1					
Queuing Penalty (veh)	13	9					
Storage Bay Dist (ft)			275	225	225		225
Storage Blk Time (%)		23				0	0
Queuing Penalty (veh)		11				1	0

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	321	857	868	390	268	283	257	234	50	32	61	157
Average Queue (ft)	29	414	391	67	155	142	62	53	13	7	10	52
95th Queue (ft)	166	832	808	286	271	294	210	160	35	25	39	125
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		1	1									
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		29	26	0	6	4		0				
Queuing Penalty (veh)		6	15	0	19	14		0				

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	190	583	425
Average Queue (ft)	168	308	60
95th Queue (ft)	215	613	240
Link Distance (ft)		547	
Upstream Blk Time (%)		14	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	56	47	0
Queuing Penalty (veh)	159	134	0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	118	294	265	119	89	187	182	136	102	132	148	151
Average Queue (ft)	29	182	140	52	14	72	68	30	47	67	74	77
95th Queue (ft)	84	269	233	96	53	149	145	82	90	113	129	131
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		2	0			0						
Queuing Penalty (veh)		1	1			0						

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	79	194	240	172	136	91
Average Queue (ft)	20	92	143	86	23	33
95th Queue (ft)	53	182	210	146	80	75
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	24	53	62	43	230	277	101	89	312	326	345	100
Average Queue (ft)	3	9	18	9	76	126	28	23	134	71	125	42
95th Queue (ft)	14	35	43	32	165	216	67	55	262	217	259	86
Link Distance (ft)		1114	1114				769		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)						0			0	0	2	
Queuing Penalty (veh)						0			0	2	5	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	174	42
Average Queue (ft)	80	6
95th Queue (ft)	156	28
Link Distance (ft)	449	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	197	243	94	201	196	222	54	141	128	114
Average Queue (ft)	93	144	35	93	105	121	10	61	52	43
95th Queue (ft)	181	212	75	162	169	190	36	115	101	84
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)		0						0	1	0
Queuing Penalty (veh)		0						0	1	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	R	L	T	T
Maximum Queue (ft)	355	235	254	533	1025	651	461	89	118	124
Average Queue (ft)	211	48	56	129	194	179	91	34	47	50
95th Queue (ft)	319	134	170	338	611	472	332	72	98	94
Link Distance (ft)	1077			2636	2636	2636		360	360	360
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		250	275				450			
Storage Blk Time (%)	5		1	3		0				
Queuing Penalty (veh)	5		1	8		1				

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB	B47	B47
Directions Served	LR	T	
Maximum Queue (ft)	45	23	27
Average Queue (ft)	6	1	1
95th Queue (ft)	28	12	14
Link Distance (ft)	1061	855	855
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	B44	B44	SB
Directions Served	LR	T		LT
Maximum Queue (ft)	74	27	30	96
Average Queue (ft)	20	1	2	10
95th Queue (ft)	59	15	19	55
Link Distance (ft)	639	449	449	2596
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	108	39
Average Queue (ft)	12	8
95th Queue (ft)	58	28
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 447

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.3	0.3	0.8	4.0	0.3
Total Del/Veh (s)	27.8	5.7	16.8	7.7	35.7	70.9	8.1	17.2

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	205.7	206.1	104.5
Total Del/Veh (s)	61.5	6.6	25.1	9.1	35.4	38.7	41.3

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	0.7	1.9	0.1	0.5	2.3	3.5	3.8
Total Del/Veh (s)	43.8	34.0	6.9	43.9	38.6	15.8	23.0	27.5	15.3	26.3	35.5	16.6

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	32.2

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.0	0.3	2.8	2.2	0.0	0.0	0.2	0.0	0.2	3.3	0.6	3.3
Total Del/Veh (s)	25.5	13.9	5.7	30.9	23.7	15.9	26.9	24.8	5.0	28.7	38.9	14.5

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.7

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.3	1.8	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	39.5	49.0	14.0	43.7	38.8	15.3	28.4	11.6	8.8	58.0	26.1	3.1

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	26.2

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	19.7	19.9	0.0	0.0	0.1	0.2	8.6
Total Del/Veh (s)	45.1	30.7	59.5	25.6	48.2	21.0	37.8

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.6	3.4	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	52.6	30.5	7.2	6.2	10.6	5.9	10.3

12: Johnathan Carver Pkwy Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.2	0.0	0.0
Total Del/Veh (s)	5.4	3.0	1.9	0.9	2.1

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	17.5	6.4	1.5	0.4	7.9	4.1	3.3

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.5	0.1	0.1	0.3
Total Del/Veh (s)	8.5	2.4	1.4	0.7	20.4	6.9	2.2

Total Zone Performance

Denied Del/Veh (s)	47.4
Total Del/Veh (s)	1312.6

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	169	194	89	96	181	139	60	102	76
Average Queue (ft)	91	121	20	19	94	57	22	43	31
95th Queue (ft)	144	176	57	63	160	111	48	87	60
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	741	626	132	107	79	99	353	574	360
Average Queue (ft)	457	290	24	40	27	43	76	324	282
95th Queue (ft)	826	600	117	83	68	83	209	459	384
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	1	0						0	
Queuing Penalty (veh)	4	0						0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		11						27	5
Queuing Penalty (veh)		6						270	52

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	139	345	310	117	114	420	639	653	300	77	63	165
Average Queue (ft)	46	179	151	33	71	76	323	335	145	29	12	78
95th Queue (ft)	160	395	360	160	110	302	600	619	347	61	46	140
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)							0	0				
Queuing Penalty (veh)							1	2				
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		10	7				17	31	0			
Queuing Penalty (veh)		5	3				31	119	2			

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	140	139	78
Average Queue (ft)	54	53	23
95th Queue (ft)	105	106	59
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	1	2	
Queuing Penalty (veh)	2	3	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	45	171	121	139	82	309	320	237	163	169	124	154
Average Queue (ft)	13	97	52	49	17	143	136	63	82	98	66	75
95th Queue (ft)	38	157	104	99	57	260	250	156	132	155	117	125
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)						5	3	0				
Queuing Penalty (veh)						1	13	0				

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	54	126	189	288	236	82
Average Queue (ft)	11	41	75	152	79	23
95th Queue (ft)	38	91	143	252	194	63
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				1	0	
Queuing Penalty (veh)				1	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	132	66	101	82	74	308	359	149	186	118	52	137
Average Queue (ft)	52	24	44	40	32	165	215	55	81	31	5	29
95th Queue (ft)	102	64	88	73	60	280	330	112	156	81	29	86
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)	0					0	2					
Queuing Penalty (veh)	0					0	2					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB	B44
Directions Served	L	T	R	T
Maximum Queue (ft)	281	412	59	14
Average Queue (ft)	110	217	21	1
95th Queue (ft)	220	361	46	10
Link Distance (ft)		469		450
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	0	3		
Storage Bay Dist (ft)	325		325	
Storage Blk Time (%)	0	2		
Queuing Penalty (veh)	1	3		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	349	607	350	196	311	295	89	399	427	200
Average Queue (ft)	315	370	104	78	178	160	10	207	198	146
95th Queue (ft)	388	499	299	151	274	250	48	334	345	238
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	4	17						25	39	19
Queuing Penalty (veh)	33	150						56	206	42

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	383	287	102	135	126	32	60	240	242
Average Queue (ft)	212	65	13	55	44	2	26	84	84
95th Queue (ft)	337	162	53	111	102	17	53	159	157
Link Distance (ft)	1077			2668	2668	2668	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	7								
Queuing Penalty (veh)	7								

Intersection: 12: Johnathan Carver Pkwy

Movement	WB	B47	B47
Directions Served	LR	T	
Maximum Queue (ft)	55	106	95
Average Queue (ft)	17	5	6
95th Queue (ft)	44	41	41
Link Distance (ft)	1061	855	855
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	B44	B44	SB
Directions Served	LR	T		LT
Maximum Queue (ft)	79	8	11	95
Average Queue (ft)	35	0	0	7
95th Queue (ft)	66	6	8	43
Link Distance (ft)	639	469	469	2596
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	152	72
Average Queue (ft)	17	19
95th Queue (ft)	91	52
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 1019

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		569	0		0.0000	
2	EB CSAH 44	None	499		0		235	1756		0.2842	
3	WB CSAH 44	None	727		77		422	1009		0.7205	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	5.28		5.28	1.25		A		A
3	WB CSAH 44	None	14.16		14.16	6.78		B		B

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1226		1226
Capacity	veh/hr	2765		2765
Average Delay	sec/veh	9.55		9.55
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.25		3.25

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		423	0		0.0000	
2	EB CSAH 44	None	800		0		385	1892		0.4228	
3	WB CSAH 44	None	614		194		606	1028		0.5975	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	6.97		6.97	2.72		A		A
3	WB CSAH 44	None	11.71		11.71	4.45		B		B

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1414		1414
Capacity	veh/hr	2920		2920
Average Delay	sec/veh	8.03		8.03
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.15		3.15

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	404		0		367	1102		0.3668	
2	NB US 212 EXIT	Free	125	100	404	0	0	843	1229	0.1483	0.0814
3	WB CSAH 44	None	235		132		497	1012		0.2323	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	7.47		7.47	1.63		A		A
2	NB US 212 EXIT	Free	5.97	0.82	3.68	0.49	0.00	A	A	A
3	WB CSAH 44	None	6.35		6.35	0.85		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	764	100	864
Capacity	veh/hr	2956	1229	4185
Average Delay	sec/veh	5.92	0.41	5.28
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	1.26	0.01	1.27

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	486		0		551	1102		0.4412	
2	NB US 212 EXIT	Free	164	318	486	0	0	803	1229	0.2043	0.2588
3	WB CSAH 44	None	385		166		802	994		0.3874	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	8.40		8.40	2.23		A		A
2	NB US 212 EXIT	Free	6.99	2.29	3.89	0.72	0.00	A	A	A
3	WB CSAH 44	None	8.15		8.15	1.78		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1035	318	1353
Capacity	veh/hr	2898	1229	4127
Average Delay	sec/veh	7.09	1.29	5.73
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	2.04	0.11	2.15

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	69		284		119	813		0.0849	
2	EB Big Woods Drive	None	398		91		262	1041		0.3825	
3	NB Access B	None	18		422		67	605		0.0298	
4	WB Big Woods Dr	None	359		44		396	1047		0.3430	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	4.96		4.96	0.24		A		A
2	EB Big Woods Drive	None	7.85		7.85	1.67		A		A
3	NB Access B	None	5.02		5.02	0.07		A		A
4	WB Big Woods Dr	None	7.28		7.28	1.39		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	844		844
Capacity	veh/hr	3505		3505
Average Delay	sec/veh	6.38		6.38
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.50		1.50

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	290		452		170	907		0.3198	
2	EB Big Woods Drive	None	327		188		554	875		0.3737	
3	NB Access B	None	66		490		25	842		0.0784	
4	WB Big Woods Dr	None	550		72		484	1071		0.5137	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	8.09		8.09	1.28		A		A
2	EB Big Woods Drive	None	8.04		8.04	1.39		A		A
3	NB Access B	None	5.14		5.14	0.23		A		A
4	WB Big Woods Dr	None	9.64		9.64	2.70		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1233		1233
Capacity	veh/hr	3694		3694
Average Delay	sec/veh	7.64		7.64
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.62		2.62

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	468		325		414	690		0.6784	
2	WB CSAH 44	None	262		395		398	869		0.3016	
3	SB CSAH 11	None	526		173		484	927		0.5675	
4	EB CSAH 44	None	104		635		64	721		0.1443	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	13.31		13.31	4.17		B		B
2	WB CSAH 44	None	7.91		7.91	1.27		A		A
3	SB CSAH 11	None	10.79		10.79	3.42		B		B
4	EB CSAH 44	None	6.68		6.68	0.48		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1360		1360
Capacity	veh/hr	3206		3206
Average Delay	sec/veh	9.81		9.81
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.71		3.71

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	621		191		655	879		0.7063	
2	WB CSAH 44	None	553		486		326	870		0.6357	
3	SB CSAH 11	None	588		340		698	778		0.7561	
4	EB CSAH 44	None	74		772		155	583		0.1268	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	13.89		13.89	5.37		B		B
2	WB CSAH 44	None	14.46		14.46	5.30		B		B
3	SB CSAH 11	None	15.85		15.85	6.20		C		C
4	EB CSAH 44	None	7.28		7.28	0.39		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1836		1836
Capacity	veh/hr	3110		3110
Average Delay	sec/veh	13.44		13.44
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	6.85		6.85

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Chaska Creek Blvd	None	130		7		75	930		0.1398	
2	EB Creek Road	None	17		127		10	1002		0.0170	
3	NB Chaska Creek Blvd	None	39		40		104	737		0.0529	
4	WB Creek Dr	None	36		46		33	1032		0.0349	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Chaska Creek Blvd	None	5.15		5.15	0.40		A		A
2	EB Creek Road	None	3.58		3.58	0.05		A		A
3	NB Chaska Creek Blvd	None	4.45		4.45	0.13		A		A
4	WB Creek Dr	None	3.68		3.68	0.10		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	222		222
Capacity	veh/hr	3700		3700
Average Delay	sec/veh	4.18		4.18
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.26		0.26

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Chaska Creek Blvd	None	221		7		210	1096		0.2016	
2	EB Creek Road	None	22		216		12	981		0.0224	
3	NB Chaska Creek Blvd	None	169		88		150	1054		0.1603	
4	WB Creek Dr	None	41		176		81	1008		0.0407	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Chaska Creek Blvd	None	5.80		5.80	0.66		A		A
2	EB Creek Road	None	3.77		3.77	0.06		A		A
3	NB Chaska Creek Blvd	None	5.38		5.38	0.50		A		A
4	WB Creek Dr	None	3.91		3.91	0.11		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	453		453
Capacity	veh/hr	4139		4139
Average Delay	sec/veh	4.56		4.56
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.57		0.57

Appendix K:

Turn Lane Warrant Analysis

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	3.3	0.7	0.1	3.7	0.5
Total Del/Veh (s)	22.9	5.9	47.8	30.9	60.4	27.0	9.8	23.9

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	3.2	1.4	0.3
Total Del/Veh (s)	38.5	15.4	170.8	7.1	126.7	14.3	34.5

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	8.6	10.6	10.6
Total Del/Veh (s)	49.5	50.7	18.2	110.4	8.3	2.9	61.1	84.6	48.0	87.3	71.7	30.9

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	1.5
Total Del/Veh (s)	46.8

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.2	0.5	2.2	0.1	0.0	0.1	0.0	0.0	0.0	3.3	0.8	3.2
Total Del/Veh (s)	21.9	20.1	7.8	33.9	16.8	7.7	26.3	31.9	14.1	38.3	30.3	7.0

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	21.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.5	0.1	1.4	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	21.8	37.8	6.6	28.8	14.2	4.0	15.1	20.2	16.3	13.8	10.8	1.6

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	17.5

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.5	0.0	0.0	0.0	0.1	0.2
Total Del/Veh (s)	31.5	13.1	36.6	9.8	13.0	6.5	15.0

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.8	3.1	0.4	0.5	0.0	0.0	0.5
Total Del/Veh (s)	33.1	12.1	20.4	31.4	13.1	6.3	24.0

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.6	2.8	1.5	0.9	1.8

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.0	6.7	2.3	0.6	5.2	3.4	3.0

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.5	0.1	0.1	0.1
Total Del/Veh (s)	4.2	2.2	1.1	0.8	20.9	6.5	1.9

Total Zone Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	1170.1

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	418	420	371	202	278	246	211	167	101
Average Queue (ft)	229	232	96	32	147	114	80	73	48
95th Queue (ft)	404	408	303	106	230	203	159	142	85
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	3	6						0	
Queuing Penalty (veh)	27	44						0	

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	855	824	390	233	154	23	136	212	175
Average Queue (ft)	409	369	36	108	9	1	53	101	56
95th Queue (ft)	882	865	226	213	70	17	110	175	122
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	1	0							
Queuing Penalty (veh)	7	5							
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		17		4	0			0	0
Queuing Penalty (veh)		8		7	0			1	0

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	B19	B19	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	R	T	T	L	L	T	T	R	L
Maximum Queue (ft)	326	790	790	390	147	146	166	171	201	168	41	16
Average Queue (ft)	27	470	441	51	22	22	83	62	64	54	12	1
95th Queue (ft)	146	915	894	251	205	205	143	142	153	126	33	7
Link Distance (ft)		1228	1228		4206	4206			909	909		
Upstream Blk Time (%)		3	3									
Queuing Penalty (veh)		27	24									
Storage Bay Dist (ft)	210			210			250	250			150	240
Storage Blk Time (%)		34	26						0	0		
Queuing Penalty (veh)		7	9						0	0		

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	L	TR
Maximum Queue (ft)	70	105	190	562	423
Average Queue (ft)	11	28	156	282	56
95th Queue (ft)	40	82	216	565	222
Link Distance (ft)	1277	1277		547	
Upstream Blk Time (%)				8	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)			100		400
Storage Blk Time (%)			43	42	0
Queuing Penalty (veh)			123	120	0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	130	305	285	149	32	198	184	78	130	130	143	157
Average Queue (ft)	30	180	145	50	7	74	75	23	57	69	72	78
95th Queue (ft)	87	271	243	108	24	156	161	60	104	113	124	137
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		2	1			0	0					
Queuing Penalty (veh)		1	3			0	0					

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	56	233	256	185	160	98
Average Queue (ft)	15	99	147	97	27	34
95th Queue (ft)	42	200	223	162	99	79
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)		0	1			
Queuing Penalty (veh)		0	1			

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	R	R	L	L	TR	L	T	T	R	L
Maximum Queue (ft)	28	44	53	50	185	220	101	82	302	342	320	99
Average Queue (ft)	4	8	18	10	71	115	28	24	131	38	120	39
95th Queue (ft)	19	31	42	35	145	192	65	59	259	185	251	79
Link Distance (ft)		1114	1114				769		1037	1037		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190			190	300	300		450			225	325
Storage Blk Time (%)						0				0	2	
Queuing Penalty (veh)						0				0	6	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	234	60
Average Queue (ft)	89	9
95th Queue (ft)	179	35
Link Distance (ft)	449	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		325
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	202	246	85	160	194	225	45	136	129	106
Average Queue (ft)	98	153	31	84	106	123	8	59	54	45
95th Queue (ft)	183	225	66	145	168	196	29	109	108	85
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)		0						0	1	0
Queuing Penalty (veh)		0						0	2	0

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	R	L	T	T
Maximum Queue (ft)	434	322	116	224	519	858	362	107	140	160
Average Queue (ft)	243	62	34	84	123	66	19	41	53	60
95th Queue (ft)	384	182	89	170	349	428	158	84	104	116
Link Distance (ft)	1077			2636	2636	2636		360	360	360
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		250	275				450			
Storage Blk Time (%)	10					0				
Queuing Penalty (veh)	10					1				

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	8
95th Queue (ft)	29
Link Distance (ft)	1061
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	84	4	118
Average Queue (ft)	26	0	16
95th Queue (ft)	68	3	63
Link Distance (ft)	639	470	2596
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	104	60
Average Queue (ft)	21	10
95th Queue (ft)	70	38
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 433

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.3	0.4	0.4	3.9	0.4
Total Del/Veh (s)	25.6	5.9	17.0	6.2	36.7	34.0	7.8	15.9

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	102.5	109.7	56.7
Total Del/Veh (s)	40.1	6.1	24.7	9.2	34.7	36.3	32.7

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.2	2.9	0.2	0.1	2.0	3.9	3.8
Total Del/Veh (s)	41.3	14.6	1.9	49.2	32.6	16.6	27.1	43.6	9.3	26.9	35.8	17.6

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	25.6

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.7	0.3	2.8	0.3	0.0	0.0	0.1	0.0	0.1	3.3	0.6	3.2
Total Del/Veh (s)	27.9	13.7	6.4	23.5	24.1	17.6	27.4	25.2	5.8	28.4	41.0	16.3

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	22.5

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.4	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	35.1	48.0	15.3	41.6	37.9	15.8	35.5	16.4	10.0	51.1	31.8	3.7

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.5

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	15.3	14.8	0.0	0.0	0.0	0.0	6.3
Total Del/Veh (s)	44.0	30.2	63.1	28.2	59.1	33.7	41.6

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.6	3.5	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	59.5	34.9	8.5	6.3	11.9	6.7	12.2

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.9	4.1	2.6	1.0	2.7

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.1	0.0	0.0	0.0
Total Del/Veh (s)	36.1	21.0	1.7	0.5	12.0	5.9	5.5

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.7	0.1	0.1	0.3
Total Del/Veh (s)	8.4	2.6	1.6	0.8	17.7	6.3	2.5

Total Zone Performance

Denied Del/Veh (s)	25.2
Total Del/Veh (s)	1318.7

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	156	191	85	112	183	155	55	111	78
Average Queue (ft)	73	102	26	22	90	59	17	43	36
95th Queue (ft)	124	163	66	69	158	125	43	86	62
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	502	376	137	109	98	121	306	559	360
Average Queue (ft)	258	171	22	49	20	47	76	295	261
95th Queue (ft)	482	331	114	93	64	98	193	432	355
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		4						19	9
Queuing Penalty (veh)		2						178	84

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	L	L	T	T	R	L	T	R
Maximum Queue (ft)	90	215	180	27	74	315	589	617	300	73	53	104
Average Queue (ft)	34	103	81	3	39	34	279	295	131	22	12	34
95th Queue (ft)	73	184	154	17	69	224	584	602	330	54	36	74
Link Distance (ft)		1228	1228				909	909			1277	1277
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)	210			210	250	250			150	240		
Storage Blk Time (%)		0	0				10	24	0			
Queuing Penalty (veh)		0	0				7	95	1			

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	SB	SB	SB
Directions Served	L	L	TR
Maximum Queue (ft)	117	143	82
Average Queue (ft)	47	62	23
95th Queue (ft)	96	115	60
Link Distance (ft)		547	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	100		400
Storage Blk Time (%)	1	2	
Queuing Penalty (veh)	1	4	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	52	166	145	183	77	348	373	249	152	159	140	159
Average Queue (ft)	17	90	51	57	11	151	151	75	87	95	77	85
95th Queue (ft)	43	150	113	124	50	284	291	197	134	142	130	140
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)				0		6	5	0				
Queuing Penalty (veh)				0		1	20	0				

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	28	96	212	324	271	69
Average Queue (ft)	8	38	70	156	88	20
95th Queue (ft)	27	74	135	258	211	53
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				1	0	
Queuing Penalty (veh)				2	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	96	63	100	102	85	311	341	208	234	178	90	145
Average Queue (ft)	48	19	37	46	35	148	206	68	85	56	8	38
95th Queue (ft)	83	60	79	82	63	266	310	149	174	135	41	101
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)						0	2					
Queuing Penalty (veh)						0	2					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB	B44
Directions Served	L	T	R	T
Maximum Queue (ft)	331	446	139	25
Average Queue (ft)	119	268	28	2
95th Queue (ft)	252	445	139	28
Link Distance (ft)		469		450
Upstream Blk Time (%)	0	1	0	
Queuing Penalty (veh)	0	9	0	
Storage Bay Dist (ft)	325		325	
Storage Blk Time (%)		7		
Queuing Penalty (veh)		13		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	350	720	347	141	317	300	214	481	602	200
Average Queue (ft)	304	358	100	81	197	181	32	247	292	177
95th Queue (ft)	382	526	282	133	288	280	126	438	536	244
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	5	15					0	33	49	32
Queuing Penalty (veh)	41	131					0	78	284	76

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	L	T	T
Maximum Queue (ft)	435	295	58	154	137	119	210	222
Average Queue (ft)	240	81	14	63	48	36	87	82
95th Queue (ft)	385	205	42	128	105	79	153	158
Link Distance (ft)	1077			2668	2668	360	360	360
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		250	275					
Storage Blk Time (%)	13							
Queuing Penalty (veh)	13							

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB	B47
Directions Served	LR	T
Maximum Queue (ft)	52	104
Average Queue (ft)	22	4
95th Queue (ft)	48	52
Link Distance (ft)	1061	855
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	NB	B44	B44	SB
Directions Served	LR	TR	T		LT
Maximum Queue (ft)	190	19	14	15	197
Average Queue (ft)	61	1	1	1	21
95th Queue (ft)	141	11	11	11	111
Link Distance (ft)	639	450	469	469	2596
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 15: Chaska Blvd & Access D

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	177	4	55
Average Queue (ft)	19	0	24
95th Queue (ft)	91	3	47
Link Distance (ft)	769	1447	506
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1040

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	162		326		333	793		0.2042	
2	EB Big Woods Drive	None	467		188		300	987		0.4731	
3	NB Access B	None	29		555		100	555		0.0523	
4	WB Big Woods Dr	None	554		105		479	1015		0.5457	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	6.69		6.69	0.64		A		A
2	EB Big Woods Drive	None	9.37		9.37	2.43		A		A
3	NB Access B	None	5.75		5.75	0.13		A		A
4	WB Big Woods Dr	None	10.22		10.22	3.15		B		B

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1212		1212
Capacity	veh/hr	3350		3350
Average Delay	sec/veh	8.33		8.33
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	2.81		2.81

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	688		480		482	892		0.7715	
2	EB Big Woods Drive	None	422		498		668	736		0.5730	
3	NB Access B	None	100		884		36	633		0.1580	
4	WB Big Woods Dr	None	797		165		819	1018		0.7828	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	19.88		19.88	8.80		C		C
2	EB Big Woods Drive	None	12.18		12.18	2.96		B		B
3	NB Access B	None	7.86		7.86	0.51		A		A
4	WB Big Woods Dr	None	17.59		17.59	8.38		C		C

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2007		2007
Capacity	veh/hr	3280		3280
Average Delay	sec/veh	15.76		15.76
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	C		C
Total Delay	veh.hrs	8.79		8.79

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	506		366		440	695		0.7278	
2	WB CSAH 44	None	299		407		465	818		0.3656	
3	SB CSAH 11	None	570		196		510	914		0.6239	
4	EB CSAH 44	None	104		702		64	660		0.1576	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	14.91		14.91	5.31		B		B
2	WB CSAH 44	None	8.79		8.79	1.63		A		A
3	SB CSAH 11	None	12.02		12.02	4.30		B		B
4	EB CSAH 44	None	7.24		7.24	0.53		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1479		1479
Capacity	veh/hr	3086		3086
Average Delay	sec/veh	11.03		11.03
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	4.53		4.53

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	681		247		724	851		0.8003	
2	WB CSAH 44	None	668		507		419	857		0.7793	
3	SB CSAH 11	None	645		407		767	749		0.8616	
4	EB CSAH 44	None	74		896		155	525		0.1409	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	17.57		17.57	8.19		C		C
2	WB CSAH 44	None	21.35		21.35	11.12		C		C
3	SB CSAH 11	None	21.10		21.10	10.15		C		C
4	EB CSAH 44	None	8.19		8.19	0.44		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	2068		2068
Capacity	veh/hr	2982		2982
Average Delay	sec/veh	18.57		18.57
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	C		C
Total Delay	veh.hrs	10.67		10.67

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		642	0		0.0000	
2	EB CSAH 44	None	579		0		254	1756		0.3298	
3	WB CSAH 44	None	746		150		429	972		0.7677	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	6.12		6.12	1.76		A		A
3	WB CSAH 44	None	16.34		16.34	8.68		C		C

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1325		1325
Capacity	veh/hr	2727		2727
Average Delay	sec/veh	10.88		10.88
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	4.00		4.00

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		727	0		0.0000	
2	EB CSAH 44	None	1134		0		405	1892		0.5994	
3	WB CSAH 44	None	634		498		636	866		0.7319	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	11.29		11.29	7.33		B		B
3	WB CSAH 44	None	18.11		18.11	9.10		C		C

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1768		1768
Capacity	veh/hr	2758		2758
Average Delay	sec/veh	12.73		12.73
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	6.25		6.25

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	486		0		562	1102		0.4412	
2	NB US 212 EXIT	Free	301	100	486	0	0	803	1229	0.3750	0.0814
3	WB CSAH 44	None	254		308		579	920		0.2762	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	8.40		8.40	2.23		A		A
2	NB US 212 EXIT	Free	9.03	0.82	6.98	1.70	0.00	A	A	A
3	WB CSAH 44	None	7.24		7.24	1.09		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1041	100	1141
Capacity	veh/hr	2824	1229	4053
Average Delay	sec/veh	7.30	0.41	6.70
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	2.11	0.01	2.12

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	820		0		796	1102		0.7444	
2	NB US 212 EXIT	Free	392	318	819	0	0	455	875	0.8616	0.3636
3	WB CSAH 44	None	405		392		1135	876		0.4625	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	15.14		15.14	8.35		C		C
2	NB US 212 EXIT	Free	42.42	2.82	24.68	19.23	0.00	E	A	C
3	WB CSAH 44	None	9.97		9.97	2.45		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1617	318	1935
Capacity	veh/hr	2432	875	3307
Average Delay	sec/veh	19.46	1.82	16.56
L.O.S. (Signal)	A – F	B	A	B
L.O.S. (Unsig)	A – F	C	A	C
Total Delay	veh.hrs	8.74	0.16	8.90

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	3.3	0.6	0.8	3.8	0.5
Total Del/Veh (s)	20.7	8.1	46.9	34.6	61.8	63.0	9.1	23.4

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	1.2	0.1	0.1	0.0	34.5	34.8	8.0
Total Del/Veh (s)	61.9	29.3	157.6	10.9	138.0	51.3	56.0

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	2.9	0.6	0.0	0.0	0.1	0.2	0.0	0.2	47.2	44.6	45.8
Total Del/Veh (s)	73.0	76.3	38.6	501.3	9.4	2.9	105.3	100.0	98.3	123.6	104.7	50.6

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	8.8
Total Del/Veh (s)	94.4

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.1	0.5	2.2	0.3	0.0	0.2	0.1	0.0	0.1	3.2	0.9	3.2
Total Del/Veh (s)	22.0	20.9	7.3	33.5	17.1	7.9	26.0	33.2	15.5	39.1	31.4	5.5

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	22.2

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	4.2	0.1	1.5	0.2	0.1	0.0	0.3	0.2	0.3	0.0	0.1	0.0
Total Del/Veh (s)	26.3	38.3	6.4	28.1	13.3	3.6	14.4	22.0	16.7	15.5	9.8	1.4

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.9

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.9	3.3	0.0	0.0	0.1	0.2	0.3
Total Del/Veh (s)	31.9	14.4	38.9	10.4	12.8	6.4	15.4

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.8	3.3	0.5	0.5	0.0	0.0	0.5
Total Del/Veh (s)	36.0	12.8	34.2	27.9	12.5	5.9	25.3

12: Johnathan Carver Pkwy & Access A Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.1	0.1
Total Del/Veh (s)	4.5	2.7	1.6	0.8	1.7

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.1	0.0	0.0	0.1
Total Del/Veh (s)	13.4	6.8	2.6	0.8	6.4	3.5	3.2

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.1	0.3	0.2	0.1	0.1	0.2
Total Del/Veh (s)	4.1	2.2	1.0	0.2	50.1	3.4	1.9

Total Zone Performance

Denied Del/Veh (s)	7.3
Total Del/Veh (s)	1211.3

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	334	386	378	346	252	228	183	176	107
Average Queue (ft)	179	226	153	69	156	105	93	82	45
95th Queue (ft)	315	389	373	232	239	204	164	153	80
Link Distance (ft)		669	669	669	1120	1120		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)	0	5						0	
Queuing Penalty (veh)	4	40						0	

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	923	920	475	198	123	111	253	600	308
Average Queue (ft)	657	617	149	86	20	9	58	250	130
95th Queue (ft)	1120	1076	506	173	101	66	167	639	306
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	4	3						12	
Queuing Penalty (veh)	45	35						0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		36		0	0			20	1
Queuing Penalty (veh)		18		0	0			71	4

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	B19	B19	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	R	T	T	L	L	T	T	R	L
Maximum Queue (ft)	389	1306	1318	390	459	501	375	500	837	812	64	41
Average Queue (ft)	47	616	605	92	66	75	293	343	358	242	12	9
95th Queue (ft)	237	1323	1319	350	340	378	443	592	992	794	39	30
Link Distance (ft)		1228	1228		4206	4206			909	909		
Upstream Blk Time (%)		12	11						17	0		
Queuing Penalty (veh)		102	94						86	1		
Storage Bay Dist (ft)	210			210			250	250			150	240
Storage Blk Time (%)		40	35				62	56		0		
Queuing Penalty (veh)		8	25				194	176		0		

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	L	TR
Maximum Queue (ft)	98	262	190	577	425
Average Queue (ft)	10	103	172	362	90
95th Queue (ft)	58	240	213	687	331
Link Distance (ft)	1277	1277		547	
Upstream Blk Time (%)				25	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)			100		400
Storage Blk Time (%)			61	56	0
Queuing Penalty (veh)			175	159	0

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	175	340	279	119	82	212	221	138	115	123	153	146
Average Queue (ft)	35	202	150	49	16	71	71	30	54	70	74	77
95th Queue (ft)	100	305	250	91	53	153	160	88	98	111	130	133
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	225			225	225	225		
Storage Blk Time (%)		5	1			1	0					
Queuing Penalty (veh)		2	3			0	1					

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	81	201	247	186	135	80
Average Queue (ft)	24	108	154	85	20	34
95th Queue (ft)	63	200	233	146	80	70
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	27	10	50	52	45	194	239	90	84	347	339	298
Average Queue (ft)	2	0	8	17	10	72	112	26	23	139	69	133
95th Queue (ft)	15	7	33	46	34	149	191	61	53	272	222	257
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)							0			0	1	1
Queuing Penalty (veh)							0			0	6	4

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	113	216	48
Average Queue (ft)	42	83	7
95th Queue (ft)	87	172	30
Link Distance (ft)		449	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	325		325
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	216	248	100	203	174	258	62	133	128	114
Average Queue (ft)	95	148	40	87	107	127	13	55	53	46
95th Queue (ft)	189	221	82	160	164	197	44	108	108	92
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)		0						0	1	1
Queuing Penalty (veh)		0						0	2	1

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	R	L	T	T
Maximum Queue (ft)	543	325	259	534	943	692	440	94	128	151
Average Queue (ft)	255	66	64	145	249	212	87	41	50	58
95th Queue (ft)	421	212	183	366	737	605	315	78	102	104
Link Distance (ft)	1077			2636	2636	2636		360	360	360
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)		250	275				450			
Storage Blk Time (%)	11		0	4		0				
Queuing Penalty (veh)	12		0	10		0				

Intersection: 12: Johnathan Carver Pkwy & Access A

Movement	WB	B47	B47
Directions Served	LR	T	
Maximum Queue (ft)	38	40	33
Average Queue (ft)	7	1	1
95th Queue (ft)	28	12	17
Link Distance (ft)	1061	855	855
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	B44	B44	SB
Directions Served	LR	T		LT
Maximum Queue (ft)	82	354	48	132
Average Queue (ft)	25	6	2	16
95th Queue (ft)	69	86	25	71
Link Distance (ft)	639	449	449	2596
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: Chaska Blvd & Access D

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	94	61
Average Queue (ft)	21	12
95th Queue (ft)	68	39
Link Distance (ft)	769	506
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 1277

1: US 212 EB Ramps & Engler Blvd Performance by movement

Movement	EBL	EBT	WBT	WBR	NBL	NBT	NBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	3.2	0.5	0.2	3.9	0.4
Total Del/Veh (s)	28.7	6.3	17.0	7.5	35.2	33.4	8.0	17.7

2: US 212 WB Ramps & Engler Blvd Performance by movement

Movement	EBT	EBR	WBL	WBT	SBL	SBR	All
Denied Del/Veh (s)	2.0	0.0	0.0	0.0	243.8	243.8	124.3
Total Del/Veh (s)	94.0	10.1	26.0	8.8	36.8	38.7	52.8

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.2	0.3	1.5	0.1	0.7	2.3	3.7	3.7
Total Del/Veh (s)	87.9	92.3	36.0	45.0	33.2	13.3	24.5	37.9	25.2	27.3	33.1	15.4

3: Chaska Creek Blvd & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	43.1

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.8	0.3	2.8	2.3	0.1	0.0	0.2	0.0	0.4	3.3	0.6	3.4
Total Del/Veh (s)	27.1	13.9	6.1	25.4	24.3	15.9	26.6	24.7	5.4	28.4	37.8	15.1

4: Johnathan Carver Pkwy & Engler Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.8

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.4	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Total Del/Veh (s)	36.6	46.8	14.6	42.0	43.5	18.0	35.6	14.1	9.0	45.8	37.0	4.4

9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	28.1

10: Johnathan Carver Pkwy & US 212 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	18.5	16.8	0.0	0.0	0.1	0.2	7.7
Total Del/Veh (s)	46.8	33.1	64.0	26.5	66.2	36.7	44.2

11: Johnathan Carver Pkwy & US 212 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.6	3.5	0.3	0.2	0.0	0.0	0.3
Total Del/Veh (s)	57.1	31.6	8.0	6.3	13.4	6.1	11.2

12: Johnathan Carver Pkwy Performance by movement

Movement	WBR	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.1
Total Del/Veh (s)	6.4	4.2	2.5	0.9	2.7

14: Johnathan Carver Pkwy & Access C Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	32.2	19.2	2.0	0.7	9.7	5.5	5.0

15: Chaska Blvd & Access D Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.5	0.1	0.1	0.3
Total Del/Veh (s)	6.5	2.4	1.6	0.8	25.1	6.9	2.4

Total Zone Performance

Denied Del/Veh (s)	54.7
Total Del/Veh (s)	1322.8

Intersection: 1: US 212 EB Ramps & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	T	T	R	LT	R
Maximum Queue (ft)	172	206	80	80	186	126	65	100	82
Average Queue (ft)	92	122	21	20	93	56	20	42	37
95th Queue (ft)	137	173	57	58	155	112	47	85	66
Link Distance (ft)		669	669	669	1124	1124		745	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300						330		210
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: US 212 WB Ramps & Engler Blvd

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	L	TR	R
Maximum Queue (ft)	930	868	299	105	100	99	352	620	360
Average Queue (ft)	716	386	33	40	29	40	78	330	276
95th Queue (ft)	1024	706	159	82	83	81	203	488	381
Link Distance (ft)	909	909			669	669		775	
Upstream Blk Time (%)	3	0						0	
Queuing Penalty (veh)	18	0						0	
Storage Bay Dist (ft)			275	225			225		225
Storage Blk Time (%)		19						28	4
Queuing Penalty (veh)		11						289	46

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	EB	EB	EB	EB	B19	B19	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	R	T	T	L	L	T	T	R	L
Maximum Queue (ft)	267	787	745	254	6	11	132	350	607	603	300	95
Average Queue (ft)	79	347	310	107	0	0	81	95	284	297	131	43
95th Queue (ft)	291	893	854	366	4	0	120	321	527	556	336	81
Link Distance (ft)		1228	1228		4206	4206			909	909		
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		2	0									
Storage Bay Dist (ft)	210			210			250	250			150	240
Storage Blk Time (%)		30	25						13	25		
Queuing Penalty (veh)		15	17						31	98		

Intersection: 3: Chaska Creek Blvd & Engler Blvd

Movement	NB	NB	SB	SB	SB
Directions Served	T	R	L	L	TR
Maximum Queue (ft)	154	282	128	127	53
Average Queue (ft)	16	130	58	57	19
95th Queue (ft)	70	241	106	106	48
Link Distance (ft)	1277	1277		547	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			100		400
Storage Blk Time (%)	0		2	2	
Queuing Penalty (veh)	0		3	2	

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	57	162	150	126	95	315	331	237	146	173	142	145
Average Queue (ft)	17	94	55	48	15	160	155	83	82	100	71	75
95th Queue (ft)	44	155	120	95	62	293	292	212	126	152	114	130
Link Distance (ft)		1391	1391			4206	4206				855	855
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	225			225	175			175	225	225		
Storage Blk Time (%)						7	6	0				
Queuing Penalty (veh)						1	23	0				

Intersection: 4: Johnathan Carver Pkwy & Engler Blvd

Movement	NB	SB	SB	SB	SB	SB
Directions Served	R	L	L	T	T	R
Maximum Queue (ft)	58	101	207	315	263	82
Average Queue (ft)	12	39	78	145	83	21
95th Queue (ft)	41	77	144	252	207	57
Link Distance (ft)				1144	1144	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	225	275	275			275
Storage Blk Time (%)				0	0	
Queuing Penalty (veh)				1	0	

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	R	L	L	TR	L	T	T	R
Maximum Queue (ft)	127	127	110	102	88	294	354	177	213	146	56	114
Average Queue (ft)	56	27	40	43	38	152	206	67	100	42	8	33
95th Queue (ft)	102	78	88	80	69	251	300	143	180	107	35	86
Link Distance (ft)			1114	1114				769		1037	1037	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	190	190			190	300	300		450			225
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	2					

Intersection: 9: Johnathan Carver Pkwy & Levi Griffin Rd/Chaska Blvd

Movement	SB	SB	SB	B44
Directions Served	L	T	R	T
Maximum Queue (ft)	311	534	221	200
Average Queue (ft)	113	306	41	12
95th Queue (ft)	277	505	192	117
Link Distance (ft)		469		450
Upstream Blk Time (%)	0	3	0	0
Queuing Penalty (veh)	0	25	0	2
Storage Bay Dist (ft)	325		325	
Storage Blk Time (%)		12		
Queuing Penalty (veh)		22		

Intersection: 10: Johnathan Carver Pkwy & US 212 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LT	R	L	T	T	T	T	T	R
Maximum Queue (ft)	349	612	350	185	283	287	224	638	679	200
Average Queue (ft)	313	376	113	83	191	166	25	297	307	182
95th Queue (ft)	386	518	306	151	277	262	115	579	639	240
Link Distance (ft)		1104		360	360	360		1037	1037	
Upstream Blk Time (%)								0	0	
Queuing Penalty (veh)								1	1	
Storage Bay Dist (ft)	275		275				150			100
Storage Blk Time (%)	4	16						40	52	35
Queuing Penalty (veh)	38	143						94	303	82

Intersection: 11: Johnathan Carver Pkwy & US 212 EB Ramps

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	T	T	T	R	L	T	T
Maximum Queue (ft)	393	323	100	146	135	82	95	227	256
Average Queue (ft)	226	83	17	61	47	3	33	84	82
95th Queue (ft)	365	221	62	127	106	38	74	162	160
Link Distance (ft)	1077			2668	2668	2668	360	360	360
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		250	275						
Storage Blk Time (%)	10								
Queuing Penalty (veh)	10								

Intersection: 12: Johnathan Carver Pkwy

Movement	WB	B47	B47
Directions Served	LR	T	
Maximum Queue (ft)	55	59	48
Average Queue (ft)	19	2	3
95th Queue (ft)	45	22	25
Link Distance (ft)	1061	855	855
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Johnathan Carver Pkwy & Access C

Movement	WB	B44	B44	SB
Directions Served	LR	T		LT
Maximum Queue (ft)	130	83	73	180
Average Queue (ft)	51	5	5	14
95th Queue (ft)	104	43	40	82
Link Distance (ft)	639	469	469	2596
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 15: Chaska Blvd & Access D

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	154	4	72
Average Queue (ft)	19	0	26
95th Queue (ft)	81	3	53
Link Distance (ft)	769	1447	506
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1280

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Chaska Creek Blvd	None	184		7		95	930		0.1979	
2	EB Creek Road	None	17		181		10	972		0.0175	
3	NB Chaska Creek Blvd	None	59		40		158	737		0.0801	
4	WB Creek Dr	None	36		66		33	1020		0.0353	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Chaska Creek Blvd	None	5.91		5.91	0.61		A		A
2	EB Creek Road	None	3.69		3.69	0.05		A		A
3	NB Chaska Creek Blvd	None	4.79		4.79	0.19		A		A
4	WB Creek Dr	None	3.72		3.72	0.10		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	296		296
Capacity	veh/hr	3658		3658
Average Delay	sec/veh	4.58		4.58
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.38		0.38

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Chaska Creek Blvd	None	298		7		294	1096		0.2719	
2	EB Creek Road	None	22		293		12	941		0.0234	
3	NB Chaska Creek Blvd	None	253		88		227	1054		0.2400	
4	WB Creek Dr	None	41		260		81	965		0.0425	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Chaska Creek Blvd	None	6.48		6.48	0.98		A		A
2	EB Creek Road	None	3.93		3.93	0.06		A		A
3	NB Chaska Creek Blvd	None	6.33		6.33	0.83		A		A
4	WB Creek Dr	None	4.09		4.09	0.12		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	614		614
Capacity	veh/hr	4056		4056
Average Delay	sec/veh	5.25		5.25
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	0.90		0.90

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	681		192		724	744		0.9152	
2	WB CSAH 44	None	633		505		364	801		0.7901	
3	SB CSAH 11	None	590		407		730	813		0.7253	
4	EB CSAH 44	None	74		842		155	616		0.1201	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	20.50		20.50	10.94		C		C
2	WB CSAH 44	None	22.29		22.29	12.22		C		C
3	SB CSAH 11	None	16.05		16.05	6.90		C		C
4	EB CSAH 44	None	7.19		7.19	0.40		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1978		1978
Capacity	veh/hr	2975		2975
Average Delay	sec/veh	18.26		18.26
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	C		C
Total Delay	veh.hrs	10.03		10.03

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	NB CSAH 11	None	681		192		724	879		0.7750	
2	WB CSAH 44	None	633		508		365	857		0.7385	
3	SB CSAH 11	None	590		408		732	749		0.7882	
4	EB CSAH 44	None	74		842		155	552		0.1340	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	NB CSAH 11	None	16.13		16.13	7.22		C		C
2	WB CSAH 44	None	18.84		18.84	8.83		C		C
3	SB CSAH 11	None	17.50		17.50	7.18		C		C
4	EB CSAH 44	None	7.74		7.74	0.42		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1978		1978
Capacity	veh/hr	3037		3037
Average Delay	sec/veh	16.11		16.11
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	C		C
Total Delay	veh.hrs	8.85		8.85

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		591	0		0.0000	
2	EB CSAH 44	None	528		0		254	1756		0.3007	
3	WB CSAH 44	None	746		99		429	998		0.7476	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	5.54		5.54	1.41		A		A
3	WB CSAH 44	None	15.23		15.23	7.76		C		C

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1274		1274
Capacity	veh/hr	2754		2754
Average Delay	sec/veh	10.21		10.21
L.O.S. (Signal)	A – F	B		B
L.O.S. (Unsig)	A – F	B		B
Total Delay	veh.hrs	3.61		3.61

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	US 212 Entrance Ramp	None	0		0		510	0		0.0000	
2	EB CSAH 44	None	917		0		405	1892		0.4847	
3	WB CSAH 44	None	634		281		636	981		0.6460	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	US 212 Entrance Ramp	None	0.00		0.00	0.00		A		A
2	EB CSAH 44	None	8.11		8.11	3.80		A		A
3	WB CSAH 44	None	13.35		13.35	5.60		B		B

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1551		1551
Capacity	veh/hr	2873		2873
Average Delay	sec/veh	9.25		9.25
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.99		3.99

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	434		0		444	1102		0.3940	
2	NB US 212 EXIT	Free	183	100	434	0	0	828	1229	0.2210	0.0814
3	WB CSAH 44	None	254		190		527	981		0.2588	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	7.80		7.80	1.83		A		A
2	NB US 212 EXIT	Free	7.03	0.82	4.83	0.80	0.00	A	A	A
3	WB CSAH 44	None	6.75		6.75	0.98		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	871	100	971
Capacity	veh/hr	2911	1229	4140
Average Delay	sec/veh	6.33	0.41	5.72
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	1.53	0.01	1.54

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	EB CSAH 44	None	602		0		630	1102		0.5465	
2	NB US 212 EXIT	Free	223	318	602	0	0	746	1229	0.2990	0.2588
3	WB CSAH 44	None	405		225		918	963		0.4206	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	EB CSAH 44	None	10.01		10.01	3.42		B		B
2	NB US 212 EXIT	Free	8.50	2.29	4.85	1.22	0.00	A	A	A
3	WB CSAH 44	None	8.76		8.76	2.06		A		A

Global Results

Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1230	318	1548
Capacity	veh/hr	2810	1229	4039
Average Delay	sec/veh	8.33	1.29	6.88
L.O.S. (Signal)	A – F	A	A	A
L.O.S. (Unsig)	A – F	A	A	A
Total Delay	veh.hrs	2.84	0.11	2.96

Operational Results

2045 AM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	103		326		178	793		0.1298	
2	EB Big Woods Drive	None	429		136		293	1016		0.4221	
3	NB Access B	None	29		465		100	589		0.0493	
4	WB Big Woods Dr	None	437		67		427	1035		0.4224	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	5.67		5.67	0.38		A		A
2	EB Big Woods Drive	None	8.48		8.48	1.97		A		A
3	NB Access B	None	5.40		5.40	0.12		A		A
4	WB Big Woods Dr	None	8.28		8.28	1.93		A		A

Global Results

Performance and Accidents

2045 AM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	998		998
Capacity	veh/hr	3433		3433
Average Delay	sec/veh	7.07		7.07
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	1.96		1.96

Operational Results

2045 PM Peak - 60 minutes

Flows and Capacity

Leg	Leg Names	Bypass Type	Flows (veh/hr)					Capacity (veh/hr)			
			Arrival Flow		Opposing Flow		Exit Flow	Capacity		Average VCR	
			Entry	Bypass	Entry	Bypass		Entry	Bypass	Entry	Bypass
1	SB Access B	None	435		480		257	892		0.4879	
2	EB Big Woods Drive	None	366		281		634	833		0.4391	
3	NB Access B	None	100		611		36	777		0.1287	
4	WB Big Woods Dr	None	628		109		602	1050		0.5981	

Delays, Queues and Level of Service

Leg	Leg Names	Bypass Type	Average Delay (sec)			95% Queue (veh)		Level of Service		
			Entry	Bypass	Leg	Entry	Bypass	Entry	Bypass	Leg
1	SB Access B	None	10.72		10.72	2.59		B		B
2	EB Big Woods Drive	None	9.13		9.13	1.80		A		A
3	NB Access B	None	6.24		6.24	0.40		A		A
4	WB Big Woods Dr	None	11.33		11.33	3.74		B		B

Global Results

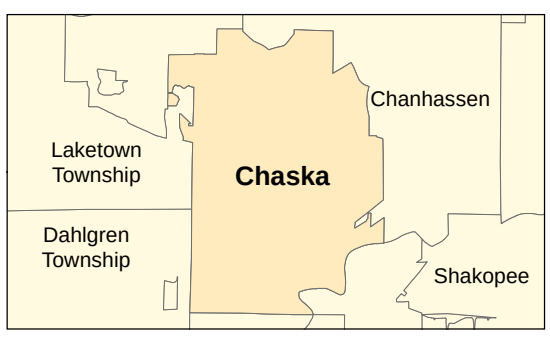
Performance and Accidents

2045 PM Peak Global Performance

Parameter	Units	Entries	Bypasses	Total
Arrive Flows	veh/hr	1529		1529
Capacity	veh/hr	3552		3552
Average Delay	sec/veh	9.32		9.32
L.O.S. (Signal)	A – F	A		A
L.O.S. (Unsig)	A – F	A		A
Total Delay	veh.hrs	3.96		3.96

Appendix E: Existing Trunk Sewer System Figure





Trunk Sewer System
Chaska, Minnesota
Comprehensive Sewer Plan

Map 1

0 750 1,500 3,000 4,500 6,000 Feet

1 inch = 2,500 feet (At original document size of 11x17)

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Revised: 2019-08-07 By: hduan

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City of Chaska

APPENDIX F: COMMENT RESPONSES

OVERVIEW

Pursuant to Minnesota Rules, part 4410.3610, subpart 5a(C), the Responsible Governmental Unit (RGU) shall revise the environmental analysis document based on comments received during the comment period. The RGU shall include in the document a section specifically responding to each timely, substantive comment received that indicates in what way the comment has been addressed.

The 30-day Alternative Urban Areawide Review (AUAR) comment period began December 30, 2025, and comments were accepted through February 5, 2026. During the public and agency comment period, comments were received from five government agencies. Responses to the agency comments are included in Table 1. Copies of the comment letters are included in Attachment G.

Table 1. Agency Comments

Comment	Response
1. Minnesota Pollution Control Agency	
The DAUAR indicates that the Blue Lake WRRF has the capacity to treat 32 MGD. This should be corrected to state that the Blue Lake WRRF has a capacity to treat the permitted average wet weather design flow of 42 MGD.	This has been revised in the Final AUAR.
The DAUAR should indicate the type of wastewater that will be generated by the proposed project (domestic, industrial).	The proposed development is commercial and industrial for both scenarios. The anticipated wastewater is domestic and light industrial. This has been added to the Final AUAR.
A figure of the existing sanitary sewer system features in the project area should be provided in the DAUAR.	This figure has been added as Appendix E in the Final AUAR.
Include that Chaska Creek (07020012-803) is impaired for Fish Bioassessment and Invertebrate bioassessment and there are no TMDLs for those impairments.	This has been added to the Final AUAR.
Include the year of Impaired Waters List that was used.	This has been added to the Final AUAR.
Good to see a chloride management section. Another resource could be the Minnesota Stormwater Manual low Salt Design strategies and design principles.	Comment noted. This resource has also been included in the Stormwater section of the Final AUAR.
2. Minnesota Department of Agriculture	
Background	Comment noted.

Comment	Response
The MDA has historically played a significant role in the preservation of agriculture as an industry and a vocation, as well as preserving the farmland that is the natural resource base of agriculture. We recognize that land use change is inevitable especially within urban areas. Nonetheless, agricultural production, in particular specialty food crops, can provide economic, environmental, and public health benefits to urban communities. We encourage the planning processes involved in guiding future land use change in Prior Lake to consider the benefits of incorporating local food production in plans for future development.	
Local food production is an umbrella term for a wide variety of activities that can be classified as either small-scale commercial or recreational. Small-scale commercial farms provide a variety of fresh food to local markets through direct sales to consumers or through sales to schools, restaurants, and retail stores. When allowed, they can also attract tourists though fun seasonal activities, educational opportunities, and outdoor events. These small businesses can be economically successful on small parcels of 'leftover' land that are oddly shaped or too small for other forms of development in commercial, industrial, and low-density residential areas. Recreational local food production typically takes the form of community gardens, often incorporated into park and open space areas within residential areas. Community gardens can improve residents' diet, physical fitness, mental health, and social connectedness, and have even been shown to improve public safety and raise nearby property values. They add the most value in medium- and high-density residential settings. Additionally, urban agriculture and community gardens can help provide environmental benefits important to cities such as combatting urban heat islands, reducing runoff, sequestering carbon, and supporting pollinators. When perennial crops such as fruit trees and bushes are planted, they can also provide shade and contribute to the tree canopy. Finally, setting aside land for local food production in the AUAR can help the City of Prior Lake advance further in the GreenStep Cities program through Best Practice #27: Local Food as well as the new Gold Leaf Challenge.	Comment noted. The proposed development is located in the City of Chaska. Chaska is not currently in the GreenStep Cities program.
Opportunities within the Prior Lake AUAR The MDA encourages the City of Chaska to consider two modifications to the Big Woods Business Park AUAR scenarios to preserve more space for local food production. These changes would help	Comment noted.

Comment	Response
reduce the Urban Heat Island effect, lower the number of cooling degree days, reduce the intensity of stormwater runoff, as well as some of the other benefits mentioned above. Recommendation #1 • Expand the greenbelt area within the AUAR study area (easier to do in Scenario 1 than 2) • Allow certain types of agricultural activities within the greenbelt, such as those already allowed in the RR1 and RR2 zoning districts • Modify the RR1 and RR2 districts to explicitly allow hoop houses (also known as high tunnels) as permitted uses, as these are by far the most common structures needed on small farms. • If only RR2 is being considered for the Greenbelt, consider instead a mix of RR1 and RR2 to allow for different sized farms to use the space Recommendation #2 • Allow some urban agriculture uses to as permitted or conditional uses in the Business Park or Commercial areas. These could include: • Rooftop farming • Indoor agriculture (also known as Controlled Environment Agriculture), including hydroponics, aquaponics, mushroom cultivation, and "freight container farms" • Greenhouses • Community gardens	
3. Metropolitan Council	
Item 6: Project Description *(MacKenzie Young-Walters, 651-602-1373)* It is unlikely that both the baseline and maximum development scenarios will maintain 76 acres of rural residential/greenbelt, especially since Table 3 shows Scenario 2 contemplating 70 more acres of impervious surface than Scenario 1. Figure 4 shows the greenbelt area cutting through currently cultivated areas that are presumably prime for development and not the areas of high value natural resources the greenbelt is intended to preserve. Given this, Table 1 should be revised to have Scenario 2 reflect the reduced greenbelt area that would presumably result from a maximum development scenario.	Additional development/impervious surface described in Scenario 2 is not intended to extend into the Greenbelt area. Because exact locations of development are not known at this time, the AUAR will assume that 76 acres of greenbelt could remain post-development in the maximum development scenario.
Item 7: Climate *(MacKenzie Young-Walters, 651-602-1373)* The discussion of anticipated climate trends and associated adaptations are adequate. Given the large amount of parking surface typically associated with developments of this nature, low salt design and a project specific chloride management plan should be considered to help offset the	Comment noted. Chloride management is discussed in Item 12. Both scenarios will plant trees and incorporate landscaped areas (described further in Item 8).

Comment	Response
impact of increased freeze/thaw cycles on water resources. Additionally, opportunities for additional tree planting should be identified to mitigate the loss of 19 acres of mature trees and help minimize the urban heat island effect created by the project's impervious surface.	
Item 9: Permits and Approvals *(MacKenzie Young-Walters, 651-602-1373)* A comprehensive plan amendment will be required if business park development is proposed for the areas guided Rural Residential.	Comment noted. Item 10 of the AUAR states "An amendment to the 2040 Comprehensive Plan would be needed for both scenarios to accommodate development within the Chaska Green Belt".
Item 10: Land Use *(Colin Kelly, 651-602-1361)* The Southwest Regional Trail is approximately 0.1-mile north of the study area, additionally while a long-range plan has not yet been approved by the Council, the Carver County Highway 11 Regional Trail Search Corridor is proposed to travel along the western portions of the AUAR study area, along Jonathan Carver Pkwy/Carver County Highway 11, as depicted on the City of Chaska's Regional Parks and Trails System map. Council Parks and Trails staff encourage the City of Chaska to coordinate bicycle and pedestrian trail connections in this area with Carver County, the Regional Park Implementing Agency that manages the Southwest Regional Trail and that would manage a future Carver County Highway 11 Regional Trail. Well-connected regional and local trail systems benefit both residents and visitors.	Comment noted. The City intends to promote connections from the proposed development to nearby trails (including the Southwest Regional Trail) and foster pedestrian connections within the overall business park area.
Item 10: Land Use *(Todd Graham, 651-602-1322)* During the winter of 2024-2025, Chaska city staff and Council staff discussed the potential for this business park. If fully developed with a floor area ratio (FAR) that is typical of a suburban edge location, the subject area could accommodate up to 3 million square feet of built floor space and at most 3,000 jobs. Council staff invite Chaska's planners to discuss the employment forecast impacts with us as the City prepares for its 2050 Plan Update.	Comment noted. The City will continue to coordinate with the Metropolitan Council regarding employment forecasts.
Item 11: Geology, Soils, and Topography/Landforms *(Eric Wojchik 651-602-1330)* Page 33 of the Draft AUAR states, "Mass grading has been completed within the northern portion of the AUAR study area to prepare for the development of buildings, roadways, stormwater, public improvements, and landscaping. This grading required approximately 600,000 cubic yards of cut and 700,000 cubic yards of fill. Similar activities will take place within the southern portion of the study area." Under Minnesota Statute 116D.04, subdivision 2b, work is strictly prohibited from commencing before the environmental review process is finalized. The developer must not	This has been clarified in the AUAR. Only desktop review/planning efforts for mass grading have occurred, work has not commenced within the AUAR study area. Grading will not occur until the AUAR is complete and relevant permits are obtained.

Comment	Response
commence any further work on the site prior to completion of the environmental review process and prior to obtaining relevant permits.	
Item 12: Water Resource – Wastewater *(Roger Janzig, 651-602-1119)* Clarify if the Greenbelt area is going to be developed. The AUAR is not clear as to if this area is contemplated for development as Business Park or if the areas will be permanent open space. If this area is to be developed, a comprehensive plan amendment will be needed to bring the area into the 2030 MUSA.	Development may occur within the greenbelt area. Item 19.c. of the AUAR states that "The City would advance a comprehensive plan amendment to also establish MUSA staging for this area prior to development occurring." This has been added to Table 6 (Anticipated Permits and Approvals) in the Final AUAR.
Item 12: Water Resources- Surface Water *(Eric Wojchik, 651-602-1330)* The Council encourages the project proposer to continue to work with The Carver County Water Management Organization (CCWMO) on best management practices to protect and enhance the water resource quality of the Priority 1 Stream in the North of the site, which is a tributary of Chaska Creek. The project proposer should make every effort to reduce impervious surface across the site, especially near the stream, ponds, and wetland features that extend diagonally from the North/Northwest to the Southeast of the site. The project proposer should preserve and integrate the existing natural systems on site to retain terrestrial and aquatic habitat corridors.	Comment noted. The project proposer will continue to coordinate with the CCWMO and reduce impervious surface where feasible as site planning advances.
Item 12: Water Resources- Ground Water *(Lanya Ross, 651-602-1803)* The AUAR correctly acknowledges that the study area is not located within a wellhead protection area or a DWSMA; however, it notes that DWSMAs are located approximately 0.1 to 0.3 miles northeast and southeast of the study area (page 41 and Figure 15 on page 42). While the project is not currently within a DWSMA, the proximity to these areas suggests that any high-capacity pumping or significant land-use changes could potentially influence the capture zones of nearby municipal wells. The information is sufficient for current status, but the RGU should monitor upcoming updates to the City's Wellhead Protection Plan. Also, considering that regional groundwater flow direction is generally from northwest to southeast toward the Minnesota River valley, it is worthwhile to identify and promote source water protection practices where development occurs up-gradient from the city's wells.	Comment noted. The City will continue to monitor any upcoming updates that may be needed to the City's Wellhead Protection Plan.
Item 12 Water Resources- Water Appropriation *(Lanya Ross, 651-602-1803)* The AUAR provides information about the proposed source of water for the study area and how future demand compares to current capacity under two proposed scenarios (Page 50, Section 12.b.iii - Water Appropriation). While this information is generally sufficient to demonstrate	Table 13 is average day demand – this has been updated in the AUAR.

Comment	Response
system capacity exists to serve the proposed development under the scenarios presented, details on the specific "infrastructure improvements needed to expand capacity" mentioned in the Mitigation Plan remain vague and should be refined in the Final AUAR. For example, please clarify if the water demand reported in Table 13 (page 50) represents maximum day demand or average day demand, so that reviewers can correctly compare potential future demand against existing capacity.	
Item 14 Fish, Wildlife, Plan Communities, and Sensitive Ecological Resources (Rare Features) *(Lanya Ross, 651-602-1803)* The AUAR identifies a protected calcareous fen documented in the vicinity, over two miles from the site (page 59 and Appendix B). The document acknowledges that calcareous fens depend on groundwater upwelling and can be impacted by activities "several miles away," specifically citing groundwater pumping as a risk factor. The AUAR concludes impacts are unlikely but is missing technical information to confirm that the additional municipal demand and related groundwater pumping will not affect the specific aquifer serving the fen. This assessment should be refined in the Final AUAR.	No groundwater wells are anticipated to be drilled as a part of this project that could impact groundwater upwelling and pumping. Dewatering may be necessary if groundwater is encountered during construction. The contractor would be responsible for obtaining all necessary permits for dewatering including the Water Appropriation Permit through MnDNR.
Item 18: Greenhouse Gas Emissions *(MacKenzie Young-Walters, 651-602-1373)* The discussion of projected greenhouse gas emissions is generally adequate; however, it is unlikely that an additional 1,000,000 square feet of building area and 70 acres of impervious surface could be constructed without out increasing the emissions from construction equipment. The assumptions underpinning the identical construction equipment emissions for Scenarios 1 and 2 should be re-examined. In addition to the listed mitigation measures, items like energy efficient building shells, solar ready design, and incorporating solar as an accessory use to allow for in-boundary energy generation should be considered. If on-site EV charging is not currently feasible, EV ready charging infrastructure could also be considered to lower the barriers to future EV charging stations. The Council will not take formal action on the AUAR. If you have any questions or need further information, please contact MacKenzie Young-Walters, Principal Reviewer, at 651-602- 1373 or via email at MacKenzie.Young-Walters@metc.state.mn.us.	The EQB's Climate Calculator tool was used to estimate construction and operational emissions. Construction equipment emissions are calculated based on the acreage of development rather than square footage or area of impervious surface. The calculations for construction emissions are consistent with this methodology. As a separate note, the greenhouse gas emissions estimate tables have been updated in the Final AUAR to reflect that a portion of the development is planned for commercial use that was inadvertently missed in the Draft AUAR. The additional solar items suggested have been added to the Mitigation Plan for

Comment	Response
	future consideration as site planning advances.
4. Carver County	
1. Stormwater – Areawide Approach. The County strongly encourages that the developer(s) for these areas consider an overall approach to stormwater management for the AUAR area. The developer(s) should coordinate with the city of Chaska and the County early in the development process on proposed stormwater management practices and siting. Protection or restoration of natural upland areas can be eligible for use as a volume control stormwater strategy (see item 4 for additional information).	The project proposer has reached out to CCWMO and the City to request regional stormwater models and discuss stormwater approach. We have received a regional HydroCAD model from CCWMO and plan to use it in the stormwater analysis. The City of Chaska has not shared any regional models. It is understood that the city model would take precedent for rate control modeling over the CCWMO Model.
2. Stormwater –Adjacent property impacts. Please note that the CCWMO reviews for potential stormwater related impacts to upstream and downstream properties. Please see below for a summary of requirements. • **Upstream.** Drainage flowing onto the site from upstream areas must be managed and accommodated. Alterations to flow paths which impound or slow down water will not be allowed unless it can be shown that the upstream system can accommodate the change. • **Downstream.** o To the extent possible, existing drainage areas and discharge points from the site should be maintained post-development and concentrated flows onto neighboring properties should be avoided or mitigated. The downstream conveyance system (natural or structural) must be able to accommodate, to the nearest major receiving waterbody, increased volumes caused by development. o If diversions from existing drainage areas and alterations to discharge points are proposed, the responsible party shall provide additional documentation (rates, volumes, velocities, duration of flow, etc.) to demonstrate that the downstream conveyance system can accommodate the change. The responsible party shall provide evidence of easements or other agreements concerning water flow if a plan involves increased impervious or directing concentrated runoff onto a neighboring property.	These requirements are listed in the Final AUAR in Item 12.b.ii.

Comment	Response
3. **Land use authority.** The majority of the proposed Business Park/Commercial development area is within land currently under the jurisdiction of the City of Chaska. While a small portion of the scoping document includes land in Dahlgren Township (under Carver County's land use authority), this area is identified in the Carver County 2040 Comprehensive Plan as a future growth area for the City of Chaska. It is also designated as a Transition Overlay District under the Carver County Land Use Map and Zoning Code. Accordingly, the proposed AUAR Scoping Document aligns with the identified future growth opportunities for the City of Chaska, the Dahlgren Township chapter of the Carver County 2040 Comprehensive Plan, and Carver County land use standards.	Comment noted. This information has been added to the Final AUAR in Item 10 Land Use.
4. **Recommendation.** Explore including incorporating the small remnant acreage owned by Christy H Haasken Schuller Rev Trust (PUD #040010710 - east of County Road 11) into the AUAR plans as part of the city of Chaska's green belt or stormwater management plan for the site as a preservation area/volume control practice.	The project proposer does not intend to incorporate this parcel at this time as this parcel is not currently planned to be annexed.
5. **Right-of-way dedication.** Carver County Public Works requests right-of-way dedications along County Highways in accordance with the County Comprehensive Plan, along with any necessary intersection sight corners.	Comment noted.
6. **Limit access to functional area of intersections.** Carver County Public Works requests that parking lot accesses be kept outside of the functional area of intersections on County Highways (160' or turn lane length, whichever is greater).	Comment noted.
7. **CSAH 61 Access Point.** The proposed access point on CSAH 61 does not need to align with the entrance to the MnDOT garage but should be coordinated with Carver County Public Works to ensure adequate sight lines are maintained.	Comment noted. Final access locations will be coordinated with Carver County Public Works.
8. **Southern CSAH 11 Access Point.** The southern access point on CSAH 11 (between 11 and 44) should be coordinated with the City of Carver to ensure alignment and compliance with the Carver County Access Spacing Policy (0.25 miles from other intersections in this instance).	Comment noted. Final access locations will be coordinated with Carver County Public Works.
9. **Northern CSAH 11 Access Point.** The northern access point on CSAH 11 should be shifted slightly north in compliance with the same Access Spacing Policy. Exact location should be coordinated with both Carver County Public Works and the City of Carver to ensure compliance and compatibility with other future accesses.	Comment noted. Final access locations will be coordinated with Carver County Public Works.
10. **Traffic impacts from connecting CSAH 44 to Creek Road.** While the connection from CSAH 44 north to Creek Road is not a component of this proposed development, the projected traffic impact of making this connection should be explored. Such work should include any expected	A section has been added to the TIA Appendix that analyzes the impacts of the proposed creek crossing. Overall, the creek

Comment	Response
trip increases or decreases to County Highways with/without the connection and expected impacts on the necessary improvements to CSAH 44. The existence of this connection was assumed in the justification of the existing US 212/CSAH 44 interchange.	crossing is not anticipated to provide significant benefit from an operations standpoint to the site as currently proposed. However, the precise impacts of the creek crossing will depend on the local development patterns and whether or not the CSAH 44 interchange is completed. A future analysis should be completed when the area is more developed to determine if a creek crossing and/or completion of the CSAH 44 interchange are appropriate.
11. **CSAH 44 Roundabout.** More information is needed regarding the necessity of the proposed roundabout on CSAH 44 between the existing interchange and the forthcoming CSAH 11/CSAH 44 roundabout. Options should be explored for linking access to the existing interchange roundabout. As this access does not, and cannot, meet Carver County's Access Spacing Policy requirements (0.25 miles) in this location but represents a necessary connection, analysis is needed demonstrating the lowest level of access and gradually stepping up from a right-in, right-out to ¾ intersection, to a full intersection without a roundabout, and finally a roundabout. Work should also include trigger points that would necessitate "stepping up" the intersection type (percent buildout, completion of connection to Creek Road, final land use, etc)	An additional analysis will be completed and submitted in the near future that will include analysis of the alternative access scenarios including installation of a right-in/right-out or three-quarter access along CSAH 44, the use of the existing Westbound US 212 roundabout for access to the north side of the site, and other potential changes to the proposed access configuration.
5. Minnesota Department of Transportation	
Access: The conversion of the current US 212 and Big Woods Blvd partial interchange to a full interchange (adding the southbound entrance and northbound exit ramps) was identified as a future improvement "when warranted by development." However, it should be noted that there is no MnDOT funding available for these improvements and MnDOT's funding for future interchange improvements is already tightly constrained. More discussion concerning the proposed ramps, including whether the improvements identified for the adjacent US 212 interchanges at CSAH 10 and CSAH 11 would be necessary if the Big Woods Blvd. ramps were constructed. Similarly, the City may want to consider whether a connection to the Creek Road/Chaska Creek Blvd intersection provides an overall system benefit.	Thank you for your review. The City will continue to coordinate with MnDOT on the need and timing of any future interchange improvements to US 212 and big Woods Blvd.

Comment	Response
Questions about these comments should be directed to Bryant Ficek, MnDOT South Area Manager at bryant.ficek@state.mn.us or 651-443-2564.	
Water Resources: The AUAR area drains easterly to at least 3 culverts under US 212 that range in size from 24" - 42". The AUAR should note that they will need a MnDOT drainage permit for the development and flow rates to each culvert must be maintained. If the developer wishes to do early coordination with MnDOT they can contact Derek Beaudry of MnDOT's Water Resources at derek.beauduy@state.mn.us or 651-234-7534. Any projects adjacent to MnDOT Right-of-Way or connecting to MnDOT drainage facilities will require a MnDOT drainage permit to ensure that current drainage rates to MnDOT right-of-way will not be increased. The drainage permit application, including the information below, should be submitted online to: https://dotapp7.dot.state.mn.us/OLPA/. The following information must be submitted with the drainage permit application: 1) A grading plan showing existing and proposed contours. 2) Drainage area maps for the proposed project showing existing and proposed drainage areas. Any off-site areas that drain to the project area should also be included in the drainage area maps. The direction of flow for each drainage area must be indicated by arrows. 3) Drainage computations for pre and post construction conditions during the 2, 10, and 100 year rain events. 4) Time of concentration calculations. 5) An electronic copy of any computer modeling used for the drainage computations. 6) See also the attached Drainage Permits Checklist for more information. Once a drainage permit application is submitted, a thorough review will be completed and additional information may be requested.	This drainage information has been updated in Item 12 Water Resources under the stormwater section and a MnDOT permit has been added to the permit table in the Final AUAR.
Permits: As mentioned above a drainage permit will be required. Any other use of, or work within or affecting, MnDOT right of way will require a permit. Permits can be applied for at this site: https://olpa.dot.state.mn.us/OLPA/. Please upload a copy of this letter when applying for any permits. Please direct questions regarding permit requirements to Jeff Dierberger of MnDOT's Metro Permits Section at 651-775-0404 or jeffrey.dierberger@state.mn.us.	Thank you for the information. Comment noted.

Appendix G: Agency Comment Letters

MINNESOTA POLLUTION CONTROL AGENCY

Marshall Office | 504 Fairgrounds Road | Suite 200 | Marshall, MN 56258-1688 | 507-537-7146

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

January 21, 2026

Elizabeth Hanson
City of Chaska
One City Hall Plaza
Chaska, Minnesota 55318
ehanson@chaskamn.gov

RE: Big Woods Business Park – Draft Alternative Urban Areawide Review

Dear Elizabeth Hanson:

Thank you for the opportunity to review and comment on the Draft Alternative Urban Areawide Review (DAUAR) for the Big Woods Business Park project (Project) located in Carver County, Minnesota. The Project consists of the AUAR study area, encompassing approximately 359 acres across 17 parcels in the City of Chaska and Dahlgren Township, Carver County, Minnesota (shown in Figure 2). The study area is generally bounded to the north by Creek Road, to the west by Jonathan Carver Parkway, to the south by Chaska Boulevard, and to the east by U.S. Highway 212 (US 212). Two parcels within the DAUAR study area are located within Dahlgren Township (shown in Figure 2). These parcels are intended to be annexed into the City of Chaska. Dahlgren Township and the City of Chaska adopted an Orderly Annexation Agreement for these parcels on September 8, 2025. The agreement outlines the terms and conditions for an annexation. It is expected that the annexation will occur when development on those parcels occurs. Regarding matters for which the Minnesota Pollution Control Agency (MPCA) has regulatory responsibility and other interests, the MPCA staff has the following comments for your consideration.

Wastewater

- The DAUAR indicates that the Blue Lake WRRF has the capacity to treat 32 MGD. This should be corrected to state that the Blue Lake WRRF has a capacity to treat the permitted average wet weather design flow of 42 MGD.
- The DAUAR should indicate the type of wastewater that will be generated by the proposed project (domestic, industrial).
- A figure of the existing sanitary sewer system features in the project area should be provided in the DAUAR.

Watershed

- Section 12, Surface waters:
  - Include that Chaska Creek (07020012-803) is impaired for Fish Bioassessment and Invertebrate bioassessment and there are no TMDLs for those impairments.
  - Include the year of Impaired Waters List that was used.
  - Good to see a chloride management section. Another resource could be the Minnesota Stormwater Manual low Salt Design strategies and design principles.

We appreciate the opportunity to review this Project. Please be aware that this letter does not constitute approval by the MPCA of any or all elements of the Project for the purpose of pending or future permit actions by the MPCA. Ultimately, it is the responsibility of the Project Proposer to secure any required permits and to comply with any requisite permit conditions. If you have any questions concerning our review of this EA, please contact me by email at chris.green@state.mn.us or by telephone at 507-476-4258.

Sincerely,

Chris Green

This document has been electronically signed.

Chris Green, Project Manager
Environmental Review Unit
Resource Management and Assistance Division

CG:rs

Attachment

cc: Amy Timm, MPCA (w/attachment)
Melina Neville, MPCA (w/attachment)
Nicole Peterson, MPCA (w/attachment)
Lauren Dickerson, MPCA (w/attachment)
Deepa deAlwis, MPCA (w/attachment)
Julie Henderson, MPCA (w/attachment)
David Sahli, MPCA (w/attachment)

DEPARTMENT OF AGRICULTURE

January 23, 2026

Elizabeth Hanson
City of Chaska
One City Hall Plaza
Chaska, MN 55318

RE: Big Woods Business Park – Draft Alternative Urban Areawide Review

Dear Ms. Hanson:

The Minnesota Department of Agriculture (MDA) appreciates the opportunity to comment on the proposed Big Woods Business Park AUAR.

Background

The MDA has historically played a significant role in the preservation of agriculture as an industry and a vocation, as well as preserving the farmland that is the natural resource base of agriculture. We recognize that land use change is inevitable especially within urban areas. Nonetheless, agricultural production, in particular specialty food crops, can provide economic, environmental, and public health benefits to urban communities. We encourage the planning processes involved in guiding future land use change in Prior Lake to consider the benefits of incorporating local food production in plans for future development.

Local Food Production

Local food production is an umbrella term for a wide variety of activities that can be classified as either small-scale commercial or recreational. Small-scale commercial farms provide a variety of fresh food to local markets through direct sales to consumers or through sales to schools, restaurants, and retail stores. When allowed, they can also attract tourists though fun seasonal activities, educational opportunities, and outdoor events. These small businesses can be economically successful on small parcels of 'leftover' land that are oddly shaped or too small for other forms of development in commercial, industrial, and low-density residential areas.

Recreational local food production typically takes the form of community gardens, often incorporated into park and open space areas within residential areas. Community gardens can improve residents' diet, physical fitness, mental health, and social connectedness, and have even been shown to improve public safety and raise nearby property values. They add the most value in medium- and high-density residential settings.

Additionally, urban agriculture and community gardens can help provide environmental benefits important to cities such as combatting urban heat islands, reducing runoff, sequestering carbon, and supporting pollinators. When perennial crops such as fruit trees and bushes are planted, they can also provide shade and contribute to the tree canopy.

Finally, setting aside land for local food production in the AUAR can help the City of Prior Lake advance further in the GreenStep Cities program through Best Practice #27: Local Food as well as the new Gold Leaf Challenge.

Opportunities within the Prior Lake AUAR

The MDA encourages the City of Chaska to consider two modifications to the Big Woods Business Park AUAR scenarios to preserve more space for local food production. These changes would help reduce the Urban Heat Island effect, lower the number of cooling degree days, reduce the intensity of stormwater runoff, as well as some of the other benefits mentioned above.

Recommendation #1

- Expand the greenbelt area within the AUAR study area (easier to do in Scenario 1 than 2)
- Allow certain types of agricultural activities within the greenbelt, such as those already allowed in the RR1 and RR2 zoning districts
- Modify the RR1 and RR2 districts to explicitly allow hoop houses (also known as high tunnels) as permitted uses, as these are by far the most common structures needed on small farms.
- If only RR2 is being considered for the Greenbelt, consider instead a mix of RR1 and RR2 to allow for different sized farms to use the space

Recommendation #2

- Allow some urban agriculture uses to as permitted or conditional uses in the Business Park or Commercial areas. These could include:
    - Rooftop farming
    - Indoor agriculture (also known as Controlled Environment Agriculture), including hydroponics, aquaponics, mushroom cultivation, and “freight container farms”
    - Greenhouses
    - Community gardens

If you have any questions about the MDA’s comments, or would like additional information about local food production, please feel free to contact me.

Sincerely,



Mike Zastoupil

Agricultural and Food Systems Planner

Energy and Environment Section

651-201-6369

michael.zastoupil@state.mn.us

cc: Stephen Roos, Environmental Planner, MDA

February 4, 2026

Elizabeth Hanson, City Planner
City of Chaska
One City Hall Plaza
Chaska, MN 55318

RE: City of Chaska – Alternative Urban Areawide Review AUAR – Big Woods Business Park
Metropolitan Council Review File No. 23132-2
Metropolitan Council District No. 4

Dear Elizabeth Hanson:

The Draft AUAR covers approximately 359 acres in the City of Chaska and Dahlgren Township that will predominately be developed as a business park. The AUAR evaluates a lower-intensity and higher-intensity development scenario for the area with different square footages for business park and commercial building areas. Metropolitan Council staff completed its review of the Big Woods Business Park AUAR to determine its accuracy and completeness in addressing regional concerns.

Staff conclude that the AUAR is complete and accurate with respect to regional concerns and does not raise major issues of consistency with Council policies. However, staff offers the following comments for your consideration:

Item 6: Project Description *(MacKenzie Young-Walters, 651-602-1373)*
It is unlikely that both the baseline and maximum development scenarios will maintain 76 acres of rural residential/greenbelt, especially since Table 3 shows Scenario 2 contemplating 70 more acres of impervious surface than Scenario 1. Figure 4 shows the greenbelt area cutting through currently cultivated areas that are presumably prime for development and not the areas of high value natural resources the greenbelt is intended to preserve. Given this, Table 1 should be revised to have Scenario 2 reflect the reduced greenbelt area that would presumably result from a maximum development scenario.

Item 7: Climate *(MacKenzie Young-Walters, 651-602-1373)*
The discussion of anticipated climate trends and associated adaptations are adequate. Given the large amount of parking surface typically associated with developments of this nature, low salt design and a project specific chloride management plan should be considered to help offset the impact of increased freeze/thaw cycles on water resources. Additionally, opportunities for additional tree planting should be identified to mitigate the loss of 19 acres of mature trees and help minimize the urban heat island effect created by the project's impervious surface.

Item 9: Permits and Approvals *(MacKenzie Young-Walters, 651-602-1373)*
A comprehensive plan amendment will be required if business park development is proposed for the areas guided Rural Residential.

Item 10: Land Use *(Colin Kelly, 651-602-1361)*
The Southwest Regional Trail is approximately 0.1-mile north of the study area, additionally while a long-range plan has not yet been approved by the Council, the Carver County Highway 11 Regional Trail Search Corridor is proposed to travel along the western portions of the AUAR study area, along Jonathan Carver Pkwy/Carver County Highway 11, as depicted on the City of Chaska's Regional Parks and Trails System map. Council Parks and Trails staff encourage the City of Chaska to coordinate bicycle and pedestrian trail connections in this area with Carver County, the Regional Park Implementing Agency that manages the Southwest Regional Trail and that would manage a future Carver County Highway 11 Regional Trail. Well-connected regional and local trail systems benefit both residents and visitors.

Item 10: Land Use *(Todd Graham, 651-602-1322)*
During the winter of 2024-2025, Chaska city staff and Council staff discussed the potential for this business park. If fully developed with a floor area ratio (FAR) that is typical of a suburban edge location, the subject area could accommodate up to 3 million square feet of built floor space and at most 3,000 jobs. Council staff invite Chaska's planners to discuss the employment forecast impacts with us as the City prepares for its 2050 Plan Update.

Item 11: Geology, Soils, and Topography/Landforms *(Eric Wojchik 651-602-1330)*
Page 33 of the Draft AUAR states, "Mass grading has been completed within the northern portion of the AUAR study area to prepare for the development of buildings, roadways, stormwater, public improvements, and landscaping. This grading required approximately 600,000 cubic yards of cut and 700,000 cubic yards of fill. Similar activities will take place within the southern portion of the study area." Under Minnesota Statute 116D.04, subdivision 2b, work is strictly prohibited from commencing before the environmental review process is finalized. The developer must not commence any further work on the site prior to completion of the environmental review process and prior to obtaining relevant permits.

Item 12: Water Resource – Wastewater *(Roger Janzig, 651-602-1119)*
Clarify if the Greenbelt area is going to be developed. The AUAR is not clear as to if this area is contemplated for development as Business Park or if the areas will be permanent open space. If this area is to be developed, a comprehensive plan amendment will be needed to bring the area into the 2030 MUSA.

Item 12: Water Resources- Surface Water *(Eric Wojchik, 651-602-1330)*
The Council encourages the project proposer to continue to work with The Carver County Water Management Organization (CCWMO) on best management practices to protect and enhance the water resource quality of the Priority 1 Stream in the North of the site, which is a tributary of Chaska Creek. The project proposer should make every effort to reduce impervious surface across the site, especially near the stream, ponds, and wetland features that extend diagonally from the North/Northwest to the Southeast of the site. The project proposer should preserve and integrate the existing natural systems on site to retain terrestrial and aquatic habitat corridors.

Item 12: Water Resources- Ground Water *(Lanya Ross, 651-602-1803)*
The AUAR correctly acknowledges that the study area is not located within a wellhead protection area or a DWSMA; however, it notes that DWSMAs are located approximately 0.1 to 0.3 miles northeast and southeast of the study area (page 41 and Figure 15 on page 42). While the project is not currently within a DWSMA, the proximity to these areas suggests that any high-capacity pumping or significant land-use changes could potentially influence the capture zones of nearby municipal wells. The information is sufficient for current status, but the RGU should monitor upcoming updates to the City's Wellhead Protection Plan. Also, considering that regional groundwater flow direction is generally from northwest to southeast toward the Minnesota River

valley, it is worthwhile to identify and promote source water protection practices where development occurs up-gradient from the city's wells.

Item 12 Water Resources- Water Appropriation *(Lanya Ross, 651-602-1803)*
The AUAR provides information about the proposed source of water for the study area and how future demand compares to current capacity under two proposed scenarios (Page 50, Section 12.b.iii - Water Appropriation). While this information is generally sufficient to demonstrate system capacity exists to serve the proposed development under the scenarios presented, details on the specific "infrastructure improvements needed to expand capacity" mentioned in the Mitigation Plan remain vague and should be refined in the Final AUAR. For example, please clarify if the water demand reported in Table 13 (page 50) represents maximum day demand or average day demand, so that reviewers can correctly compare potential future demand against existing capacity.

Item 14 Fish, Wildlife, Plan Communities, and Sensitive Ecological Resources (Rare Features) *(Lanya Ross, 651-602-1803)*
The AUAR identifies a protected calcareous fen documented in the vicinity, over two miles from the site (page 59 and Appendix B). The document acknowledges that calcareous fens depend on groundwater upwelling and can be impacted by activities "several miles away," specifically citing groundwater pumping as a risk factor. The AUAR concludes impacts are unlikely but is missing technical information to confirm that the additional municipal demand and related groundwater pumping will not affect the specific aquifer serving the fen. This assessment should be refined in the Final AUAR.

Item 18: Greenhouse Gas Emissions *(MacKenzie Young-Walters, 651-602-1373)*
The discussion of projected greenhouse gas emissions is generally adequate; however, it is unlikely that an additional 1,000,000 square feet of building area and 70 acres of impervious surface could be constructed without out increasing the emissions from construction equipment. The assumptions underpinning the identical construction equipment emissions for Scenarios 1 and 2 should be re-examined. In addition to the listed mitigation measures, items like energy efficient building shells, solar ready design, and incorporating solar as an accessory use to allow for in-boundary energy generation should be considered. If on-site EV charging is not currently feasible, EV ready charging infrastructure could also be considered to lower the barriers to future EV charging stations.

The Council will not take formal action on the AUAR. If you have any questions or need further information, please contact MacKenzie Young-Walters, Principal Reviewer, at 651-602- 1373 or via email at MacKenzie.Young-Walters@metc.state.mn.us.

Sincerely,



Angela R. Torres, AICP, Senior Manager
Local Planning Assistance

CC: Tod Sherman, Development Reviews Coordinator, MnDOT - Metro Division
Deb Barber, Metropolitan Council District No. 4
Judy Sventek, Water Resources Manager
MacKenzie Young-Walters, Sector Representative/ Principal Reviewer
Reviews Coordinator

N:\CommDev\LPA\Communities\Chaska\Letters\Chaska 2026 Big Woods Business Park Draft AUAR Admin Review 23132-2.docx

Public Services
Planning and Water Management Dept
Government Center - Administration Building
600 East 4th Street
Chaska, Minnesota 55318
Phone: (952)361-1820
www.co.carver.mn.us

February 5, 2026

Elizabeth Hanson, AICP
City of Chaska

RE: Big Woods Business Park AUAR

Dear Ms. Hanson,

Carver County appreciates the opportunity to review and comment on the Big Woods Business Park Alternative Urban Areawide Review (AUAR). Please consider the following comments.

Water Management Organization

1. **Stormwater – Areawide Approach.** The County strongly encourages that the developer(s) for these areas consider an overall approach to stormwater management for the AUAR area. The developer(s) should coordinate with the city of Chaska and the County early in the development process on proposed stormwater management practices and siting. Protection or restoration of natural upland areas can be eligible for use as a volume control stormwater strategy (see item 4 for additional information).

2. **Stormwater –Adjacent property impacts.** Please note that the CCWMO reviews for potential stormwater related impacts to upstream and downstream properties. Please see below for a summary of requirements.

    a. **Upstream.** Drainage flowing onto the site from upstream areas must be managed and accommodated. Alterations to flow paths which impound or slow down water will not be allowed unless it can be shown that the upstream system can accommodate the change.

    b. **Downstream.**
        i. To the extent possible, existing drainage areas and discharge points from the site should be maintained post-development and concentrated flows onto neighboring properties should be avoided or mitigated. The downstream conveyance system (natural or structural) must be able to accommodate, to the nearest major receiving waterbody, increased volumes caused by development.
        ii. If diversions from existing drainage areas and alterations to discharge points are proposed, the responsible party shall provide additional documentation (rates, volumes, velocities, duration of flow, etc.) to demonstrate that the downstream conveyance system can accommodate the change. The responsible party shall provide evidence of easements or other agreements concerning water flow if a plan involves increased impervious or directing concentrated runoff onto a neighboring property.

Land Management

3. **Land use authority.** The majority of the proposed Business Park/Commercial development area is within land currently under the jurisdiction of the City of Chaska. While a small portion of the scoping document includes land in Dahlgren Township (under Carver County's land use authority), this area is identified in the Carver County 2040 Comprehensive Plan as a future growth area for the City of Chaska. It is also designated as a Transition Overlay District under the Carver County Land Use Map and Zoning Code.

   Accordingly, the proposed AUAR Scoping Document aligns with the identified future growth opportunities for the City of Chaska, the Dahlgren Township chapter of the Carver County 2040 Comprehensive Plan, and Carver County land use standards.

4. **Recommendation.** Explore including incorporating the small remnant acreage owned by Christy H Haasken Schuller Rev Trust (PUD #040010710 - east of County Road 11) into the AUAR plans as part of the city of Chaska's green belt or stormwater management plan for the site as a preservation area/volume control practice.

Public Works

5. **Right-of-way dedication.** Carver County Public Works requests right-of-way dedications along County Highways in accordance with the County Comprehensive Plan, along with any necessary intersection sight corners.

6. **Limit access to functional area of intersections.** Carver County Public Works requests that parking lot accesses be kept outside of the functional area of intersections on County Highways (160' or turn lane length, whichever is greater).

7. **CSAH 61 Access Point.** The proposed access point on CSAH 61 does not need to align with the entrance to the MnDOT garage but should be coordinated with Carver County Public Works to ensure adequate sight lines are maintained.

8. **Southern CSAH 11 Access Point.** The southern access point on CSAH 11 (between 11 and 44) should be coordinated with the City of Carver to ensure alignment and compliance with the Carver County Access Spacing Policy (0.25 miles from other intersections in this instance).

9. **Northern CSAH 11 Access Point.** The northern access point on CSAH 11 should be shifted slightly north in compliance with the same Access Spacing Policy. Exact location should be coordinated with both Carver County Public Works and the City of Carver to ensure compliance and compatibility with other future accesses.

10. **Traffic impacts from connecting CSAH 44 to Creek Road.** While the connection from CSAH 44 north to Creek Road is not a component of this proposed development, the projected traffic impact of making this connection should be explored. Such work should include any expected trip increases or decreases to County Highways with/without the connection and expected impacts on the necessary

improvements to CSAH 44. The existence of this connection was assumed in the justification of the existing US 212/CSAH 44 interchange.

11. **CSAH 44 Roundabout.** More information is needed regarding the necessity of the proposed roundabout on CSAH 44 between the existing interchange and the forthcoming CSAH 11/CSAH 44 roundabout. Options should be explored for linking access to the existing interchange roundabout. As this access does not, and cannot, meet Carver County's Access Spacing Policy requirements (0.25 miles) in this location but represents a necessary connection, analysis is needed demonstrating the lowest level of access and gradually stepping up from a right-in, right-out to ¾ intersection, to a full intersection without a roundabout, and finally a roundabout. Work should also include trigger points that would necessitate "stepping up" the intersection type (percent buildout, completion of connection to Creek Road, final land use, etc)

Thank you for considering these comments in the Big Woods Business Park Alternative Urban Areawide Review. Please contact us with any questions of clarification.

Sincerely,

Kristen Larson

Kristen Larson
Carver County Planning & Water Management

Metropolitan District
Waters Edge Building
1500 County Road B2 West
Roseville, MN 55113

February 26, 2026

Elizabeth Janson
City Planner
City of Chaska
One City Hall Plaza
Chaska, MN 55318-2101

SUBJECT: MnDOT Review # **AUAR26-002**
Big Woods Business Park
West Side US 212 north and south of Big Woods Blvd
Chaska, Carver County

Dear Ms. Janson:

Thank you for the opportunity to review the plans for the **Big Woods Business Park.** MnDOT has reviewed the documents and has the following comments:

Access:
The conversion of the current US 212 and Big Woods Blvd partial interchange to a full interchange (adding the southbound entrance and northbound exit ramps) was identified as a future improvement "when warranted by development." However, it should be noted that there is no MnDOT funding available for these improvements and MnDOT's funding for future interchange improvements is already tightly constrained. More discussion concerning the proposed ramps, including whether the improvements identified for the adjacent US 212 interchanges at CSAH 10 and CSAH 11 would be necessary if the Big Woods Blvd. ramps were constructed.

Similarly, the City may want to consider whether a connection to the Creek Road/Chaska Creek Blvd intersection provides an overall system benefit.

Questions about these comments should be directed to Bryant Ficek, MnDOT South Area Manager at bryant.ficek@state.mn.us or 651-443-2564.

Water Resources:
The AUAR area drains easterly to at least 3 culverts under US 212 that range in size from 24" - 42". The AUAR should note that they will need a MnDOT drainage permit for the development and flow rates to each culvert must be maintained. If the developer wishes to do early coordination with MnDOT they can contact Derek Beaudry of MnDOT's Water Resources at derek.beauduy@state.mn.us or 651-234-7534.

An equal opportunity employer

Any projects adjacent to MnDOT Right-of-Way or connecting to MnDOT drainage facilities will require a MnDOT drainage permit to ensure that current drainage rates to MnDOT right-of-way will not be increased. The drainage permit application, including the information below, should be submitted online to: https://dotapp7.dot.state.mn.us/OLPA/.

The following information must be submitted with the drainage permit application:

1) A grading plan showing existing and proposed contours.
2) Drainage area maps for the proposed project showing existing and proposed drainage areas. Any off-site areas that drain to the project area should also be included in the drainage area maps. The direction of flow for each drainage area must be indicated by arrows.
3) Drainage computations for pre and post construction conditions during the 2, 10, and 100 year rain events.
4) Time of concentration calculations.
5) An electronic copy of any computer modeling used for the drainage computations.
6) See also the attached Drainage Permits Checklist for more information.

Once a drainage permit application is submitted, a thorough review will be completed and additional information may be requested.

Please direct questions concerning drainage issues to Derek Beauduy, MnDOT Metro Water Resources at (651-234-7534) or derek.beauduy@state.mn.us.

Permits:

As mentioned above a drainage permit will be required. Any other use of, or work within or affecting, MnDOT right of way will require a permit.

Permits can be applied for at this site: https://olpa.dot.state.mn.us/OLPA/. Please upload a copy of this letter when applying for any permits.

Please direct questions regarding permit requirements to Jeff Dierberger of MnDOT's Metro Permits Section at 651-775-0404 or jeffrey.dierberger@state.mn.us.

Review Submittal Options

MnDOT's goal is to complete reviews within 30 calendar days. Review materials received electronically can be processed more rapidly. Do not submit files via a cloud service or SharePoint link. In order of preference, review materials may be submitted as:

1. Email documents and plans to metrodevreviews.dot@state.mn.us. Attachments may not exceed 20 MB (megabytes) per email. Documents can be zipped as well. If multiple emails are necessary, number each email.

2. Files over 20 MB can also be uploaded to MnDOT's Web Transfer Client site: https://mft.dot.state.mn.us. Contact metrodevreviews.dot@state.mn.us, and staff will

create a shared folder in which files can be uploaded. Please send an accompanying email with a narrative for the development.

If you have any questions concerning this review, please contact me at (651) 234-7797 or Cameron.muhic@state.mn.us.

Sincerely,



Cameron Muhic
Principal Planner

Copy sent via E-Mail:

Jeff Dierberger, Permits
Derek Beauduy, Water Resources
Bryant Ficek, Area Manager
Mohamoud Mire, South Area Support
Tristan Trejo, Pedestrian/Bicycle
Douglas Nelson, Right-of-Way
Heather Gardner, Design
Almin Ramic, Traffic
Diane Langenbach, Area Engineer
Michael Kowski, Maintenance
Amrish Patel, Transit
Joe Widing, Metropolitan Council

MnDOT Drainage Permits Checklist

Purpose of the MnDOT Drainage Permit

MnDOT Metro District regulates activities that impact its drainage systems and its MS4 regulated area. The purpose of the Drainage Permit is to protect State of Minnesota investment in infrastructure including but not limited to roadways, storm water treatment basins, ditches and storm sewer systems. Excess storm water and/or sediment laden storm water added to MnDOT's drainage systems leads to degradation of these assets. Negative impacts include but are not limited to: sediment deposition, loss of flood storage capacity and also loss of hydraulic conveyance capacity. These impacts may cause premature flooding of the road surface and/or erosion damage on State right-of-way.

Technical Requirements of the MnDOT Drainage Permit

The permit applicant shall demonstrate that offsite runoff coming to MnDOT drainage system and/or right-of-way will not increase as a result of the proposed project. This is quantified as a "no increase in discharge" criteria for the 2-year, 10-year and 100-year storm events. Compliance is demonstrated by applying hydraulic/hydrologic software models. HydroCAD and XPSWMM are the approved models to compare the pre and post project discharge values. Typically, HydroCAD is sufficient to model most proposed projects. However, XPSWMM may be required if the project contains extensive storm water pipe systems connected to MnDOT storm sewer or if HydroCAD cannot in MnDOT's judgment effectively model pressure flow, complex junctions and/or backwater effects that are present. The 2-year, 10-year and 100-year storm events shall be based upon Atlas 14 runoff amounts per the NOAA website.

In addition, Drainage Permit Applicants shall meet all applicable water quality treatment requirements established by the local Watershed District(s) and the MPCA.

Permit applicants should anticipate that specific projects that seek to divert runoff to another sub-watershed or watershed will be denied. It is MnDOT practice to avoid such watershed diversions whenever practicable.

Submittal Requirements:

- Readable/legible watershed maps that show pre and post project drainage conditions. These two separate contour maps shall be large enough in scale so that approximate flow paths can be determined for verifying the Time of Concentrations used in the models. The drainage/watershed maps shall include enough detail so that Curve Numbers used in the hydraulic models may be verified by MnDOT.

- Surface water flow direction and storm water pipe water flow direction shall be indicated on the pre and post project watershed maps.

- Minimum recommended watershed map scale is 1" =100'. Project applications submitted with smaller scales (e.g., 1"=500') may be rejected and returned to the applicant. The same would apply for project watershed maps that do not include topographic contours or basic land use information such as the location of buildings, pavement and "green space". Watershed maps submitted as pdf files or CAD files shall be readily printable at scales that allow for good readability.

- Pre and post project watershed maps shall be clearly linked to the drainage models such that the names of the sub-watersheds, ponds and drainage structures are the same in the models as shown on the watershed maps. In addition, watershed and sub-watershed boundaries shall be clearly shown.

- Submission of the actual pre and post project HydroCAD or XPSWMM models is required: pdf copies of the drainage model simulations are unacceptable. In the event that the models cannot be transferred readily by electronic mail or electronic repository site, a hardcopy CD shall be provided.

- Curve numbers shall be determined per NRCS methodology and should be modified as needed based upon detailed knowledge of soil type and specific conditions on site. HydroCAD modeling software includes NRCS guidance for determining curve numbers based upon land use and condition.

- Time of concentration (Tc) computations and assumptions that in MnDOT's assessment clearly overestimate or underestimate this critical runoff parameter will be rejected. Two common assumptions that lead to overestimating Tc include: using the "Lag/CN" method to determine peak runoff from watersheds that have a relatively long and/or diverse flow path, and assuming that sheet flow occurs for a distance exceeding100 feet. Conversely, pre-project Tc shall not be underestimated to offset post project increases in peak discharge.

- Available freeboard for existing and proposed treatment ponds shall be shown on the watershed maps as well as the normal and 100-year high water levels. All proposed pond treatment systems along MnDOT right-of-way shall have a minimum freeboard of 2.0 feet between the road surface and the proposed 100-year HWL.

- Infiltration basins, filtration basins and ponds adjacent to MnDOT right-of-way shall be designed to provide at least 2 feet of elevation difference between the 100-year HWL and the crest of the basin berm. The berm crest shall be at least 5 feet wide. The emergency overflow shall be lined from crest to toe of slope with Turf Reinforcement mat or Category 6 or 7 Erosion Control Blanket.

- Best management practices (BMP's) including infiltration/filtration sites, storm water ponds, etc. shall be clearly labeled on the pre and post project watershed maps.

- Plan sheets submitted as watershed maps shall be evaluated as such. They shall be readable and legible and meet all the same requirements including clear delineation of watershed boundaries, readable map scale, and land use shown by an aerial photo background map, or that is clearly depicted based on details on the plan sheet or sheets submitted.

- Project plan sheets relevant to the Drainage Permit are required and include: existing site conditions, the proposed grading plan as well as proposed site drainage system plans and profiles. The plans shall include applicable wetland impact/mitigation features and temporary sediment and erosion control measures for the project. In addition, erosion control blanket will be used to stabilize disturbed area on MnDOT right-of-way unless other methods such as rip-rap treatment are called for in the plans and approved by MnDOT.

- Pond and basin special structures including weirs and orifices shall be consistent with what is used in the HydroCAD or XPSWMM models submitted and include relevant calculations/details.

- A table summary of existing versus proposed site discharge to MnDOT drainage system/right-of-way is required for the 2-year, 10-year and 100-year Atlas 14 rainfall events.

- Post project storm water discharge to MnDOT ditches or other open channel shall be limited to flow velocities of 6 fps or less for a 50-year Atlas 14 rainfall event.

- Project discharge points that will connect to MnDOT ditch or channel shall be located such that they do not cause erosion or conflict with the grade of the existing ditch or channel.

- Proposed access road culverts on MnDOT right-of-way shall be designed for the 10-year Atlas 14 rainfall event unless they are part of a significant drainage ditch along the roadway in which case a 100-year or 50-year design will apply.

- Direct connections to MnDOT storm system shall be avoided. Connection to open ditch, or channel is preferred. If direct storm sewer connections cannot be avoided, it is the applicant's responsibility to provide a good connection typically via a new structure. Furthermore, MnDOT offers no warranty that there will not be a hydraulic backwater effects on the new storm line upstream that is connected to MnDOT's existing storm sewer.

- For all disturbed areas that sheet flow to MnDOT right-of-way and any disturbed areas within MnDOT right-of-way, either Erosion Control Mat or Bonded Fiber Matrix shall be used for temporary/permanent erosion control.

- Silt fence shall not be used for erosion control at the proposed project site perimeter. Rather, continuous Wood Chip or compost Sediment Control Logs shall be implemented.

Permit applicants are encouraged to contact MnDOT Metro Water Resource Engineering with questions/concerns. Questions posed early in the permit application process help to avoid project delays. This is particularly true for large project Drainage Permits with significant complexity.

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Authorize initiation of Arbitration with Mueller Systems, LLC

Prepared By: Matt Podhradsky, City Administrator

Beginning in 2014, the City installed and used an Advanced Metering Infrastructure system designed and installed by Mueller Systems, LLC. The AMI system is the system used to read usage for electric and water customers and transmit the data on usage from the meters to the City's billing software.

Over the years the City encountered numerous issues with the Mueller AMI system. Mueller never fully completed installation of the AMI system according to the contract parameters. Beginning in 2019, the AMI system's read-rate fell to such an extent that it fell below the read-rate guarantee set in Mueller's contract. When the meters failed, the City was required to have staff drive out and manually read the meters, incurring costs for labor and equipment use. The City worked hard with Mueller to resolve the issues, including conducting management-level meetings with Mueller to discuss strategies to remedy the failure. Mueller never resolved the problems, and ever since April of 2019, the system failed to meet the read-rate guarantee in the contract.

Mueller also discontinued support for the AMI system, including ending its customer portal offering and discontinuing the manufacturing of the meters used in the System, both of which were key components in the City's AMI system and which Mueller had guaranteed to support for at least 15 years. Because of these issues, the City replaced the entire AMI system in order to have a functioning AMI system to ensure the meters read and report correctly and utility bills can be timely and accurate.

Mueller's failures to meet their guarantees and their discontinued system support are breaches of the City's contract with Mueller. As a result of the breaches the City has been harmed, and should be entitled to recover damages from Mueller. The contract requires any disputes to be commenced in arbitration. We have been working with the City Attorney to prepare an arbitration case against Mueller, and now that the new AMI system is in place, the City staff feel prepared to initiate that arbitration without being stranded for meter reading if the Mueller system's functionality is diminished or discontinued because of the arbitration.

CITY COUNCIL ACTION REQUESTED

Motion to adopt Resolution No. 2026-31 to authorize city staff and the City Attorney to initiate a demand for arbitration with Mueller Systems, LLC regarding Mueller's breaches of contract.

CITY OF CHASKA
CARVER COUNTY, MINNESOTA

RESOLUTION

DATE: 4/20/2026 **RESOLUTION NO.: 2026-31**

MOTION BY: _____ **SECOND BY: _____**

A RESOLUTION APPROVING THE INITIATION OF ARBITRATION WITH MUELLER SYSTEMS, LLC

WHEREAS, the City of Chaska (the "**City**") entered into a contract with Mueller Systems, LLC (**"Mueller"**) for an Advanced Metering Infrastructure (**"AMI"**) system in 2014; and

WHEREAS, the AMI system was to provide a system for reading utility usage data in the City; and

WHEREAS, the contract with Mueller required Mueller to design and install an AMI system, guaranteed certain performance functionalities of the AMI System, and guaranteed that the AMI system would be supported for 15 years; and

WHEREAS, Mueller never completed installation of the AMI system through the Final System Acceptance Test required by the contract because of failures of the system to function as designed; and

WHEREAS, the AMI System provided by Mueller experienced declining read rates which fell below the guarantees in the contract, which was never remedied by Mueller; and

WHEREAS, Mueller discontinued offering required hardware and software components of the AMI system which were guaranteed by Mueller in the contract; and

WHEREAS, the City replaced Mueller's AMI system because of the system's failure to function as required by the contract and as needed by the City's utilities.

WHEREAS, the City has been harmed by incurring costs to manually read meters when Mueller's system failed; and

WHEREAS, the City has lost the value of the AMI system's designed useful life by Mueller's failure to meet their guarantees.

WHEREAS, the contract provides for liquidated damages if Mueller breached their system support guarantee; and

WHEREAS, the contract requires all disputes to be handled in arbitration; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHASKA, MINNESOTA**:**

1. The above recitals and findings are incorporated as resolutions of the City Council.
2. City Staff and the City Attorney are authorized to initiate arbitration proceedings against Mueller for breaches of the contract.

Passed and adopted by the City Council of the City of Chaska this 20th day of April, 2026.

Presiding Officer

_____

Taylor Hubbard, Mayor

ATTEST: _____

Denise Beebe, City Clerk

M/_____	Benesh	_____
	Grau	_____
S/_____	Hatfield	_____
	Hubbard	_____
	Sheveland	_____

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: Authorize Use of Eminent Domain for Easements for CSAH 61 Trunk Sewer Extension for serving Highpoint Vistas and Fultonwood Development Utilities

Prepared By: Matt Clark, City Engineer

On December 15, in Resolution 25-99, the City Council authorized acquisition of utility easements over properties along CSAH 61 to facilitate the trunk gravity sewer extension for serving residential housing developments that include Highpoint Vistas and Fultonwood. The project schedule is planned for construction timeline beginning in July to complete the work this season.

Over the last several months, the City's right of way agent and staff have undergone one-on-one engagement with the landowners to discuss the appraised easement area valuation. Two properties highlighted on the attached exhibit remain outstanding for securing easements over portions of the property to allow for installing the new sewer line. Outlot A of the Lano Addition, has numerous owners of interests who have agreed to grant easements, but each are seeking mortgagee consents which may take more time than is available before the construction begins. The other outstanding property owner has a significant difference in valuation of the easement area over the property.

To ensure that the project timeline advances for providing a gravity sewer connection to area development this year, staff is recommending a condemnation petition to ensure the project has the necessary interests to begin construction work. The action item is to authorize eminent domain with the ownership listed for the easement areas included in the resolution. However, it should be noted that staff will continue to negotiate with the owner to acquire the easement through agreement rather than through legal proceedings.

CITY COUNCIL ACTION REQUESTED

Motion to adopt Resolution No. 2026-32 to authorize city staff to initiate eminent domain proceedings for the affected properties for the CSAH 61 sanitary sewer utility project.

CITY OF CHASKA
CARVER COUNTY, MINNESOTA

RESOLUTION

DATE: 4/20/2026 **RESOLUTION NO.:** 2026- 32

MOTION BY: _____ **SECOND BY:** _____

A RESOLUTION APPROVING THE ACQUISITION OF EASEMENTS FOR CSAH 61 SANITARY SEWER EXTENSION

WHEREAS, the City of Chaska (the "**City**") desires to construct utility infrastructure improvements lying generally along CSAH 61 within the City limits (the "**Project**"); and

WHEREAS, the Project will extend the City's sanitary sewer lines westward to new residential developments in this area such as the Highpoint Vistas development; and

WHEREAS, the nature and scope of the Project is outlined on Exhibit A, attached hereto and incorporated herein; and

WHEREAS, the Project is scheduled to begin in Summer of 2026; and

WHEREAS, the City Engineer has completed the engineering review required for the Project and, as part of such work, has determined that various easements need to be acquired; and

WHEREAS, the City previously authorized commencement of negotiation to acquire the necessary easements on December 15, 2025 by Resolution 2025-99; and

WHEREAS, the easements which need to be acquired have been appraised in conformance with the Minnesota Statute, and appraisals and offers for acquisition previously authorized by the Chaska City Council have been made to the affected property owners; and

WHEREAS, the City has secured some of the required easements, but has been unable to come to terms with the owners of some of the properties and their mortgagees on the terms of acquisition for the easements; and

WHEREAS, the acquisitions of easements over certain parcels are appropriate and necessary for a public purpose because it is an integral component of the Project's development of the City's sanitary sewer utility; and

WHEREAS, for purposes of this resolution, the "**Brakemeier Property**" means real property in Carver County, Minnesota, currently identified as PID 30.0086900 and 30.0085500 on attached Exhibit B; and

WHEREAS, for purposes of this resolution, the "**Outlot Property**" means real property in Carver County, Minnesota, currently identified as PID c-30315-A on attached Exhibit C which is encumbered by rights and covenants benefitting four properties; and

WHEREAS, the following acquisitions are still needed for the Project (together the "**Utility Easement Rights**"):

Acquisition of permanent utility easements over the Brakemeier Property and the Outlot Property (the "**Permanent Easements**"); and

Acquisition of temporary construction easements, over parts of the Brakemeier Property and the Outlot Property (the "**Temporary Construction Easements**"); and

WHEREAS, the City authorized SRF Consulting Group, Inc. to negotiate with the various property owners the acquisition of the easements required. SRF has provided notice and an opportunity for the affected property owner to meet with the Appraiser and has provided the property owner with a copy of the City's appraisal; and

WHEREAS, the City will comply with all appraisal and negotiation requirements in Minnesota Statute 117.036 and negotiations have been ongoing; and

WHEREAS, no final agreement exists between the City and the owner of the Brakemeier Property and between the owners of certain of the benefitted owners of the Outlot Property; and

WHEREAS, the City Council further finds the Utility Easement Rights are needed for a public purpose because they relate to the provision of sewer utility access for the new developments on the west side of the City, which is a public function of the City for the public health, safety, and welfare; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHASKA, MINNESOTA**:**

1. The above recitals and findings are incorporated as resolutions of the City Council including, but not limited to, the finding that the City is acquiring the Utility Easement Rights for a public purpose.
2. A viable and requisite public purpose exists for the acquisition of the Utility Easement Rights shown on EXHIBITS B and C attached hereto and incorporated herein and such property is necessary for the Project and must be obtained before the filing of an award by court-appointed commissioners.
3. That the City is a statutory city under Minnesota law and has authority to acquire property by condemnation.
4. The City may, upon compliance with statutory prerequisites including, but not limited to, good faith negotiation, commence Eminent Domain proceedings to acquire the property shown on EXHIBITS B and C attached hereto and incorporated herein.
5. The City shall comply with all appraisal and negotiation requirements and other conditions precedent to Eminent Domain.
6. The City Staff and the City Attorney are authorized and empowered to file Statutory Quick Take Notices for all the acquisitions set forth on EXHIBITS B and C
7. The City Attorney is authorized to file the necessary petition to initiate Eminent Domain proceedings and to prosecute such action to a successful conclusion or until it is abandoned, dismissed, or terminated by the City or a court.

8. City staff are authorized to obtain updated appraisals for the easements shown on EXHIBITS B and C as necessary and to reimburse the owner of the property up to the statutory maximum to obtain an independent appraisal of the property within 30 days of the owner's submission of a copy of the appraisal and the invoice for such appraisal to the City.
9. City Staff and the City Attorney are authorized to continue to negotiate with the owners for the voluntary purchase of the easements shown on EXHIBITS B and C, subject to approval by the Council.

Passed and adopted by the City Council of the City of Chaska this 20th day of April, 2026.

Presiding Officer

_____
Taylor Hubbard, Mayor

ATTEST: _____
Denise Beebe, City Clerk

M/_____ Benesh _____
Grau _____
S/_____ Hatfield _____
Hubbard _____
Sheveland _____

EXHIBIT A

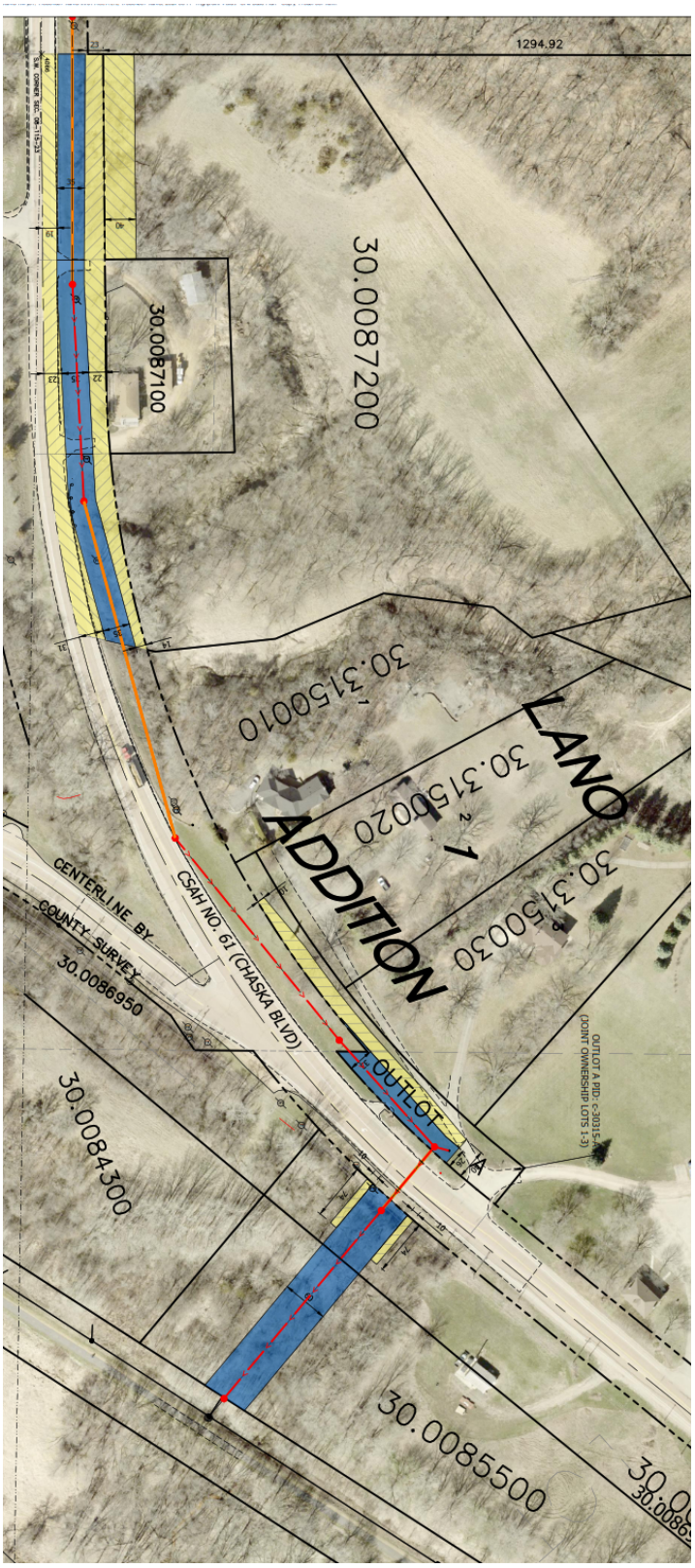
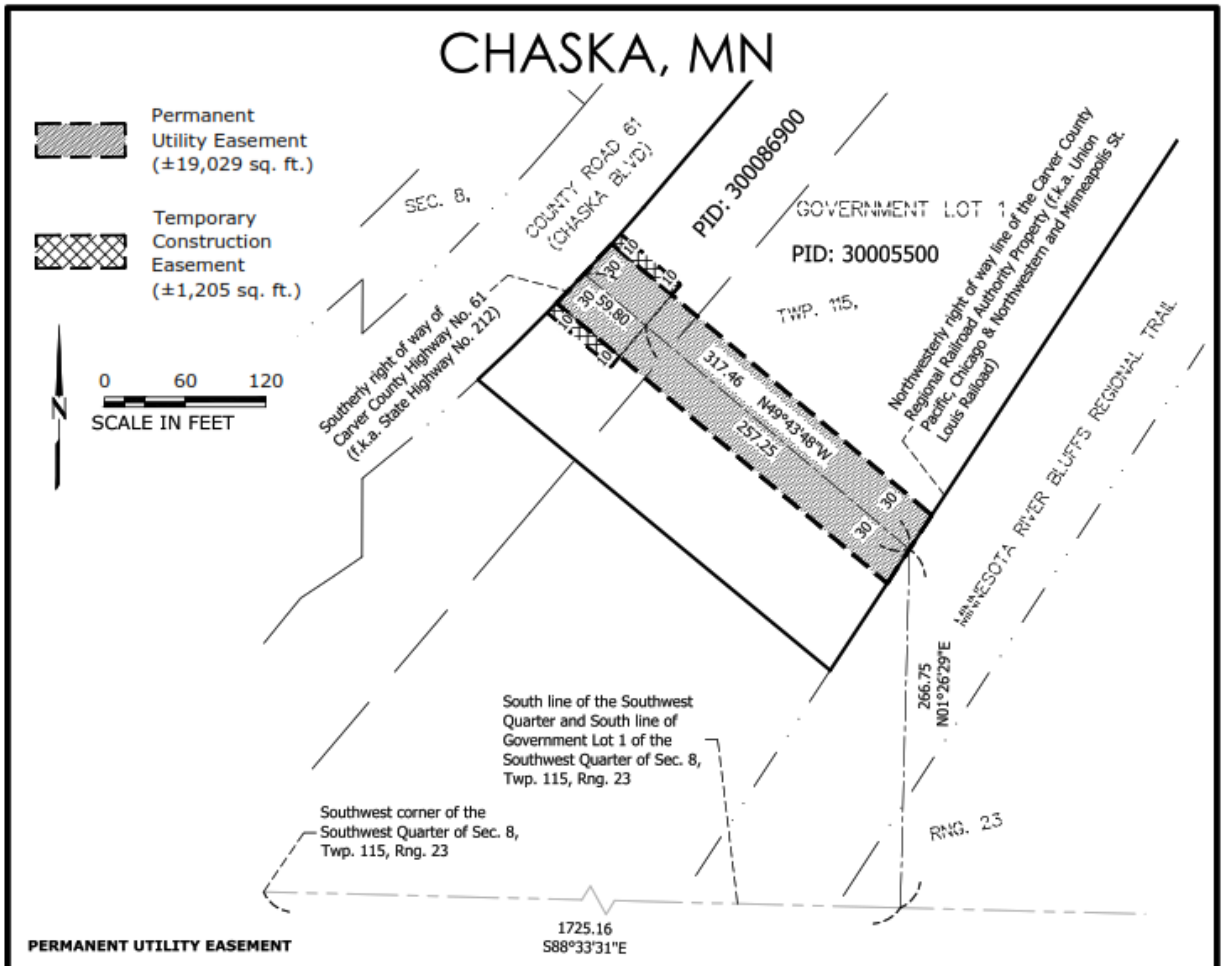

1294.92
30.0087200
30.0087100
30.3150010
30.3150020
30.3150030
LANO
ADDITION
CENTERLINE BY
COUNTY SURVEY
CSAH NO. 61 (CHASKA BLVD)
30.0086950
OUTLOT A
30.0084300
30.0085500

EXHIBIT B



PERMANENT UTILITY EASEMENT

A 60.00 foot permanent easement for utility purposes over, under, and across of Government Lot 1, Section 8, Township 115, Range 23, Carver County, Minnesota, the centerline is described as follows:
Commencing at the southwest corner of said Southwest Quarter of the Southwest Quarter; thence South 88 degrees 33 minutes 31 seconds East, assumed bearing along the south line of the Southwest Quarter and south line of said Government Lot 1, a distance of 1725.16 feet; thence North 01 degree 26 minutes 29 seconds East, 266.75 feet to the point of beginning; thence North 49 degrees 43 minutes 48 seconds West, 317. 46 feet to the southerly right of way line of Carver County Highway No. 61 (formerly known as State Highway No. 212) and said centerline there terminating.
The sidelines of said permanent easement are prolonged or shortened to terminate on said southerly right of way line of Carver County Highway No. 61 (formerly known as State Highway No. 212) and the northwesterly right of way line of the Carver County Regional Railroad Authority Property (formerly known as the Union Pacific, Chicago & Northwestern, and Minneapolis St. Louis Railroad), as laid out and travelled.

TEMPORARY CONSTRUCTION EASEMENT

An 80.00 foot temporary easement for construction purposes over, under, and across of Government Lot 1, Section 8, Township 115, Range 23, Carver County, Minnesota, the centerline is described as follows:
Commencing at the southwest corner of said Southwest Quarter of the Southwest Quarter; thence South 88 degrees 33 minutes 31 seconds East, assumed bearing along the south line of the Southwest Quarter and south line of said Government Lot 1, a distance of 1725.16 feet; thence North 01 degree 26 minutes 29 seconds East, 266.75; thence North 49 degrees 43 minutes 48 seconds West, 257.25 feet to the point of beginning; thence continuing North 49 degrees 43 minutes 48 seconds West, 59.80 feet to the southerly right of way line of Carver County Highway No. 61 (formerly known as State Highway No. 212) and said centerline there terminating.
The sidelines of said temporary construction easement are prolonged or shortened to terminate on said southerly right of way line of Carver County Highway No. 61 (formerly known as State Highway No. 212), thereof.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DANIEL J. ROEBER

SIGNATURE:

DATE JUNE 3, 2025 LIC. NO. 43133

Stantec
Minneapolis Office
733 Marquette Ave
Suite 1000
Minneapolis, MN 55402
Phone: 612-712-2000
Website:www.stantec.com

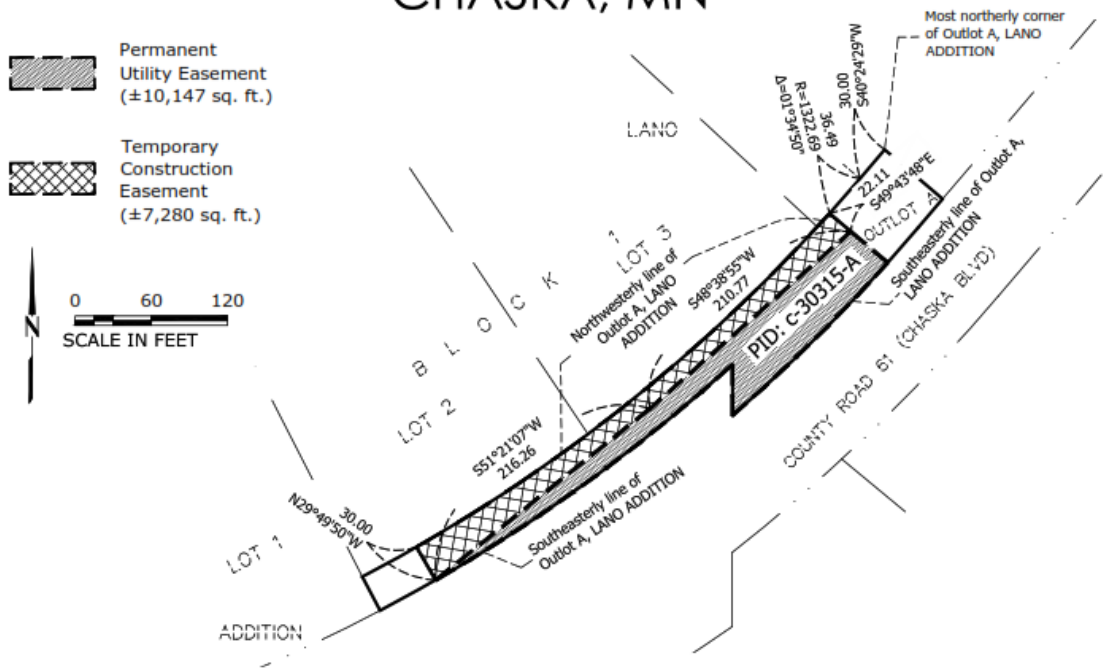
NAME 193807337_V604.dwg

DRAWN DJR

PROJ. NO. 193807337

EXHIBIT C

CHASKA, MN



PERMANENT UTILITY EASEMENT

A permanent easement for utility purposes over, under, and across that part of Outlot A, LANO ADDITION, according to the recorded plat thereof, Carver County, Minnesota. Said permanent easement is bounded as follows:

On the southeast by the southeasterly line of said Outlot A.

On the northeast by the following described line: Commencing at the most northerly corner of said Outlot A; thence South 40 degrees 24 minutes 29 seconds West, assumed bearing along the northwesterly line of said Outlot A, a distance of 30.00 feet; thence southwesterly 36.49 feet along tangential curve concave to the northwest having a radius of 1322.69 feet and central angle of 01 degree 34 minutes 50 seconds; thence South 49 degrees 43 minutes 48 seconds East, 22.11 feet to the point of beginning; thence continuing South 49 degrees 43 minute 48 seconds East, 37.92 feet to the south line of said Outlot A, and said line there terminating.

On the northwest by the following described line: Commencing at the most northerly corner of said Outlot A; thence South 40 degrees 24 minutes 29 seconds West, assumed bearing along the northwesterly line of said Outlot A, a distance of 30.00 feet; thence southwesterly 36.49 feet along tangential curve concave to the northwest having a radius of 1322.69 feet and central angle of 01 degree 34 minutes 50 seconds; thence South 49 degrees 43 minutes 48 seconds East, 22.11 feet to the point of beginning; thence South 48 degrees 38 minutes 55 seconds West, 210.77 feet; thence South 51 degrees 21 minutes 07 seconds West, 216.26 feet to said southeasterly line of Outlot A, and said line there terminating.

TEMPORARY CONSTRUCTION EASEMENT

A temporary easement for construction purposes over, under, and across that part of Outlot A, LANO ADDITION, according to the recorded plat thereof, Carver County, Minnesota. Said easement is described as follows:
Commencing at the most northerly corner of said Outlot A; thence South 40 degrees 24 minutes 29 seconds West, assumed bearing along the northwesterly line of said Outlot A, a distance of 30.00 feet; thence southwesterly 36.49 feet along tangential curve concave to the northwest having a radius of 1322.69 feet and central angle of 01 degree 34 minutes 50 seconds to the point of beginning; thence South 49 degrees 43 minutes 48 seconds East, 22.11 feet; thence South 48 degrees 38 minutes 55 seconds West, 210.77 feet; thence South 51 degrees 21 minutes 07 seconds West, 216.26 feet to said southeasterly line of Outlot A; thence North 29 degrees 49 minutes 50 seconds West, 30.00 feet to said northwesterly line of Outlot A; thence northeasterly 419.71 feet along said northwesterly line of Outlot A to the point of beginning.

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DANIEL J. ROEBER

SIGNATURE:

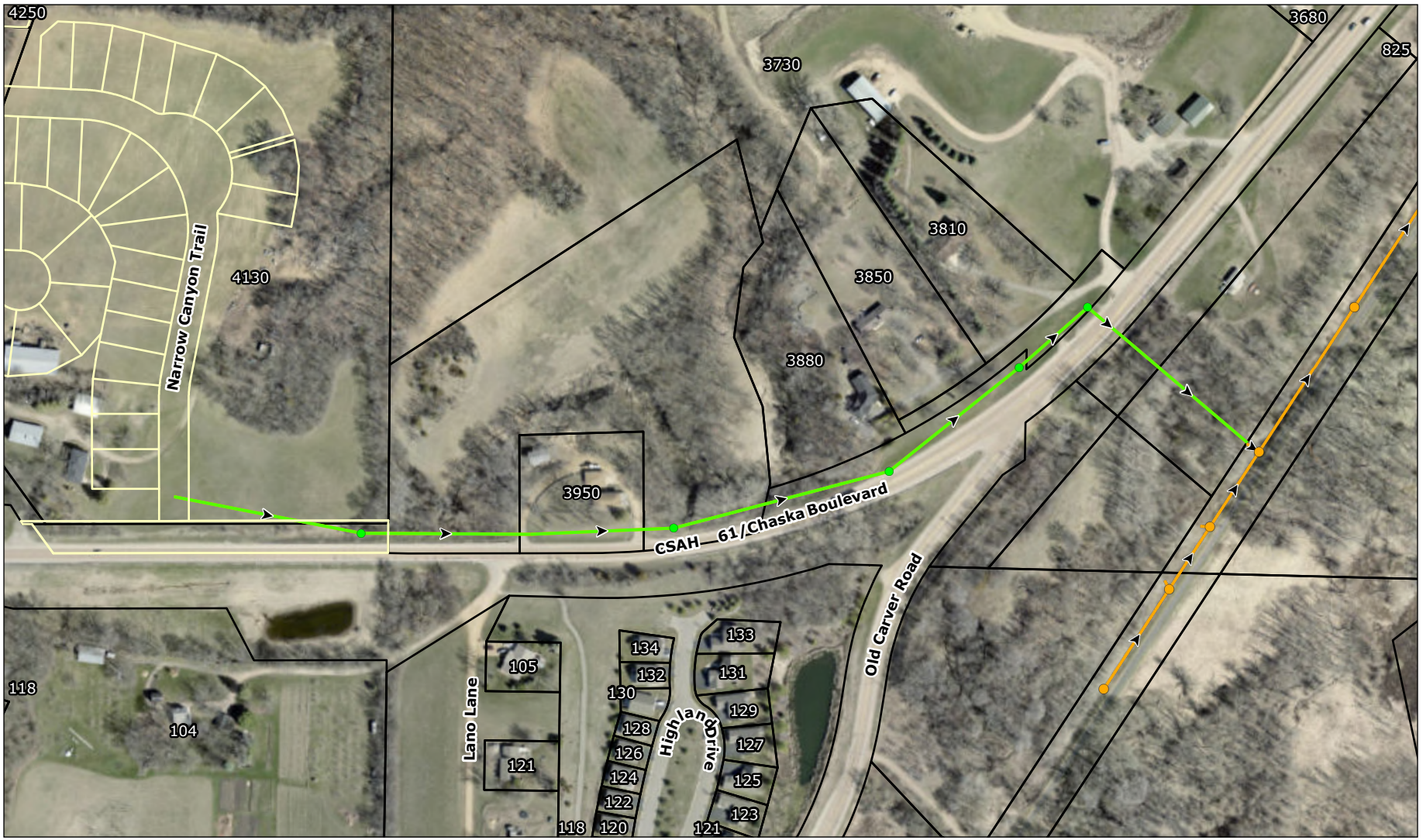
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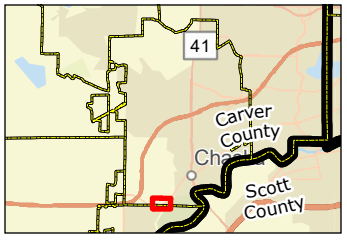
Stantec
Minneapolis Office
733 Marquette Ave
Suite 1000
Minneapolis, MN 55402
Phone: 612-712-2000
Website:www.stantec.com

NAME 193807337_V603.dwg

DRAWN DJR

PROJ. NO. 193807337





Proposed Sanitary Sewer

Existing Sanitary Sewer

Proposed Development

Parcels

N

0 150 300 Feet

(At original document size of 8.5x11)
1:3,600

Notes
1. Coordinate System: NAD 1983 HARN Adj MN Carver Feet
2. Data Sources: ESRI, Carver County
3. Background: 2024 Carver County Imagery

Stantec

Project Location
City of Chaska, Carver Co., MN

Prepared by JCS on 2025-09-24

Client/Project
City of Chaska
CSAH 61/Chaska Boulevard
Southeast Sewer Improvement

193807337

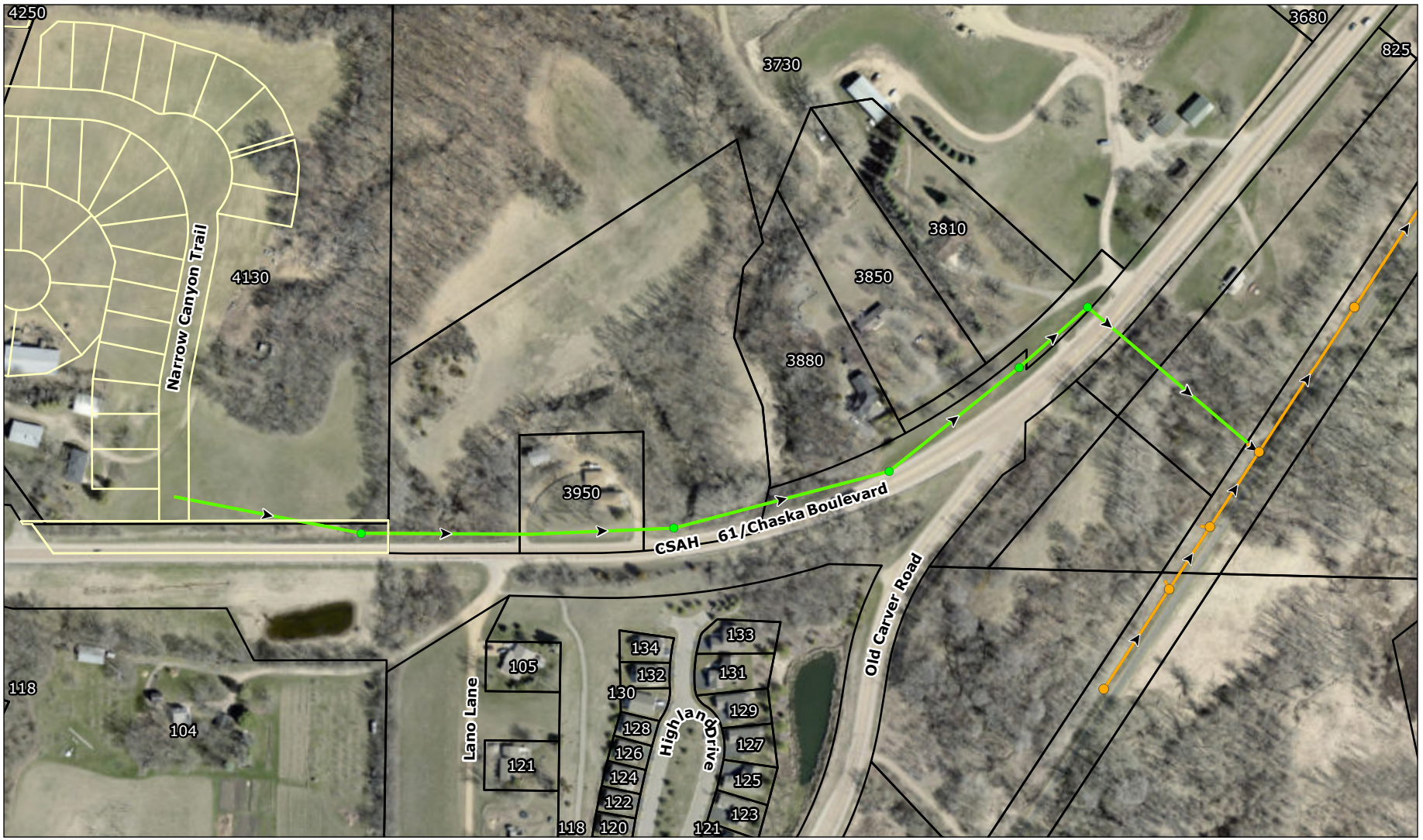
Figure No.
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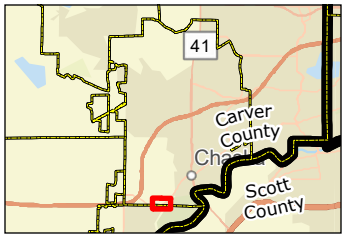
Title
CSAH 61/Chaska Boulevard Southeast Sewer Improvement

Page 1 of 1

U:\1938_proposal\193807390\03_data\gis_cad\gis\pro\CR61_Utility_Improvements\CR61_Utility_Improvements.aprx Revised: 2025-09-24 By: ishuck

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.





Proposed Sanitary Sewer

Existing Sanitary Sewer

Proposed Development

Parcels

N

0 150 300 Feet

(At original document size of 8.5x11)
1:3,600

Notes
1. Coordinate System: NAD 1983 HARN Adj MN Carver Feet
2. Data Sources: ESRI, Carver County
3. Background: 2024 Carver County Imagery

Stantec

Project Location
City of Chaska, Carver Co., MN

Prepared by JCS on 2025-09-24

Client/Project
City of Chaska
CSAH 61/Chaska Boulevard
Southeast Sewer Improvement

193807337

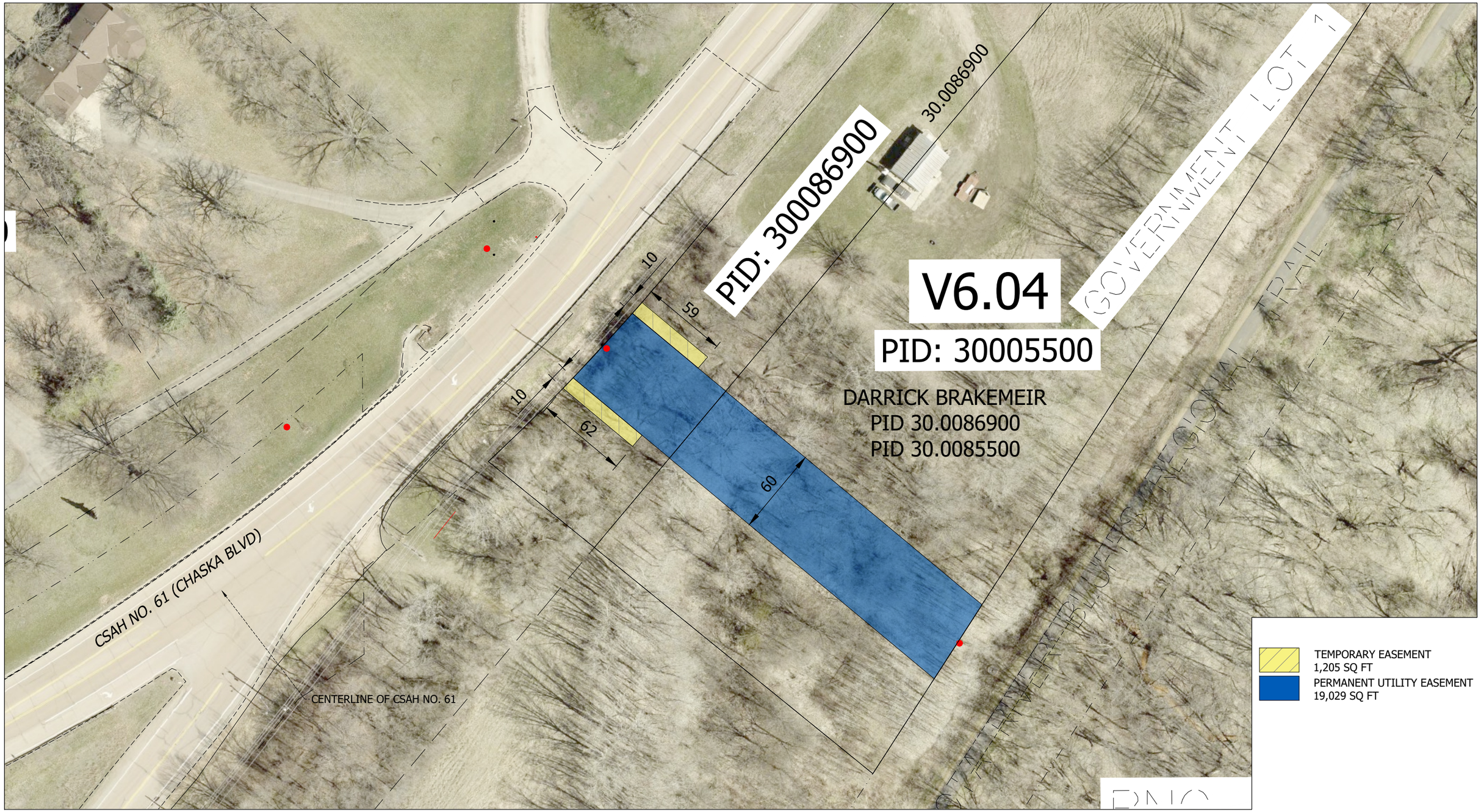
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Title
CSAH 61/Chaska Boulevard Southeast Sewer Improvement

Page 1 of 1

U:\1938_proposal\193807390\03_data\gis_cad\gis\pro\CR61_Utility_Improvements\CR61_Utility_Improvements.aprx Revised: 2025-09-24 By: ishuck

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DARRICK BRAKEMEIR/ PID: 30.0086900 & 30.0085500

CITY OF CHASKA

CSAH 61 IMPROVEMENTS

N

0 30' 60'

EXHIBIT 4

DATE 01/07/2026 PROJ. NO. 193807337

Stantec
733 Marquette Avenue, Suite 1000
Minneapolis, MN 55402
www.stantec.com

Plot Date: 01/07/2026 - 12:49pm
Plotted By: Darrick.Brakemeier
Xrefs: 193807337-XAXT, 193807337-XSHV_June16-2025

REQUEST FOR ACTION
CHASKA CITY COUNCIL
04/20/2026

Subject: Addendum to the Chaska Community Center Meeting and Event Room Rental Agreement with the University of Minnesota

Prepared By: Mary Monteith, Assistant to the Director of Parks & Recreation

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Background:

In June of 2025, the Community Center staff worked with the University of Minnesota on a joint effort to host VeggieRX, a program where Carver County Public Health and River Valley Health Services distribute Arboretum-grown fruit and vegetables to program participant in spaces at the Community Center. The program went great!

The University of Minnesota would like to participate with the Community Center once again on this initiative. The program wood run July-October.

Attached is the Addendum for 2026.

Staff recommend Council approval of partnering with the University of Minnesota once again this year on this.

CHASKA CITY COUNCIL ACTION REQUESTED

Recommendation for City Council Approval of the University of Minnesota's request for rental space at the Community Center.

ADDENDUM TO

Chaska Community Center Meeting and Event Room Rental Agreement

This Addendum is made to the Chaska Community Center Meeting and Event Rooms Rental Agreement Form, which together with this addendum, is an agreement between the City of Chaska, Minnesota ("City") and Regents of the University of Minnesota, through its Landscape Arboretum. (University) regarding use of the Community Center (Facility) for events July 8 to October 14th or thereabout. "Agreement").

1. In the event of any inconsistency between this Addendum and the Agreement (including any procedures, rules and regulations, or attachments thereto), the terms of this Addendum shall control.

2. The parties agree that the Agreement will be silent as to dispute resolution (arbitration and mediation), collection charges, and attorney fees/litigation expenses. Neither City nor University agrees to waive its rights to a jury trial.

3. Because the University and the City are each subject to the Minnesota Government Data Practices Act, any and all confidentiality clauses, statements and banners in the Agreement are hereby deleted and of no further force and effect.

4. This Agreement may be terminated upon one party providing notice to the other if an Uncontrollable Event makes it illegal or impossible to conduct the event(s) contemplated by this Agreement. An "**Uncontrollable Event"** means an event or circumstance that is beyond the reasonable control and without the fault of the party impacted. An Uncontrollable Event may include, but is not limited to, acts of God; civil disorder; terrorist acts or threats; acts of governing authorities; fires, floods, and other natural disasters; strikes or other labor difficulties; public health issues or disease; facility closings or operation disruptions due to severe weather, a failure or disruption of utilities or critical equipment, an active shooter, or other emergencies; or other events, whether similar or dissimilar to the foregoing. For clarity, an Uncontrollable Event will include the COVID-19 pandemic and related circumstances, whether or not foreseeable (including, without limitation, ongoing or new quarantine orders; employee travel or other restrictions; campus closure or policy changes; or state or local governmental orders or advisories). If this Agreement is terminated due to an Uncontrollable Event, both parties waive any claim against the other for damages, provided that any deposits or other amounts paid by one party to the other shall be promptly refunded. Neither party shall be liable for indirect or consequential damages resulting from nonperformance of this Agreement.

5. City agrees to accept University's standard insurance coverage, as evidenced by a Certificate of Insurance naming City as additional insured to be provided to City upon written request, as meeting all insurance requirements.

6. Liability, damage and indemnification provisions, if included in the Agreement, are hereby deleted and replaced with the following:

University will be responsible for damage, loss, or injury caused by University, its employees, event attendees, and contractors in assigned function rooms in the facility during the event, except to the extent caused by the willful or negligent act or omission of the city, its officers, agents, employees, and representatives. The parties' respective liability to each other and to third parties are each subject to the limits in the Minnesota Tort Claims Act, Minn. Stat. § 3.736 and the provisions of Minnesota Statutes

Chapter 466, and other applicable law. Nothing in this agreement shall be construed to be or shall act as a waiver of any immunity or defense available under Minnesota law.

7. The acknowledgment of the University's agent on the Agreement is hereby amended and replaced to read as follows: The person signing this agreement is a duly authorized agent of the University who is empowered to enter this Agreement and the agree to its terms.

CITY OF CHASKA, MINNESOTA

By_____
Name: Taylor Hubbard
Title: Mayor

Date: April 20, 2026_

By_____
Name: Matt Podhradsky By

Name:

Title: City Administrator

Date: April 20, 2026

REGENTS OF THE UNIVERSITY OF MINNESOTA

By_____
Name:
Title:

Date: April 20, 2026

REQUEST FOR ACTION
CHASKA CITY COUNCIL
4/20/2026

Subject: **Awarding of Contracts for Outlot C of the Chaska Municipal Services Building**

Prepared By: Elise Durbin, Assistant City Administrator

Background

On March 16, 2026, the City Council approved the awarding of bids for the Municipal Services Building. The bids that were approved were for the building and site work on the two parcels in which the facility and fuel islands will be located.

As a part of the overall process, design was completed on the extension of Chaska Creek Boulevard south from Creek Road to the ravine on the south end (Outlot C). This design included not only the roadway, but also the trunk sewer and water. In time, the trunk sewer and water will be extended south of the ravine to serve the industrial park that is planned.

Bids

On January 26, 2026, the Council authorized the solicitation of bids for the project, including the extension of the roadway and utilities in Outlot C. These were bid as separate line items so that they could be reviewed apart from the main building project and awarded or rejected accordingly. The bid period was from January 27-February 19, with bid opening occurring on February 19. The following were the results of each of these two categories.

Bid Category 31B – Earthwork and Paving – Outlot C

Veit	$245,145
Frattalone	$250,000
Kusske	$254,480
T Scherber	$382,998

Bid Category 33C – Utilities – Outlot C

Kusske	$398,480
Veit	$479,500
PWS	$609,945
T Scherber	$786,670
Meyer	$863,250
Frattalone	$864,239

Staff Recommendation

City Engineering staff have reviewed the bids in both categories and find the low bids in each category to be appropriate. Both contractors have done work for the city in the past.

Given that, staff recommends approving the awarding of the contracts as follows:

Bid Category	Contractor	Award Amount
31B – Earthwork and Paving – Outlot C	Veit	$245,145
33B – Utilities – Outlot C	Kusske	$398,480

CITY COUNCIL ACTION REQUESTED

Approve the awarding of the contracts and authorize the Mayor and City Administrator to execute the contracts.

CLAIMS ROSTER REPORT

FOR COUNCIL MEETING: **April 20, 2026**

Paid and Unpaid Invoices:
Check #'s 360274-360572 **$3,344,213.11**

Paid Electronic Invoices:
Wire #'s 5193-5219 **$968,128.31**

Amount for Approval-Council Meeting:
April 20, 2026 **$4,312,341.42**

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112727 7 MINUTE SECURITY LLC									
1607		04/05/2026	042126	360363	1,666.66	05/05/2026	INV	PD	SECURITY SERVICES-VULNERA
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107858 ABDO LLP									
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Program ID: apinvlst

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City of Chaska

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CHECK DATE: 04/21/2026									
922666029		03/27/2026	042126	360366	152.57	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922666030		03/27/2026	042126	360366	152.57	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922666035		03/27/2026	042126	360366	152.57	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922666044		03/27/2026	042126	360366	152.57	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922666048		03/27/2026	042126	360366	152.57	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922666049		03/27/2026	042126	360366	134.42	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922673140		03/28/2026	042126	360366	83.62	06/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922673345		03/28/2026	042126	360366	152.57	04/27/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922673346		03/28/2026	042126	360366	152.57	04/27/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922673371		03/28/2026	042126	360366	152.57	04/27/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922673379		03/28/2026	042126	360366	152.57	04/27/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709773		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709774		03/31/2026	042126	360366	155.52	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
922709775		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709776		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709778		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709780		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922709817		03/31/2026	042126	360366	152.57	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922732663		04/02/2026	042126	360366	180.81	05/02/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922732895		04/02/2026	042126	360366	152.57	05/02/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922744031		04/03/2026	042126	360366	152.57	05/03/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922758233		04/06/2026	042126	360366	152.57	05/06/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922758254		04/06/2026	042126	360366	152.57	05/06/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922758317		04/06/2026	042126	360366	152.57	05/06/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922776668		04/07/2026	042126	360366	152.57	05/07/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922776681		04/07/2026	042126	360366	152.57	05/07/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922793247		04/08/2026	042126	360366	152.57	05/08/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922793310		04/08/2026	042126	360366	152.57	05/08/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
922793311		04/08/2026	042126	360366	134.42	05/08/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					10,656.87				
106669 ADIDAS AMERICA INC									
6165099788		03/17/2026	042126	360367	232.00	05/16/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
6165208099		04/06/2026	042126	360367	111.00	06/05/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					343.00				
108949 ADVANTAGE COLLECTION PROFESSIONALS LLC									
8864140		03/31/2026	042126	360368	210.40	04/30/2026	INV	PD	MAR COLLECTION COMMISSION
CHECK DATE: 04/21/2026									
100072 ALTERNATIVE TECHNOLOGIES INC									
58979		02/28/2026	042126	360369	200.00	05/02/2026	INV	PD	WO# 20646 ENTEGRIS SERVIC
CHECK DATE: 04/21/2026									
100073 AMARIL UNIFORM CO									
IV294994		03/27/2026	042126	360370	2,810.78	04/27/2026	INV	PD	D. PECORARO FR CLOTHING
CHECK DATE: 04/21/2026									
107005 AMERICAN ENVIRONMENTAL LLC									
4665		03/31/2026	042126	360371	14,800.00	04/30/2026	INV	PD	SEWER LINING TELEVISING
CHECK DATE: 04/21/2026									
100102 ANCOM COMMUNICATIONS INC									
131322		01/14/2026	040226	360274	847.15	02/13/2026	INV	PD	Pager chargers for dorm r
CHECK DATE: 04/02/2026									
132508		03/11/2026	040726	360282	5,145.72	04/10/2026	INV	PD	PAGER REPLACEMENT PLAN
CHECK DATE: 04/07/2026									
132683		03/25/2026	042126	360372	58.55	04/24/2026	INV	PD	KNOB FOR RADIO
CHECK DATE: 04/21/2026									
					6,051.42				
104852 ANOVA FURNISHINGS INC									
647037		02/24/2026	040726	360283	1,781.84	03/26/2026	INV	PD	BENCH LEGS
CHECK DATE: 04/07/2026									
113426 ANTIKAINEN, COOPER									
359000790-41576		03/30/2026	042126	360373	154.27	04/30/2026	INV	PD	CREDIT BALANCE REFUND-160
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
100119 SHAKOPEE VALLEY FORD									
423777FOW		03/23/2026	042126	360374	1,180.59	04/23/2026	INV	PD	#711 HOOD/GRILL #CA506081
CHECK DATE: 04/21/2026									
424896FOW		04/07/2026	042126	360374	96.20	05/07/2026	INV	PD	#1232 DRIVERS SEAT BELT A
CHECK DATE: 04/21/2026									
424951FOW		04/07/2026	042126	360374	256.78	05/07/2026	INV	PD	#1232 REAR BRAKES/ROTORS
CHECK DATE: 04/21/2026									
425026FOW		04/08/2026	042126	360374	66.05	05/08/2026	INV	PD	#1193 EVAP PURGE VALVE
CHECK DATE: 04/21/2026									
					1,599.62				
100146 ASPEN MILLS INC									
372970		03/25/2026	042126	360375	223.66	04/24/2026	INV	PD	DUTY BOOTS-LISSON
CHECK DATE: 04/21/2026									
373353		04/01/2026	042126	360375	296.16	05/01/2026	INV	PD	DUTY UNIFORM-MUENCH
CHECK DATE: 04/21/2026									
					519.82				
100305 ASSUREDPARTNERS CAPITAL INC									
644951		03/27/2026	040726	360284	38,421.10	04/15/2026	INV	PD	Renewal Policy 01-01-2026
CHECK DATE: 04/07/2026									
100155 AUBURN MANOR									
APR 2026	260002	04/01/2026	042126	360376	200.00	04/30/2026	INV	PD	APR SENIOR CITIZEN DONATI
CHECK DATE: 04/21/2026									
111153 SALLY J AUGUSTIN									
153425		04/03/2026	042126	360377	2,000.00	05/02/2026	INV	PD	Painting of Event Ctr & H
CHECK DATE: 04/21/2026									
101930 AXON ENTERPRISE INC									
INUS437469		04/15/2026	042126	360378	8,600.16	05/15/2026	INV	PD	Drone software integratio
CHECK DATE: 04/21/2026									
100168 BARTLEY SALES COMPANY INC									
23520-0021-3		01/20/2026	040726-2	360327	50,174.80	04/26/2026	INV	PD	Public Safety Facility-Sp
CHECK DATE: 04/07/2026									

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VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
23520-0021-4		02/28/2026	042126	360379	3,020.25	05/15/2026	INV	PD	Public Safety Facility-Sp
CHECK DATE: 04/21/2026									
					53,195.05				
100174 BAUER BUILT TIRE AND BATTERY									
180321608		03/23/2026	042126	360380	77.20	05/15/2026	INV	PD	#304 RETURN AND PURCHASE
CHECK DATE: 04/21/2026									
113450 BEAL, GRETCHEN									
173201800-40610		04/06/2026	042126	360381	344.63	05/06/2026	INV	PD	CREDIT BALANCE REFUND-300
CHECK DATE: 04/21/2026									
113449 BECKER, BOBBI									
209001803-38084		04/06/2026	042126	360382	40.90	05/06/2026	INV	PD	CREDIT BALANCE REFUND-407
CHECK DATE: 04/21/2026									
105265 BEEBE, DENISE									
153518		03/27/2026	042126	360383	126.59	04/27/2026	INV	PD	Mileage-MCFOA Conf 3/25-3
CHECK DATE: 04/21/2026									
100188 BERRY COFFEE COMPANY									
1107190		04/01/2026	042126	360384	122.78	05/01/2026	INV	PD	Coffee for breakroom at C
CHECK DATE: 04/21/2026									
100196 BIFFS INC									
INV292494		04/07/2026	042126	360385	400.00	05/05/2026	INV	PD	EMPTY FD BATHROOM TRAILER
CHECK DATE: 04/21/2026									
113444 BLASER, PRESTON									
359000870-36880		04/06/2026	042126	360386	149.63	05/06/2026	INV	PD	CREDIT BALANCE REFUND-160
CHECK DATE: 04/21/2026									
102279 BOLTON & MENK INC									
0390343		03/20/2026	042126	360387	1,697.25	04/30/2026	INV	PD	MN RIVER BLUFFS REGIONAL
CHECK DATE: 04/21/2026									
0390345		03/23/2026	042126	360387	5,050.00	04/22/2026	INV	PD	2024 DT ST PROJECT
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
0390347		03/23/2026	042126	360387	10,614.00	04/22/2026	INV	PD	SW PARK FUNDING ASSISTANC
CHECK DATE: 04/21/2026									
0390348		03/23/2026	042126	360387	1,642.00	04/22/2026	INV	PD	TH 41 & CSAH 61 IMPROVEME
CHECK DATE: 04/21/2026									
0390542		03/24/2026	042126	360387	7,817.50	04/23/2026	INV	PD	WELL 4 REHABILITATION
CHECK DATE: 04/21/2026									
					26,820.75				
100214 BORDER STATES INDUSTRIES INC									
932233676	260051	04/06/2026	042126	360388	1,259.90	05/25/2026	INV	PD	10 BLW GRND PED HEX BLT
CHECK DATE: 04/21/2026									
100226 BRAUN INTERTEC CORPORATION									
23520-0021-13		01/31/2026	040726-2	360328	1,622.00	04/26/2026	INV	PD	Public Safety Facility-Sp
CHECK DATE: 04/07/2026									
23520-0021-14		02/01/2026	042126	360390	24,434.90	04/15/2026	INV	PD	Public Safety Facility-Sp
CHECK DATE: 04/21/2026									
IN1010615		04/08/2026	042126	360389	7,884.00	05/07/2026	INV	PD	VICTORIA DR UTILITY IMPRO
CHECK DATE: 04/21/2026									
					33,940.90				
113420 BREKKE, CAROL									
410000080-10006519		03/30/2026	042126	360391	55.67	04/30/2026	INV	PD	CREDIT BALANCE REFUND-105
CHECK DATE: 04/21/2026									
100242 BRIDGESTONE GOLF INC									
INV-1003343865		03/30/2026	042126	360392	790.04	04/29/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
INV-1003345591		04/02/2026	042126	360392	802.52	05/02/2026	INV	PD	LOOP RESALE
CHECK DATE: 04/21/2026									
INV-1003345592		04/02/2026	042126	360392	802.52	05/02/2026	INV	PD	TC RESALE
CHECK DATE: 04/21/2026									
					2,395.08				
113452 BROADWAY FLATS LLP									
999888888		04/07/2026	042126	360393	1,750.00	05/07/2026	INV	PD	Refund payment sent to Lo
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
100275 CALLAWAY GOLF									
942179573		03/19/2026	042126	360394	2,397.61	05/18/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942185364		03/19/2026	042126	360394	412.56	07/17/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942189803		03/20/2026	042126	360394	299.70	05/19/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942196262		03/20/2026	042126	360394	417.61	12/01/2026	INV	PD	DEMO/RENTALS
CHECK DATE: 04/21/2026									
942198928		03/21/2026	042126	360394	137.02	05/20/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942214258		03/24/2026	042126	360394	529.20	05/23/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942220378		03/24/2026	042126	360394	599.01	07/22/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942239652		03/26/2026	042126	360394	179.42	07/24/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942251165		03/27/2026	042126	360394	141.02	05/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
942282080		04/01/2026	042126	360394	137.02	05/31/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					5,250.17				
100323 CDW GOVERNMENT INC									
AI41Z9S		03/12/2026	040726	360285	2,316.70	04/11/2026	INV	PD	EQUIP FOR NEW FINANCE EMP
CHECK DATE: 04/07/2026									
AI44T6S		03/13/2026	040726	360285	374.30	04/12/2026	INV	PD	UPS IT INVENTORY
CHECK DATE: 04/07/2026									
AI4DN1W		03/09/2026	040726	360285	83.44	04/08/2026	INV	PD	PRINTER LICENSE FROM PRIN
CHECK DATE: 04/07/2026									
AI5XH5K		03/20/2026	042126	360395	120.33	04/19/2026	INV	PD	UPS NEW FINANCE EMPLOYEE
CHECK DATE: 04/21/2026									
AI5YU9U		03/20/2026	042126	360395	60.80	04/19/2026	INV	PD	PAYROLL HEADSET
CHECK DATE: 04/21/2026									
AI65B8R		03/30/2026	042126	360395	6,032.61	04/29/2026	INV	PD	SURFACE & ACCESSORIES-BLD
CHECK DATE: 04/21/2026									
AI6J75M		03/25/2026	042126	360395	575.08	04/24/2026	INV	PD	PSF MONITORS

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
AI7NJ2I		04/02/2026	042126	360395	339.00	05/02/2026	INV	PD	PSF ADAPTORS
CHECK DATE: 04/21/2026									
AI7ZL2Z		04/06/2026	042126	360395	1,876.28	05/06/2026	INV	PD	SURFACE-B JUNG
CHECK DATE: 04/21/2026									
AI7ZL4I		04/06/2026	042126	360395	1,787.21	05/06/2026	INV	PD	PSF SURFACE
CHECK DATE: 04/21/2026									
					13,565.75				
100332 CENTERPOINT ENERGY RESOURCES CORP									
105010300/MAR26		04/03/2026	041626	360359	4,283.57	05/01/2026	INV	PD	MAR 32100 CHASKA BLVD GAS
CHECK DATE: 04/16/2026									
109045922/MAR26		04/06/2026	041626	360359	11,414.39	05/04/2026	INV	PD	MAR 1661 PARK RIDGE GAS S
CHECK DATE: 04/16/2026									
109052076/MAR26		04/06/2026	041626	360359	6,870.17	05/04/2026	INV	PD	MAR 1611 PARK RIDGE DR GA
CHECK DATE: 04/16/2026									
120564141/MAR26		04/03/2026	041426	360351	19.34	05/01/2026	INV	PD	MAR 1599 OAK CREEK PASS G
CHECK DATE: 04/14/2026									
139150478/MAR26		04/03/2026	041426	360351	19.34	05/01/2026	INV	PD	MAR 3695 GRAND CHEVALLE P
CHECK DATE: 04/14/2026									
3001399873		03/12/2026	040226	360275	3,168.00	04/09/2026	INV	PD	CHEVALLE LIFT STATION
CHECK DATE: 04/02/2026									
64030791582/MAR26		04/03/2026	041426	360351	47.11	05/01/2026	INV	PD	MAR 216 W 4TH ST GAS SVC
CHECK DATE: 04/14/2026									
64030828871/MAR26		04/03/2026	041426	360351	88.18	05/01/2026	INV	PD	MAR 423 N WALNUT ST GAS S
CHECK DATE: 04/14/2026									
					25,910.10				
100337 QWEST CORPORATION									
780039158		04/01/2026	041426	360352	620.38	05/01/2026	INV	PD	APR INTERNET ON DEMAND
CHECK DATE: 04/14/2026									
780087188		04/01/2026	041426	360352	270.94	05/01/2026	INV	PD	APR INTERNET SERVICE
CHECK DATE: 04/14/2026									
					891.32				
100379 CITY OF CHANHASSEN SENIOR CENTER									
153336		04/01/2026	042126	360396	1,859.32	05/01/2026	INV	PD	Tickets/Lunch CDT "Guys a
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
100374 CHANHASSEN, CITY OF									
017242-000 3/31/26		03/31/2026	042126	360397	39.45	04/21/2026	INV	PD	STORMWATER 1/1/26-3/31/26
CHECK DATE: 04/21/2026									
111213 CHASKA COMMONS LLC									
210 CHESTNUT ST N		04/07/2026	042126	360398	2,000.00	05/06/2026	INV	PD	ESCROW REFUND
CHECK DATE: 04/21/2026									
100346 CHASKA DOWNTOWN BUSINESS ALLIANCE									
Q2 2026		04/06/2026	042126	360399	14,525.00	05/05/2026	INV	PD	Q2 SPECIAL SERVICES DISTR
CHECK DATE: 04/21/2026									
100377 ROTARY CLUB OF CHASKA MINNESOTA INC									
6873		04/01/2026	042126	360401	100.00	04/30/2026	INV	PD	Q2 DUES-PODHRADSKY
CHECK DATE: 04/21/2026									
6885		04/01/2026	042126	360400	100.00	04/30/2026	INV	PD	Q2 DUES-SEIBERT
CHECK DATE: 04/21/2026									
					200.00				
105431 EUGENE FLAUVIN MILLER									
153604		04/06/2026	042126	360402	550.00	05/06/2026	INV	PD	#711 CA#506081 HOOD
CHECK DATE: 04/21/2026									
110240 CINTAS CORPORATION NO 2									
5325213805		03/23/2026	042126	360404	115.81	04/22/2026	INV	PD	1ST AID SUPPLIES- TC MAIN
CHECK DATE: 04/21/2026									
5327429511		04/02/2026	042126	360405	276.26	05/01/2026	INV	PD	1st Aide
CHECK DATE: 04/21/2026									
5327656203		04/03/2026	042126	360403	232.01	05/03/2026	INV	PD	MEDICAL SUPPLIES-FD
CHECK DATE: 04/21/2026									
84176/MARCH2026		03/31/2026	041626	360360	1,319.56	04/10/2026	INV	PD	RUG/MAT SVC 2/26/26-3/26/
CHECK DATE: 04/16/2026									
					1,943.64				
100410 CITY OF WACONIA									
1761		03/23/2026	042126	360406	992.00	04/23/2026	INV	PD	SALT BRINE FOR PRETREATME

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
106918 ARTHUR CLESEN INC									
29532-00		03/31/2026	042126	360407	35,794.98	04/30/2026	INV	PD	Irrigation Satellites-Two
CHECK DATE: 04/21/2026									
100416 ROGER CLEVELAND GOLF CO INC									
8879231 SO		03/17/2026	042126-2	360572	462.96	06/15/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
8881939 SO		03/18/2026	042126-2	360572	231.48	06/16/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
8914776 SO		04/01/2026	042126-2	360572	1,042.44	05/31/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					1,736.88				
112451 CLIFTONLARSONALLEN LLP									
L261167437		04/01/2026	042126	360409	5,880.00	04/30/2026	INV	PD	AUDIT SERVICES FOR 12/31/
CHECK DATE: 04/21/2026									
100419 CLOVER CONDOMINIUM ASSOCIATION									
00498838-53	260003	04/01/2026	041426	360353	1,544.84	04/30/2026	INV	PD	MAY COMMUNITY ROOM DUES
CHECK DATE: 04/14/2026									
111222 CNH ARCHITECTS LTD									
3741		03/31/2026	042126	360410	64,994.65	04/15/2026	INV	PD	22096 Chaska Public Safet
CHECK DATE: 04/21/2026									
100428 COBRA GOLF INC									
G4398178		03/20/2026	042126	360411	2,041.36	06/18/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
100436 COMCAST CORPORATION									
0426162/MAR26		03/17/2026	040226	360276	254.85	04/11/2026	INV	PD	TEMP FD INTERNET SVC
CHECK DATE: 04/02/2026									
0458587/APR26		03/26/2026	041426	360354	231.36	04/20/2026	INV	PD	PSF CABLE
CHECK DATE: 04/14/2026									
266361525		03/15/2026	040226	360277	775.00	04/15/2026	INV	PD	MAR CITY HALL FIBER

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/02/2026									
					1,261.21				
105466 COMPUTER INTEGRATION TECHNOLOGIES INC									
511794		03/13/2026	040726	360286	8,387.10	04/12/2026	INV	PD	MAR OFFICE 365 AGREEMENT
CHECK DATE: 04/07/2026									
512152		03/16/2026	040726	360286	276.10	04/15/2026	INV	PD	APR CYBER SECURITY TRAINI
CHECK DATE: 04/07/2026									
					8,663.20				
112484 CONFLUENCE INC									
34300		03/30/2026	042126	360412	26,787.50	04/30/2026	INV	PD	SW Park Mast
CHECK DATE: 04/21/2026									
112116 COSNEY CORPORATION									
23520-0021-2		01/31/2026	040726-2	360329	8,770.40	04/26/2026	INV	PD	Public Safety Facility-Fo
CHECK DATE: 04/07/2026									
100475 CRYSTEEL TRUCK EQUIPMENT INC									
F54324		04/08/2026	042126	360413	6,595.00	05/08/2026	INV	PD	#730 TOOLBOX PACKAGE
CHECK DATE: 04/21/2026									
113423 CUETO SULCA, FREDY									
70188916-40946		03/30/2026	042126	360414	118.04	04/30/2026	INV	PD	CREDIT BALANCE REFUND-768
CHECK DATE: 04/21/2026									
100493 DAMA METAL PRODUCTS INC									
17255		03/31/2026	042126	360415	840.00	04/30/2026	INV	PD	LOCK CYLINDERS FOR LOCK B
CHECK DATE: 04/21/2026									
113437 DESHMUKH, AVINASH									
152403170-37389		04/03/2026	042126	360416	453.92	05/03/2026	INV	PD	CREDIT BALANCE REFUND-715
CHECK DATE: 04/21/2026									
113448 DILKS, NANCY A									
162511200-10008381		04/06/2026	042126	360417	121.48	05/06/2026	INV	PD	CREDIT BALANCE REFUND-110
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
111847 GREGORY WICKENHAUSER									
2233		03/30/2026	042126	360418	4,800.00	04/30/2026	INV	PD	908 BAVARIA HILLS TREE RE
CHECK DATE: 04/21/2026									
113369 DIVERZIFY BUYER LLC									
23520-0021-3 11B		02/15/2026	042126	360419	4,750.00	05/15/2026	INV	PD	Public Safety Facility-Sa
CHECK DATE: 04/21/2026									
23520-0021-4 9D		02/15/2026	042126	360419	10,450.00	05/15/2026	INV	PD	Public Safety Facility-Ca
CHECK DATE: 04/21/2026									
					15,200.00				
100550 DOTCOM PRINTING INC									
28028		02/20/2026	042126	360420	579.83	03/02/2026	INV	PD	TC GIFT CARD HOLDERS
CHECK DATE: 04/21/2026									
113419 DU CHARME, KAREN									
50092701-10015021		03/30/2026	042126	360421	77.38	04/30/2026	INV	PD	CREDIT BALANCE REFUND-217
CHECK DATE: 04/21/2026									
111282 CANNON TECHNOLOGIES INC									
957206483	240117	03/27/2026	042126	360422	8,422.52	04/27/2026	INV	PD	NODE INSTALLS, DOOR HNGRS
CHECK DATE: 04/21/2026									
957224914	240117	03/30/2026	042126	360422	10,464.00	04/30/2026	INV	PD	WATER NODE INSTALLS
CHECK DATE: 04/21/2026									
957233645	240117	03/31/2026	042126	360422	1,500.00	04/30/2026	INV	PD	PROJECT MGMT AMR/AMI RF
CHECK DATE: 04/21/2026									
957265112		04/06/2026	042126	360422	15,159.69	05/06/2026	INV	PD	WTR NODE INSTALLS, WAREHO
CHECK DATE: 04/21/2026									
					35,546.21				
103919 EBERT INC									
23520-0021-13		01/31/2026	040726-2	360330	3,890.25	04/26/2026	INV	PD	Public Safety Facility-Co
CHECK DATE: 04/07/2026									
109763 EBERT, NATHAN									
153558		03/26/2026	042126	360423	462.79	04/25/2026	INV	PD	Reimb-Airfare for Linemen
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
100591 ELECTRICAL PRODUCTION SERVICES INC									
24664		03/18/2026	042126	360424	7,280.00	03/28/2028	INV	PD	OSP ISP SVC CLOVERFIELD T
CHECK DATE: 04/21/2026									
24665		03/18/2026	040726	360287	1,800.00	03/28/2026	INV	PD	MIDDLE SCHOOL CIRCUIT INV
CHECK DATE: 04/07/2026									
					9,080.00				
102657 ENERGY MANAGEMENT SOLUTIONS INC									
11112		03/31/2026	042126	360425	9,250.69	05/05/2026	INV	PD	APRIL MONTHLY RETAINER
CHECK DATE: 04/21/2026									
100617 ESCH CONSTRUCTION SUPPLY INC									
INV100598		03/17/2026	042126	360426	2,474.61	04/16/2026	INV	PD	CORE DRILL BITS/BLADES (S
CHECK DATE: 04/21/2026									
100619 ESS BROTHERS AND SONS INC									
GG1359		03/23/2026	042126	360427	753.00	04/23/2026	INV	PD	CORTINA WOODS POND REPAIR
CHECK DATE: 04/21/2026									
113453 ESS DUMPSTER RENTAL LLC									
15643		04/07/2026	042126	360428	661.05	05/07/2026	INV	PD	DUMPSTER FOR POLICE MOVE
CHECK DATE: 04/21/2026									
110158 BDH2 MARSHALL LLC									
2818889		02/06/2026	040726	360288	298.71	03/31/2026	INV	PD	J. SCHRUPP METER SCHOOL
CHECK DATE: 04/07/2026									
2818891		02/06/2026	040726	360288	298.71	03/31/2026	INV	PD	T. CONWAY METER SCHOOL
CHECK DATE: 04/07/2026									
2818892		02/06/2026	040726	360288	298.71	03/31/2026	INV	PD	T. ANDERSON METER SCHOOL
CHECK DATE: 04/07/2026									
					896.13				
110568 KIRI ANN FAUL									
2673		03/31/2026	042126	360429	675.00	04/30/2026	INV	PD	Pre Employment Eval - Jef
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
110169 FELHABER LARSON FENLON & VOGT PA									
883806		03/16/2026	040726	360289	12,012.00	04/15/2026	INV	PD	GM DAVIS PROPERTIES CONDE
CHECK DATE: 04/07/2026									
883807		03/16/2026	040726	360289	858.00	04/15/2026	INV	PD	41 PROJECT PROPERTY ACQUI
CHECK DATE: 04/07/2026									
885149		04/10/2026	042126	360430	3,081.00	05/09/2026	INV	PD	GM DAVIS PROPERTIES CONDE
CHECK DATE: 04/21/2026									
					15,951.00				
112644 FERGUSON US HOLDINGS INC									
0561085	260049	03/11/2026	040726	360290	687.55	04/11/2026	INV	PD	INVENTORY-CURB STOPS
CHECK DATE: 04/07/2026									
113433 FERRELL, JAMES									
152363101-35558		04/03/2026	042126	360431	201.03	05/03/2026	INV	PD	CREDIT BALANCE REFUND-533
CHECK DATE: 04/21/2026									
100655 FERRELLGAS 7780961									
1133241663		03/04/2026	042126	360432	78.70	04/07/2026	INV	PD	PROPANE
CHECK DATE: 04/21/2026									
1133449747		03/25/2026	042126	360432	81.58	04/25/2026	INV	PD	PROPANE
CHECK DATE: 04/21/2026									
					160.28				
106319 CHAD JEREMY FIGG									
March 26 TKD		04/07/2026	042126	360433	923.40	05/08/2026	INV	PD	March 2026 Tae Kwon Do
CHECK DATE: 04/21/2026									
112656 FIRST DIGITAL COMMUNICATIONS LLC									
00954261-1		04/01/2026	041426	360355	553.77	05/01/2026	INV	PD	APR SIP PHONE BILL
CHECK DATE: 04/14/2026									
111488 AT&T MOBILITY NATIONAL ACCOUNTS LLC									
287333620278x40326		03/25/2026	040226	360278	879.47	04/20/2026	INV	PD	MAR FIRSTNET MOBILE
CHECK DATE: 04/02/2026									
112430 FLAG AND ANTHEM LLC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
3665950		03/13/2026	040726	360291	987.68	04/12/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
112118 FOCAL POINT FIXTURES INC									
23520-0021-8		01/23/2026	040726-2	360331	73,814.05	04/26/2026	INV	PD	Public Safety Facility-Ar
CHECK DATE: 04/07/2026									
112567 FORCE AMERICA DISTRIBUTING LLC									
IN001-2148036		04/01/2026	042126	360434	66.15	05/01/2026	INV	PD	#114 SANDER/AUGER SENSOR
CHECK DATE: 04/21/2026									
113172 FS.COM INC									
IN102604030282		04/03/2026	042126	360435	370.00	05/03/2026	INV	PD	NETWORK SWITCH MODULES-IT
CHECK DATE: 04/21/2026									
100693 FS3 INC									
98066		03/19/2026	040726	360292	1,253.64	04/18/2026	INV	PD	PULLING LUBE
CHECK DATE: 04/07/2026									
98216		04/02/2026	042126	360436	656.19	05/02/2026	INV	PD	PULLING STRING
CHECK DATE: 04/21/2026									
					1,909.83				
113421 GASSEN, GRACE									
550301000-40892		03/30/2026	042126	360437	151.93	04/30/2026	INV	PD	CREDIT BALANCE REFUND-800
CHECK DATE: 04/21/2026									
112160 PT INTERMEDIATE HOLDINGS IV LLC									
6688740		03/17/2026	040726	360293	1,777.06	04/16/2026	INV	PD	OAK 19 Preventative Maint
CHECK DATE: 04/07/2026									
6695446		04/10/2026	042126	360438	371.40	05/10/2026	INV	PD	Svc call for catering kit
CHECK DATE: 04/21/2026									
					2,148.46				
113431 GEARCO JV HOLDINGS LLC									
42205360		03/23/2026	042126	360439	1,342.68	04/22/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
42205549		03/24/2026	042126	360439	1,632.87	04/23/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
42206587		03/27/2026	042126	360439	2,986.85	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					5,962.40				
112573 XYLOTECH SYSTEMS INC									
661571		04/03/2026	042126	360440	881.36	05/03/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
101463 GOPHER STATE ONE CALL									
6030284		03/31/2026	042126	360441	302.40	04/30/2026	INV	PD	MARCH LOCATES
CHECK DATE: 04/21/2026									
112119 GR MECHANICAL PLUMBING & HEATING INC									
23520-0021-18		01/14/2026	040726-2	360332	43,845.54	04/26/2026	INV	PD	Public Safety Facility-Pl
CHECK DATE: 04/07/2026									
23520-0021-19		02/16/2026	042126	360442	24,581.25	05/15/2026	INV	PD	Public Safety Facility-Pl
CHECK DATE: 04/21/2026									
					68,426.79				
100763 GRACZYK, NOEL									
153386		02/26/2026	042126	360443	4.64	05/02/2026	INV	PD	MILEAGE-UPS STORE TO MAIL
CHECK DATE: 04/21/2026									
100759 WW GRAINGER INC									
9837385625		03/11/2026	040726	360294	54.86	04/10/2026	INV	PD	KITCHEN TILE
CHECK DATE: 04/07/2026									
9837451096		03/11/2026	040726	360295	922.20	04/10/2026	INV	PD	CLEANING SUPPLIES-TC
CHECK DATE: 04/07/2026									
9840032057		03/12/2026	040726	360294	296.34	04/11/2026	INV	PD	TRANSFER PUMP
CHECK DATE: 04/07/2026									
9841956205		03/16/2026	040726	360294	55.97	04/15/2026	INV	PD	KITCHEN TILE
CHECK DATE: 04/07/2026									
9843974743		03/17/2026	040726	360294	160.00	04/16/2026	INV	PD	CLIPS FOR MINODES
CHECK DATE: 04/07/2026									
9844339268		03/17/2026	040726	360294	868.15	04/16/2026	INV	PD	CLOSER FOR SIDE DOOR
CHECK DATE: 04/07/2026									
9846254820		03/18/2026	042126	360444	92.89	04/17/2026	INV	PD	EVENT CTR KITCHEN DOOR

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
9848735941		03/20/2026	042126	360444	773.70	04/19/2026	INV	PD	MINODE CLIPS
CHECK DATE: 04/21/2026									
9850776387		03/23/2026	042126	360444	99.20	04/22/2026	INV	PD	KITCHEN PLUMBING
CHECK DATE: 04/21/2026									
9851329814		03/23/2026	042126	360444	114.97	04/22/2026	INV	PD	JAW PULLER
CHECK DATE: 04/21/2026									
9851329822		03/23/2026	042126	360444	233.52	04/22/2026	INV	PD	JAW PULLER-5 TON
CHECK DATE: 04/21/2026									
					3,671.80				
112120 GRAZZINI BROTHERS & COMPANY									
23520-0021-6		01/31/2026	040726-2	360333	45,350.60	04/26/2026	INV	PD	Public Safety Facility-Ti
CHECK DATE: 04/07/2026									
23520-0021-7		02/28/2026	042126	360445	9,690.00	05/15/2026	INV	PD	Public Safety Facility-Ti
CHECK DATE: 04/21/2026									
					55,040.60				
100782 GS DIRECT INC									
382955		03/25/2026	042126	360446	455.45	04/25/2026	INV	PD	PLOTTER SUPPLIES
CHECK DATE: 04/21/2026									
113440 HAMMER, ANGEL M									
70188986-10013962		04/06/2026	042126	360447	64.42	05/06/2026	INV	PD	CREDIT BALANCE REFUND-710
CHECK DATE: 04/21/2026									
113411 TITAN SERVICES SOLUTIONS									
3608		04/01/2026	042126	360448	4,330.00	05/01/2026	INV	PD	APR CURL/EVENT CTR CLEANI
CHECK DATE: 04/21/2026									
3609		04/01/2026	042126	360448	982.80	05/01/2026	INV	PD	MAR EVENT LABOR
CHECK DATE: 04/21/2026									
					5,312.80				
100807 HARTMAN COMPANIES INC									
23520-0021-3		01/31/2026	040726-2	360334	4,878.25	04/26/2026	INV	PD	Public Safety Facility-La
CHECK DATE: 04/07/2026									
100810 HAWKINS INC									

City of Chaska

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INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
7367773		03/20/2026	042126	360449	7,024.58	05/04/2026	INV	PD	WTP CHEMICALS
CHECK DATE: 04/21/2026									
7382901		04/06/2026	042126	360449	6,979.20	05/21/2026	INV	PD	WTP CHEMICALS
CHECK DATE: 04/21/2026									
					14,003.78				
110461 HEARTLAND BUSINESS SYSTEMS LLC									
866075-H		02/24/2026	040726	360296	15,342.34	03/24/2026	INV	PD	EOL NETWORK EQUIP REPLACE
CHECK DATE: 04/07/2026									
866075-RTN		03/30/2026	040726	360296	-4,769.79	04/04/2026	CRM	PD	RETURN POWER SUPPLIES-EOL
CHECK DATE: 04/07/2026									
868021-H		03/05/2026	042126	360450	16,410.68	04/04/2026	INV	PD	WIRELESS NETWORK EQUIP-IT
CHECK DATE: 04/21/2026									
869069-H		03/12/2026	040726	360296	3,164.25	04/11/2026	INV	PD	POWER SUPPLIES-EOL NETWOR
CHECK DATE: 04/07/2026									
					30,147.48				
110502 HEITZ, BRANDON									
153557		03/26/2026	042126	360451	437.79	04/25/2026	INV	PD	Reimb-Airfare for Linemen
CHECK DATE: 04/21/2026									
100841 HERMANS LANDSCAPE SUPPLIES									
66461/1		03/30/2026	042126	360452	100.00	04/30/2026	INV	PD	WMB REPAIRS-EAST LAKE DR
CHECK DATE: 04/21/2026									
66462/1		03/30/2026	042126	360452	100.00	04/30/2026	INV	PD	WMB REPAIRS-EAST LAKE DR
CHECK DATE: 04/21/2026									
66472/1		03/31/2026	042126	360452	100.00	04/30/2026	INV	PD	WMB REPAIRS-EAST LAKE DR
CHECK DATE: 04/21/2026									
					300.00				
100848 HIGH TECH CLEANING INC									
22309		03/20/2026	040726	360297	1,246.15	04/19/2026	INV	PD	OAK 19 ANNUAL STEAM CLEAN
CHECK DATE: 04/07/2026									
22310		03/20/2026	040726	360297	1,277.09	04/20/2026	INV	PD	PSC CLEANING SUPPLIES
CHECK DATE: 04/07/2026									
22322		03/27/2026	042126	360453	586.25	04/27/2026	INV	PD	PSF SHELVING FOR PAPER PR
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
22327		04/01/2026	042126	360453	3,392.82	05/01/2026	INV	PD	CITY HALL
CHECK DATE: 04/21/2026									
22328		04/01/2026	042126	360453	535.60	05/01/2026	INV	PD	COMMUNITY ROOM-CLOVER RID
CHECK DATE: 04/21/2026									
22329		04/01/2026	042126	360453	600.00	05/01/2026	INV	PD	TEMP FIRE STATION
CHECK DATE: 04/21/2026									
22330		04/01/2026	042126	360453	1,251.45	05/01/2026	INV	PD	HISTORY CENTER
CHECK DATE: 04/21/2026									
22331		04/01/2026	042126	360453	388.56	05/01/2026	INV	PD	IT DEPARTMENT
CHECK DATE: 04/21/2026									
22332		04/01/2026	042126	360453	2,603.86	05/01/2026	INV	PD	MSB
CHECK DATE: 04/21/2026									
22333		04/01/2026	042126	360453	190.55	05/01/2026	INV	PD	STANTEC BUILDING
CHECK DATE: 04/21/2026									
22334		04/01/2026	042126	360453	684.95	05/01/2026	INV	PD	WTP
CHECK DATE: 04/21/2026									
22391		04/03/2026	042126	360453	284.02	05/03/2026	INV	PD	SAFETY CAMPUS CLEANING SU
CHECK DATE: 04/21/2026									
22395		04/06/2026	042126	360453	4,690.00	05/06/2026	INV	PD	PRE-MOVE IN CLEANING
CHECK DATE: 04/21/2026									
22399		04/07/2026	042126	360453	1,886.88	05/07/2026	INV	PD	PRE-MOVE IN CLEANING
CHECK DATE: 04/21/2026									
					19,618.18				
100859 HOISINGTON KOEGLER GROUP INC									
026-004-2		04/14/2026	042126	360454	15,900.68	05/14/2026	INV	PD	CITY HALL PLAZA IMPROVEME
CHECK DATE: 04/21/2026									
106151 HOLT TOUR AND CHARTER INC									
53908		04/14/2026	042126	360455	935.00	05/14/2026	INV	PD	transportation to Treasur
CHECK DATE: 04/21/2026									
107682 HUBBARD, TAYLOR									
153513		03/18/2026	042126	360456	150.51	05/03/2026	INV	PD	Mileage-Capitol 3/11, 3/1
CHECK DATE: 04/21/2026						PAYEE: HUBBARD, TAYLOR			
100879 PRAIRIE TECHNOLOGIES INC OF MN									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
260240		03/18/2026	040726	360298	890.50	04/18/2026	INV	PD	TROUBLE SHOOTING IN BAS
CHECK DATE: 04/07/2026									
113409 I & S GROUP INC									
129863		02/28/2026	040726	360299	2,417.50	04/10/2026	INV	PD	CR 61 IMP-HIGH POINT VIST
CHECK DATE: 04/07/2026									
104751 IMPACT MAILING OF MINNESOTA INC									
222650		04/06/2026	042126	360457	9,392.24	05/06/2026	INV	PD	MAR UTILITY BILLING
CHECK DATE: 04/21/2026									
222664		04/06/2026	042126	360457	1,794.54	05/06/2026	INV	PD	MAR REMINDER NOTICES
CHECK DATE: 04/21/2026									
222665		04/06/2026	042126	360457	824.28	05/06/2026	INV	PD	MAR DISCONNECT NOTICES
CHECK DATE: 04/21/2026									
222666		04/06/2026	042126	360457	628.40	05/06/2026	INV	PD	MAR FINAL BILLS
CHECK DATE: 04/21/2026									
					12,639.46				
112122 INDUSTRIAL CONSTRUCTION SPECIALISTS LLC									
23520-0021-11		02/16/2026	042126	360458	2,137.50	05/15/2026	INV	PD	Public Safety Facility-St
CHECK DATE: 04/21/2026									
110528 INVOICE CLOUD INC									
3052-2026_3		03/31/2026	042126	360459	15,327.73	04/10/2026	INV	PD	MAR UB PAYMENT PROCESSING
CHECK DATE: 04/21/2026									
110636 J HARLEN CO INC									
1809924		03/23/2026	042126	360460	201.98	04/22/2027	INV	PD	TOOLS FOR RODEO
CHECK DATE: 04/21/2026									
1810659		03/26/2026	042126	360460	48.49	04/25/2026	INV	PD	TOOLS FOR RODEO
CHECK DATE: 04/21/2026									
					250.47				
113422 JABR, AHMED									
157000530-40944		03/30/2026	042126	360461	105.51	04/30/2026	INV	PD	CREDIT BALANCE REFUND-325
CHECK DATE: 04/21/2026									
111168 JM TEST SYSTEMS LLC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
S990062-IN		03/11/2026	040726	360300	8,071.95	04/11/2026	INV	PD	GROUNDS, LINE GUARD & HOT
CHECK DATE: 04/07/2026									
100972 JT SERVICES OF MINNESOTA									
JT26-098-08	260055	04/08/2026	042126	360462	12,053.36	05/10/2026	INV	PD	2 STR LGHT STD 24'BLK W/A
CHECK DATE: 04/21/2026									
113445 JURBALA, ZOE									
80207041-40822		04/06/2026	042126	360463	24.85	05/06/2026	INV	PD	CREDIT BALANCE REFUND-104
CHECK DATE: 04/21/2026									
112124 KELLEHER CONSTRUCTION INC									
23520-0021-18		01/23/2026	040726-2	360335	7,695.00	04/26/2026	INV	PD	Public Safety Facility-Co
CHECK DATE: 04/07/2026									
100981 KELLINGTON CONSTRUCTION INC									
23520-0021-15		01/30/2026	040726-2	360336	30,305.00	04/26/2026	INV	PD	Public Safety Facility-Ro
CHECK DATE: 04/07/2026									
23520-0021-16		02/23/2026	042126	360464	8,051.73	05/15/2026	INV	PD	Public Safety Facility-Ro
CHECK DATE: 04/21/2026									
					38,356.73				
102949 KENNEDY & GRAVEN CHARTERED									
192639		03/31/2026	042126	360465	192.50	04/30/2026	INV	PD	MAR LEGAL-EMPLOYMENT & LA
CHECK DATE: 04/21/2026									
111838 KOCH, ALEX									
153559		03/29/2026	042126	360466	156.19	04/28/2026	INV	PD	Reimb-Mileage to class in
CHECK DATE: 04/21/2026									
113434 KOHNEN, JOSHUA									
350040585-40423		04/03/2026	042126	360467	25.87	05/03/2026	INV	PD	CREDIT BALANCE REFUND-312
CHECK DATE: 04/21/2026									
101018 KRISS PREMIUM PRODUCTS INC									
199758		03/16/2026	040726	360301	344.49	04/16/2026	INV	PD	Arena Condensing Tower Ch
CHECK DATE: 04/07/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
101022 KUSSKE CONSTRUCTION COMPANY LLC									
23520-0021-14		01/31/2026	040726-2	360337	74,194.64	04/26/2026	INV	PD	Public Safety Facility-Ea
CHECK DATE: 04/07/2026									
102881 LANO EQUIPMENT INC									
03-1225234		04/02/2026	042126	360468	303.56	05/02/2026	INV	PD	#717 BOMAG TAMPER
CHECK DATE: 04/21/2026									
03-1225235		04/02/2026	042126	360468	229.48	05/02/2026	INV	PD	#85 PLATE TAMPER REPAIR
CHECK DATE: 04/21/2026									
					533.04				
101043 LANO EQUIPMENT INC									
01-1225527		04/03/2026	042126	360469	743.59	05/03/2026	INV	PD	#147 DPF MUFFLER
CHECK DATE: 04/21/2026									
113456 STEVEN D LARSON									
153628		04/14/2026	042126	360470	150.00	05/14/2026	INV	PD	presentation "7th Inning
CHECK DATE: 04/21/2026									
101050 LAW ENFORCEMENT LABOR SERVICES INC									
Apr-26		04/03/2026	040726	360302	1,898.00	04/03/2026	INV	PD	Apr-26 Police Union Dues
CHECK DATE: 04/07/2026									
101056 LEAGUE OF MINNESOTA CITIES									
10388		04/10/2026	042126	360471	2,000.00	04/30/2026	INV	PD	Claim-Plow damaged drivew
CHECK DATE: 04/21/2026									
101071 LENZEN CHEVROLET BUICK INC									
92491		03/26/2026	042126	360472	134.75	04/26/2026	INV	PD	#305 ENGINE MOUNT
CHECK DATE: 04/21/2026									
92496		03/27/2026	042126	360472	99.75	04/27/2026	INV	PD	#305 ENGINE OIL COOLER LI
CHECK DATE: 04/21/2026									
					234.50				
110118 LOCKRIDGE GRINDAL NAUEN PLLP									
123178		04/01/2026	042126	360473	3,333.33	04/30/2026	INV	PD	APR LOBBYIST FOR CITY SQU

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
105710 MACQUEEN EMERGENCY GROUP									
P14036		03/25/2026	042126	360474	329.43	04/25/2026	INV	PD	#312 REAR DRIVERS DOOR HA
CHECK DATE: 04/21/2026									
113417 MADSEN, AMY									
183420020-10007519		03/30/2026	042126	360475	77.63	04/30/2026	INV	PD	CREDIT BALANCE REFUND-290
CHECK DATE: 04/21/2026									
112351 MANSFIELD SERVICE PARTNERS LLC									
IN-00364961		03/31/2026	042126	360476	21,278.23	04/30/2026	INV	PD	FUEL
CHECK DATE: 04/21/2026									
111931 MASTER TECHNOLOGY GROUP									
00741912		03/24/2026	042126	360477	525.00	04/23/2026	INV	PD	TEMP STATION MONITORING
CHECK DATE: 04/21/2026									
107309 MATAN, HODAN									
250000440-10003401		04/06/2026	042126	360478	6.57	05/06/2026	INV	PD	CREDIT BALANCE REFUND-449
CHECK DATE: 04/21/2026									
101142 MAVO SYSTEMS INC									
23520-0021-1		01/21/2026	040726-2	360338	59,375.00	04/26/2026	INV	PD	Public Safety Facility-Fl
CHECK DATE: 04/07/2026									
101168 MELCHERT HUBERT SJODIN PLLP									
184602		03/20/2026	040726	360303	11,680.20	04/19/2026	INV	PD	MAR LEGAL
CHECK DATE: 04/07/2026									
184608		03/23/2026	042126	360479	398.75	04/22/2026	INV	PD	CROOKED PINT LEASE
CHECK DATE: 04/21/2026									
					12,078.95				
101183 METROPOLITAN COUNCIL									
MAR 2026 SAC		03/31/2026	042126	360480	12,300.75	04/30/2026	INV	PD	MAR SAC CHARGES
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
101182 METROPOLITAN COUNCIL									
0001204397		04/02/2026	042126	360481	363,801.48	05/01/2026	INV	PD	MAY SEWER SERVICES FOR ME
CHECK DATE: 04/21/2026									
101187 METRO SALES INC									
INV3048013		03/25/2026	042126	360482	790.08	04/24/2026	INV	PD	TC PRINTER
CHECK DATE: 04/21/2026									
INV3054417		04/01/2026	042126	360482	139.78	05/01/2026	INV	PD	Contract Invoice - Squad
CHECK DATE: 04/21/2026									
INV3054820		04/01/2026	042126	360482	357.49	05/01/2026	INV	PD	Contract Invoice
CHECK DATE: 04/21/2026									
INV3060983		04/09/2026	042126	360482	172.48	05/09/2026	INV	PD	RICOH COPIER-CURL/EVENT C
CHECK DATE: 04/21/2026									
					1,459.83				
102688 MINNESOTA STATE COLLEGES AND UNIVERSITIES									
57771		02/17/2026	040726	360304	573.50	03/17/2026	INV	PD	Driver Safety Discount Pr
CHECK DATE: 04/07/2026									
113413 MID-AMERICA BUSINESS SYSTEMS AND EQUIPMENT INC									
23520-0021-10C-1		01/22/2026	040726-2	360339	154,130.55	04/26/2026	INV	PD	Public Safety Facility-Lo
CHECK DATE: 04/07/2026									
23520-0021-10E-1		01/22/2026	040726-2	360339	160,626.00	04/26/2026	INV	PD	Public Safety Facility-Mo
CHECK DATE: 04/07/2026									
23520-0021-10F-1		01/22/2026	040726-2	360339	165,832.94	04/26/2026	INV	PD	Public Safety Facility-We
CHECK DATE: 04/07/2026									
					480,589.49				
101194 MIDWEST AQUA CARE INC									
4381		03/19/2026	042126	360483	3,250.00	04/19/2026	INV	PD	FIREMANS LAKE POND MAINTE
CHECK DATE: 04/21/2026									
105919 MIDWEST FENCE & MFG COMPANY									
199612		03/31/2026	042126	360484	18,881.00	04/30/2026	INV	PD	NEW TRASH ENCLOSURE TC
CHECK DATE: 04/21/2026									
101204 MIDWEST PLAYSCAPES INC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
11350		03/23/2026	042126	360485	23,080.25	04/22/2026	INV	PD	MEADOW PK SHADE STRUCTURE
CHECK DATE: 04/21/2026									
113414 MIDWEST SPECIALTY MAINTENANCE INC									
23520-0021-1C-1		01/31/2026	040726-2	360340	43,240.20	04/26/2026	INV	PD	Public Safety Facility-Fi
CHECK DATE: 04/07/2026									
111104 MILLER MENDEL INC									
14715		03/31/2026	042126	360486	21.48	05/02/2026	INV	PD	Data Storage - eSOPH
CHECK DATE: 04/21/2026									
113438 MINERAL SERVICE PLUS									
444445190-42445		04/03/2026	042126	360487	4,718.50	05/03/2026	INV	PD	CREDIT BALANCE REFUND-748
CHECK DATE: 04/21/2026									
101288 MINNESOTA BOARD OF WATER/SOIL RESOURCES									
00000919833		03/27/2026	040726	360305	90.00	04/19/2026	INV	PD	2026 MWPCP TRAINING-ALCOT
CHECK DATE: 04/07/2026									
152785		03/16/2026	040726	360305	90.00	04/19/2026	INV	PD	2026 MWPCP TRAINING-ALCOT
CHECK DATE: 04/07/2026									
					180.00				
101217 MINNESOTA CHILD SUPPORT PMT CTR									
PR0403260015739009		04/03/2026	040726	360306	249.65	04/03/2026	INV	PD	040326 Payroll - Child Su
CHECK DATE: 04/07/2026									
PR0403260015806598		04/03/2026	040726	360306	461.46	04/03/2026	INV	PD	040326 Payroll - Child Su
CHECK DATE: 04/07/2026									
					711.11				
101337 MINNESOTA DEPARTMENT OF HEALTH									
1100002-1st Qtr 2026		02/06/2026	042126	360489	30,961.29	04/30/2026	INV	PD	Q1 Water Supply Service C
CHECK DATE: 04/21/2026									
152730		03/26/2026	042126	360488	23.00	04/26/2026	INV	PD	D. ABRAHAM CLASS B RENEWA
CHECK DATE: 04/21/2026									
					30,984.29				
101247 MINNESOTA MUNICIPAL UTILITIES ASSN									
68780		04/01/2026	042126	360490	2,612.50	05/01/2026	INV	PD	APP LINEWORKER TRAIN PROG

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
68781		04/01/2026	042126	360490	2,565.00	05/01/2026	INV	PD	JT & SAFETY PROG Q2 2026
CHECK DATE: 04/21/2026									
68791		03/31/2026	042126	360490	585.00	04/30/2026	INV	PD	D. PECORARO UNDERGROUND S
CHECK DATE: 04/21/2026									
					5,762.50				
110849 MINNESOTA NATIVE LANDSCAPES INC									
1063		03/23/2026	042126	360491	3,857.00	04/22/2026	INV	PD	SEED FOR C2 SEM FEN & STO
CHECK DATE: 04/21/2026									
101303 MN TEAMSTER PUBLIC AND LAW ENFORCEMENT									
Apr-26		04/03/2026	040726	360307	6,439.00	04/03/2026	INV	PD	Apr-26 Local #320 Union D
CHECK DATE: 04/07/2026									
101276 MINNESOTA VALLEY ELECTRIC COOPERATIVE									
107050711/MAR26		03/27/2026	041626	360361	1,521.24	04/22/2026	INV	PD	MAR ST LITES-TOWN COURSE
CHECK DATE: 04/16/2026									
107051510/MAR26		03/23/2026	040726	360308	43.84	04/16/2026	INV	PD	MAR 82ND ST & HWY 41 SIGN
CHECK DATE: 04/07/2026									
778320601/MAR26		03/23/2026	040726	360308	205.51	04/16/2026	INV	PD	MAR CHEVALLE LIFT STATION
CHECK DATE: 04/07/2026									
778377500/MAR26		04/07/2026	041626	360361	60.47	05/02/2026	INV	PD	MAR 12500 COUNTY RD 11 SI
CHECK DATE: 04/16/2026									
778377800/MAR26		04/07/2026	041626	360361	41.46	05/02/2026	INV	PD	MAR 4250 ENGLER BLVD SIGN
CHECK DATE: 04/16/2026									
778377900/MAR26		04/07/2026	041626	360361	48.77	05/02/2026	INV	PD	MAR 4100 ENGLER BLVD SIGN
CHECK DATE: 04/16/2026									
780272000/MAR26		03/23/2026	040726	360308	15.84	04/16/2026	INV	PD	MAR CHEVALLE IRRIGATION B
CHECK DATE: 04/07/2026									
781385500/MAR26		04/07/2026	041626	360361	15.57	05/02/2026	INV	PD	MAR 4463 COUNTY RD 44
CHECK DATE: 04/16/2026									
781796600/MAR26		03/23/2026	040726	360308	283.39	04/16/2026	INV	PD	MAR 1599 OAK CREEK PASS
CHECK DATE: 04/07/2026									
					2,236.09				
105308 MINNESOTA VALLEY UTILITY SERVICES LLC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
1081733		04/08/2026	042126	360492	2,487.00	05/08/2026	INV	PD	MONTHLY SUBSTATION MAINTE
CHECK DATE: 04/21/2026									
101281 KRISTIE MITCHELL									
152560		03/23/2026	042126	360493	2,401.20	04/23/2026	INV	PD	2026 Ice Show Instructor
CHECK DATE: 04/21/2026									
101341 MINNESOTA DEPT OF LABOR & INDUSTRY									
MARCH0190352026		03/31/2026	042126	360494	2,046.61	04/30/2026	INV	PD	MAR PERMIT SURCHARGES
CHECK DATE: 04/21/2026									
101327 MP NEXLEVEL LLC									
1460359		04/09/2026	042126	360495	89.10	05/09/2026	INV	PD	Q1 GOPHER STATE LOCATE RE
CHECK DATE: 04/21/2026									
1460360		04/09/2026	042126	360495	5,820.00	05/09/2026	INV	PD	Q1 FIBER LOCATING
CHECK DATE: 04/21/2026									
					5,909.10				
103088 SID TOOL CO INC									
29406191		03/24/2026	042126	360496	100.00	04/24/2026	INV	PD	ZIP TIES
CHECK DATE: 04/21/2026									
101356 MTI DISTRIBUTING INC #31380									
1511247-00		03/25/2026	042126	360497	350.94	04/25/2026	INV	PD	#238 SAND DRAG PARTS
CHECK DATE: 04/21/2026									
1511258-00		03/25/2026	042126	360497	304.70	04/25/2026	INV	PD	#248 FT DECK LIFT ARM
CHECK DATE: 04/21/2026									
1512760-00		04/07/2026	042126	360497	1,337.68	05/07/2026	INV	PD	LAWN MOWER BLADES
CHECK DATE: 04/21/2026									
1512760-01		04/09/2026	042126	360497	173.14	05/09/2026	INV	PD	LAWN MOWER PARTS
CHECK DATE: 04/21/2026									
					2,166.46				
101354 MTI DISTRIBUTING INC #700767									
1510824-00		03/20/2026	040726	360309	165.00	04/19/2026	INV	PD	GRAMITH MTI TRAINING
CHECK DATE: 04/07/2026									
106657 MUNICIPAL ASSET MANAGEMENT INC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
01132022M52		03/03/2026	040726	360310	4,983.31	04/13/2026	INV	PD	CCC FITNESS EQUIP LEASE P
CHECK DATE: 04/07/2026									
112128 MUSKA ELECTRIC CO									
23520-0021-4		01/20/2026	040726-2	360341	402,139.75	04/26/2026	INV	PD	Public Safety Facility-Co
CHECK DATE: 04/07/2026									
101365 STAR GROUP LLC									
4472/MAR2026		03/31/2026	041426	360356	7,266.77	04/10/2026	INV	PD	MAR PARTS & SUPPLIES
CHECK DATE: 04/14/2026									
112106 COMMITTEE FOR DEMOCRATIC REPUBLICAN INDEPENDENT									
Apr-26		04/03/2026	040726	360311	4.00	04/03/2026	INV	PD	Apr-26 D.R.I.V.E. Contrib
CHECK DATE: 04/07/2026									
101253 BUSINESS PLANNING CONCEPTS INC									
383600032026		02/01/2026	041426	360357	640.00	03/10/2026	INV	PD	MAR PERA LIFE PREMIUMS
CHECK DATE: 04/14/2026									
383600042026		03/01/2026	041426	360357	640.00	04/10/2026	INV	PD	APR PERA LIFE PREMIUMS
CHECK DATE: 04/14/2026									
					1,280.00				
112105 NEI ELECTRIC INC									
23520-0021-17		01/31/2026	040726-2	360342	38,688.27	04/26/2026	INV	PD	Public Safety Facility-El
CHECK DATE: 04/07/2026									
113446 NGUYEN, CHRISTIAN									
550300305-41030		04/06/2026	042126	360498	152.36	05/06/2026	INV	PD	CREDIT BALANCE REFUND-700
CHECK DATE: 04/21/2026									
113435 NORD, JAMES									
30057602-10015416		04/03/2026	042126	360499	129.16	05/03/2026	INV	PD	CREDIT BALANCE REFUND-307
CHECK DATE: 04/21/2026									
102654 NORTH AMERICAN SAFETY INC									
INV107580		03/26/2026	042126	360500	57.00	04/26/2026	INV	PD	SAFETY VESTS
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
INV107715		03/31/2026	042126	360500	354.00	04/30/2026	INV	PD	SAFETY GLOVES & GLASSES
CHECK DATE: 04/21/2026									
INV107754		04/02/2026	042126	360500	2,439.00	05/02/2026	INV	PD	SAFETY CONES
CHECK DATE: 04/21/2026									
INV107864		04/07/2026	042126	360500	1,048.59	05/07/2026	INV	PD	SAFETY HI VIS SHIRTS-CITY
CHECK DATE: 04/21/2026									
					3,898.59				
107396 NORTHERN POWER PRODUCTS INC									
351108		04/08/2026	042126	360501	2,410.39	05/08/2026	INV	PD	#710 ENGINE CYD HEAD/GASK
CHECK DATE: 04/21/2026									
101427 NORTHERN STAR COUNCIL									
152784		03/30/2026	042126	360502	100.00	04/30/2026	INV	PD	Explorer Post Renewal
CHECK DATE: 04/21/2026									
111958 O'CONNOR INC									
92350		04/06/2026	042126	360503	1,506.40	05/06/2026	INV	PD	JR GOLF HATS
CHECK DATE: 04/21/2026									
101454 OLSEN CHAIN AND CABLE CO INC									
740021		03/18/2026	042126	360504	180.12	04/18/2026	INV	PD	#724 SHACKLES-WIRE
CHECK DATE: 04/21/2026									
104831 PACIFIC RIM VENTURES LLC									
INV785802		02/25/2026	040726	360312	939.00	03/27/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
109623 PER MAR SECURITY AND RESEARCH CORPORATION									
3833844		04/06/2026	042126	360505	51.77	04/26/2026	INV	PD	KEYS FOR CLUBHOUSE
CHECK DATE: 04/21/2026									
113432 PETERSON, HOWARD									
40071500-10015171		04/03/2026	042126	360506	97.45	05/03/2026	INV	PD	CREDIT BALANCE REFUND-115
CHECK DATE: 04/21/2026									
113451 PIN HUNTERS GOLF LLC									

City of Chaska

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INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
1615		03/31/2026	042126	360507	2,520.00	04/30/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
101530 PING INC									
2026100133491		03/17/2026	042126	360508	183.35	05/18/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
2026100133493		03/17/2026	042126	360508	1,611.05	05/18/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
2026100139170		03/19/2026	042126	360508	53.44	05/18/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
2026100140853		03/20/2026	042126	360508	183.35	05/19/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
2026100164245		03/31/2026	042126	360508	509.44	06/01/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					2,540.63				
106085 N&M ENTERPRISES INC									
INV986985		09/16/2025	042126	360509	1,877.39	04/06/2026	INV	PD	GARBAGE BAGS
CHECK DATE: 04/21/2026									
101557 POWER SYSTEM ENGINEERING INC									
9063347		04/07/2026	042126	360510	1,254.00	05/07/2026	INV	PD	GENERAL ENGINEERING FOR M
CHECK DATE: 04/21/2026									
9063418		04/07/2026	042126	360510	1,060.00	05/07/2026	INV	PD	AMI NEGOTIATIONS FOR MARC
CHECK DATE: 04/21/2026									
9063527		04/08/2026	042126	360510	10,612.50	05/08/2026	INV	PD	WO# 15687 MRS 115 BRKER A
CHECK DATE: 04/21/2026									
9063528		04/08/2026	042126	360510	773.75	05/08/2026	INV	PD	WO# 20878 WEST CREEK SUBS
CHECK DATE: 04/21/2026									
9063634		04/09/2026	042126	360510	1,333.75	05/09/2026	INV	PD	GENERAL ENGINEERING FOR M
CHECK DATE: 04/21/2026									
					15,034.00				
101571 PREMIUM WATERS INC									
311403567		03/31/2026	042126	360512	65.00	05/01/2026	INV	PD	Water Cooler
CHECK DATE: 04/21/2026									
417080-03-26		03/31/2026	042126	360511	145.97	04/30/2026	INV	PD	CLUBHOUSE WATER

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
					210.97				
112131 PRINDLE PAINTING INC									
23520-0021-8		01/20/2026	040726-2	360343	23,294.00	04/26/2026	INV	PD	Public Safety Facility-Pa
CHECK DATE: 04/07/2026									
23520-0021-9		02/20/2026	042126	360513	13,719.44	05/15/2026	INV	PD	Public Safety Facility-Pa
CHECK DATE: 04/21/2026									
					37,013.44				
112428 PROGRESSIVE BUILDING SYSTEMS LTD									
23520-0021-9		02/20/2026	042126	360514	81,249.70	05/15/2026	INV	PD	Public Safety Facility-Ar
CHECK DATE: 04/21/2026									
101576 FORNER ENTERPRISES INC									
20257225		09/13/2025	042126	360515	602.30	10/13/2025	INV	PD	Touch a Truck 2025 Banner
CHECK DATE: 04/21/2026									
20267409		03/28/2026	042126	360515	702.00	04/28/2026	INV	PD	Facility Signage - FF&E
CHECK DATE: 04/21/2026									
					1,304.30				
111956 QUANTUM GRAPHICS INC									
238577		03/26/2026	042126	360516	1,809.59	04/26/2026	INV	PD	RODEO HATS
CHECK DATE: 04/21/2026									
112132 QUICKWAY RIGGING & TRANSFER INC									
23520-0021-2		01/16/2026	040726-2	360344	7,438.50	04/26/2026	INV	PD	Public Safety Facility-Sp
CHECK DATE: 04/07/2026									
107855 STAPLES INC									
48234337		03/19/2026	040726	360314	87.98	04/18/2026	INV	PD	COPY PAPER
CHECK DATE: 04/07/2026									
48235871-1		03/19/2026	040726	360313	23.36	04/18/2026	INV	PD	Laminating Pouches for Wo
CHECK DATE: 04/07/2026									
48235871-2		03/19/2026	040726	360313	74.67	04/18/2026	INV	PD	Clingwrap, bowls and pape
CHECK DATE: 04/07/2026									
48250936		03/20/2026	042126	360518	12.40	04/20/2026	INV	PD	TISSUE
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
48287849		03/24/2026	042126	360518	60.29	04/23/2026	INV	PD	FORKS
CHECK DATE: 04/21/2026									
48305494		03/25/2026	042126	360517	168.72	04/24/2026	INV	PD	Copy Paper for the workro
CHECK DATE: 04/21/2026									
48323197		03/26/2026	042126	360517	165.88	04/25/2026	INV	PD	Supplies for breakroom at
CHECK DATE: 04/21/2026									
48323203		03/26/2026	042126	360517	31.44	04/25/2026	INV	PD	Image Holders for staff a
CHECK DATE: 04/21/2026									
48356853		03/30/2026	042126	360517	14.03	04/29/2026	INV	PD	Napkins for the Breakroom
CHECK DATE: 04/21/2026									
48373221-1		03/31/2026	042126	360517	23.87	04/30/2026	INV	PD	Avery Labels for the work
CHECK DATE: 04/21/2026									
48373221-2		03/31/2026	042126	360517	27.89	04/30/2026	INV	PD	Dixie Coffee Cups with li
CHECK DATE: 04/21/2026									
48410558		04/02/2026	042126	360517	27.18	05/02/2026	INV	PD	A-Z tabs for election boo
CHECK DATE: 04/21/2026									
48411539		04/02/2026	042126	360517	25.49	05/02/2026	INV	PD	Hanging green file folder
CHECK DATE: 04/21/2026									
48439670		04/06/2026	042126	360517	25.49	05/06/2026	INV	PD	Hanging file folders for
CHECK DATE: 04/21/2026									
48470830		04/08/2026	042126	360517	96.84	05/08/2026	INV	PD	Report Covers for Lisa Ne
CHECK DATE: 04/21/2026									
48510465		04/10/2026	042126	360517	14.34	05/10/2026	INV	PD	Shoulder Rest for phone f
CHECK DATE: 04/21/2026									
48517690		04/11/2026	042126	360517	50.14	05/11/2026	INV	PD	Guide top tabs for UB
CHECK DATE: 04/21/2026									
					930.01				
112914 STZR HOLDINGS LLC									
0092846-IN		03/30/2026	042126	360519	45.00	04/30/2026	INV	PD	Zamboni Blade Sharpening
CHECK DATE: 04/21/2026									
0092913-IN		04/10/2026	042126	360519	45.00	05/10/2026	INV	PD	Zamboni Blade Sharpening
CHECK DATE: 04/21/2026									
					90.00				
101616 RDO EQUIPMENT COMPANY									
P4492170		04/10/2026	042126	360520	212.66	05/10/2026	INV	PD	#710 SAFE OP DECALS

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
111983 REC-TECH SALES & SERVICE COMPANY									
7536		04/06/2026	042126	360521	1,698.77	05/06/2026	INV	PD	PLOW PARTS
CHECK DATE: 04/21/2026									
7619		04/06/2026	042126	360521	171.39	05/06/2026	INV	PD	#108 WIRE HARNESS PLOWSID
CHECK DATE: 04/21/2026									
					1,870.16				
101631 REINDERS INC									
1004811-00		10/29/2025	042126	360522	-9,240.56	12/31/2025	CRM	PD	CHEMREBATE-EARLY ORDER PR
CHECK DATE: 04/21/2026									
1006329-00		11/25/2025	042126	360522	-296.03	12/19/2025	CRM	PD	CHEMREBATE-GREENTRUST 365
CHECK DATE: 04/21/2026									
3413647-00		03/23/2026	042126	360522	10,115.87	04/22/2026	INV	PD	FERTILIZER & CHEMICALS
CHECK DATE: 04/21/2026									
3413652-00		03/25/2026	042126	360522	14,013.14	04/24/2026	INV	PD	FERTILIZER
CHECK DATE: 04/21/2026									
3413691-00		03/23/2026	042126	360522	15,722.40	04/22/2026	INV	PD	FERTILIZER
CHECK DATE: 04/21/2026									
3413692-00		03/23/2026	042126	360522	18,646.86	04/22/2026	INV	PD	FERTILIZER & CHEMICAL
CHECK DATE: 04/21/2026									
3415274-00		04/02/2026	042126	360522	1,600.59	05/02/2026	INV	PD	COURSE ACCESSORIES
CHECK DATE: 04/21/2026									
3415321-00		03/24/2026	042126	360522	141.33	04/23/2026	INV	PD	ANTI-FOAM
CHECK DATE: 04/21/2026									
					50,703.60				
109193 RJM CONSTRUCTION LLC									
2352002121		01/31/2026	040726-2	360345	34,477.19	04/26/2026	INV	PD	Chaska Public Safety Faci
CHECK DATE: 04/07/2026									
2352002122		02/28/2026	042126	360523	11,492.40	05/15/2026	INV	PD	Chaska Public Safety Faci
CHECK DATE: 04/21/2026									
					45,969.59				
101669 ROBERT HALF INC									
66031009		03/23/2026	041626	360362	2,535.00	04/22/2026	INV	PD	PAYROLL TEMP-BARTELS-W/E
CHECK DATE: 04/16/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
66055048		03/30/2026	041626	360362	5,200.00	04/29/2026	INV	PD	PAYROLL TEMP-BARTELS-W/E
CHECK DATE: 04/16/2026									
66079242		04/06/2026	041626	360362	5,200.00	05/05/2026	INV	PD	PAYROLL TEMP-BARTELS-W/E
CHECK DATE: 04/16/2026									
66112646		04/14/2026	041626	360362	5,200.00	05/14/2026	INV	PD	PAYROLL TEMP-BARTELS-W/E
CHECK DATE: 04/16/2026									
					18,135.00				
101673 ROCHESTER MIDLAND CORP									
INV00567979		04/05/2026	042126	360524	76.54	05/05/2026	INV	PD	FIREMANS PARK
CHECK DATE: 04/21/2026									
113425 ROJAS DELGADO, JHONNY									
173201920-41218		03/30/2026	042126	360525	134.15	04/30/2026	INV	PD	CREDIT BALANCE REFUND-300
CHECK DATE: 04/21/2026									
101703 SALVATION ARMY									
MARCH/26 HS		03/31/2026	042126	360526	123.42	04/30/2026	INV	PD	MAR HEAT SHARE CONTRIBUTI
CHECK DATE: 04/21/2026									
113297 SENIOR COMMUNITY SERVICES									
30244		03/23/2026	042126	360527	450.00	04/30/2026	INV	PD	Artificial Intelligence L
CHECK DATE: 04/21/2026									
107602 SHAKOPEE MDEWAKANTON SIOUX COMMUNITY (SMSC)									
4027		03/31/2026	042126	360528	443.45	04/30/2026	INV	PD	SPRING PARK CLEANUP
CHECK DATE: 04/21/2026									
104827 ROHN INDUSTRIES									
0068173		03/16/2026	040726	360315	54.45	04/16/2026	INV	PD	Service Security Consoles
CHECK DATE: 04/07/2026									
101789 HYDES GROUP INC									
23520-0021-2		02/18/2026	042126	360529	27,622.19	05/15/2026	INV	PD	Public Safety Facility-Si
CHECK DATE: 04/21/2026									
101803 SM HENTGES & SONS INC									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
SP1008-87-27		11/25/2025	040726	360316	36,872.21	04/12/2026	INV	PD	TH 41/CSAH 61 IMPROVEMENT
CHECK DATE: 04/07/2026									
113334 SMITH, STEVEN J									
70186623-10014165-2		04/03/2026	042126	360530	82.31	05/03/2026	INV	PD	CREDIT BALANCE REFUND-132
CHECK DATE: 04/21/2026									
113447 SMOLINSKI, JEFFREY									
610002320-10002158		04/06/2026	042126	360531	71.62	05/06/2026	INV	PD	CREDIT BALANCE REFUND-367
CHECK DATE: 04/21/2026									
101816 SONUS INTERIORS INC									
23520-0021-2 12-A		01/19/2026	040726-2	360346	26,082.25	04/26/2026	INV	PD	Public Safety Facility-Wi
CHECK DATE: 04/07/2026									
112103 STANDARD IRON AND WIRE WORKS LLC									
23520-0021-21		01/19/2026	040726-2	360347	9,500.00	04/26/2026	INV	PD	Public Safety Facility-St
CHECK DATE: 04/07/2026									
101850 STANTEC CONSULTING SERVICES INC									
2539273		03/23/2026	042126	360532	1,332.68	04/24/2026	INV	PD	WELL NO 8 REHAB
CHECK DATE: 04/21/2026									
2539274		03/23/2026	042126	360532	304.50	04/24/2026	INV	PD	WELL 10 CONSTRUCTION SERV
CHECK DATE: 04/21/2026									
2539275		03/23/2026	042126	360532	693.50	04/24/2026	INV	PD	WTP SANITARY SEWER EXTENS
CHECK DATE: 04/21/2026									
2539276		03/23/2026	042126	360532	6,349.97	04/24/2026	INV	PD	C2 RAVINE RESTORATION
CHECK DATE: 04/21/2026									
2539277		03/23/2026	042126	360532	1,384.75	04/24/2026	INV	PD	MCKNIGHT WETLAND BANK SER
CHECK DATE: 04/21/2026									
2539278-1		03/23/2026	042126	360532	2,481.50	04/24/2026	INV	PD	WELLS 11 & 12
CHECK DATE: 04/21/2026									
2539278-2		03/23/2026	042126	360532	3,240.50	04/24/2026	INV	PD	PUMPING FACILITY
CHECK DATE: 04/21/2026									
2539278-3		03/23/2026	042126	360532	804.90	04/24/2026	INV	PD	VICTORIA DR UTILITY IMPRO
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
2539279		03/23/2026	042126	360532	13,197.26	04/24/2026	INV	PD	COUNTY RD 61 UTILITY IMPR
CHECK DATE: 04/21/2026									
2539280		03/23/2026	042126	360532	712.00	04/24/2026	INV	PD	GIS SERVICES
CHECK DATE: 04/21/2026									
2539281		03/23/2026	042126	360532	7,430.75	04/24/2026	INV	PD	SW COMMUNITY PARK
CHECK DATE: 04/21/2026									
2539283		03/23/2026	042126	360532	7,734.00	04/24/2026	INV	PD	SE COLLECTOR
CHECK DATE: 04/21/2026									
2539286		03/23/2026	042126	360532	45.75	04/24/2026	INV	PD	STORMWATER REVIEW-HIGHPOI
CHECK DATE: 04/21/2026									
2539288		03/23/2026	042126	360532	1,129.75	04/24/2026	INV	PD	STORMWATER REVIEW-FULTONW
CHECK DATE: 04/21/2026									
2539289		03/23/2026	042126	360532	1,052.25	04/24/2026	INV	PD	STORMWATER REVIEW-CHEVALL
CHECK DATE: 04/21/2026									
2539290		03/23/2026	042126	360532	366.00	04/24/2026	INV	PD	STORMWATER REVIEW-MSB
CHECK DATE: 04/21/2026									
2539291		03/23/2026	042126	360532	1,189.50	04/24/2026	INV	PD	STORWATER REVIEW-PEAVEY B
CHECK DATE: 04/21/2026									
2539293		03/23/2026	042126	360532	1,442.00	04/24/2026	INV	PD	SAVANNA WAY S UTILITY IMP
CHECK DATE: 04/21/2026									
2539294		03/23/2026	042126	360532	19,376.00	04/24/2026	INV	PD	CITY HALL PLAZA PROJECT
CHECK DATE: 04/21/2026									
2539295		03/23/2026	042126	360532	2,378.00	04/24/2026	INV	PD	HYDROCAD MODEL UPDATE, FL
CHECK DATE: 04/21/2026									
2539296		03/23/2026	042126	360532	25,894.75	04/24/2026	INV	PD	CREEK RD INDUSTRIAL ST &
CHECK DATE: 04/21/2026									
2539297		03/23/2026	042126	360532	34,095.00	04/24/2026	INV	PD	2026 DT RECONSTRUCTION PR
CHECK DATE: 04/21/2026									
2539298		03/23/2026	042126	360532	1,880.50	04/24/2026	INV	PD	OUTLET D IMPROVEMENTS
CHECK DATE: 04/21/2026									
2539299		03/23/2026	042126	360532	5,224.50	04/24/2026	INV	PD	GENERAL ENGINEERING
CHECK DATE: 04/21/2026									
					139,740.31				
113427 STEINHAGEN, CLINT									
162504106-41857		03/30/2026	042126	360533	74.16	04/30/2026	INV	PD	CREDIT BALANCE REFUND-111
CHECK DATE: 04/21/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
101874 STEPP MANUFACTURING CO INC									
068130		03/31/2026	042126	360534	720.45	04/30/2026	INV	PD	#132 TACK HEAT CONTROL
CHECK DATE: 04/21/2026									
101887 ARMOR INC									
69984		03/31/2026	042126	360535	2,283.24	04/30/2026	INV	PD	FLAG POLE LIGHTS
CHECK DATE: 04/21/2026									
69986		03/31/2026	042126	360535	231.08	04/30/2026	INV	PD	RANGE HOOD SIDE PANEL
CHECK DATE: 04/21/2026									
					2,514.32				
113430 STRATA TRUST CO									
91269918-33615		03/30/2026	042126	360536	287.11	04/30/2026	INV	PD	CREDIT BALANCE REFUND-376
CHECK DATE: 04/21/2026									
101888 STREICHER'S INC									
I1818637		03/30/2026	042126	360537	45.97	04/30/2026	INV	PD	Hentges Uniform - Vest Re
CHECK DATE: 04/21/2026									
101892 STUART C IRBY CO									
SO14376835.001	260050	03/25/2026	042126	360538	23,500.00	05/02/2026	INV	PD	1 DURHAM PRIMARY METER CA
CHECK DATE: 04/21/2026									
SO14532755.001	260057	04/02/2026	042126	360538	1,686.84	05/02/2026	INV	PD	2 PED BELOW GRND 17X30X18
CHECK DATE: 04/21/2026									
SO14533713.001	260056	04/07/2026	042126	360538	1,845.00	05/07/2026	INV	PD	9 FUSES 6 & 12 AMP
CHECK DATE: 04/21/2026									
SO14535689.001	260054	04/01/2026	042126	360538	8,315.92	05/01/2026	INV	PD	16 16S METERS
CHECK DATE: 04/21/2026									
SO14535689.002	260052	04/01/2026	042126	360538	1,563.11	05/07/2026	INV	PD	AMI 2SE & 16S METERS
CHECK DATE: 04/21/2026									
SO14535689.003	260053	04/01/2026	042126	360538	166.73	05/01/2026	INV	PD	AMI VOLT METER BATTERIES
CHECK DATE: 04/21/2026									
					37,077.60				
103677 SUN LIFE ASSURANCE COMPANY OF CANADA									
237741/MAR2026		03/01/2026	040226	360279	6,700.04	03/31/2026	INV	PD	MAR EMP LIFE INS PREM
CHECK DATE: 04/02/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
101907 SCHWAB VOLLHABER LUBRATT SERVICE CORP									
PS-INV125028		03/20/2026	040726	360317	371.30	04/19/2026	INV	PD	IGNITION MODULE FOR DEH #
CHECK DATE: 04/07/2026									
106847 SWANNIES GOLF APPAREL CO									
696169		03/18/2026	040726	360318	7,664.00	04/17/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
101925 TALLMAN EQUIPMENT CO INC									
3466584		03/11/2026	040726	360319	591.24	04/10/2026	INV	PD	TOOLS FOR RODEO
CHECK DATE: 04/07/2026									
101932 TAYLOR MADE GOLF CO INC									
38965944		03/16/2026	042126	360539	419.40	05/15/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
38976239		03/19/2026	040726	360320	142.87	04/18/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
38976312		03/19/2026	042126	360539	2,267.36	10/01/2026	INV	PD	DEMO/RENTAL
CHECK DATE: 04/21/2026									
38976316		03/19/2026	040726	360320	142.87	04/18/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
38976377		03/19/2026	042126	360539	163.42	10/01/2026	INV	PD	DEMO/RENTAL
CHECK DATE: 04/21/2026									
38982799		03/22/2026	042126	360539	173.85	10/01/2026	INV	PD	DEMO/RENTAL
CHECK DATE: 04/21/2026									
38985572		03/22/2026	042126	360539	142.87	04/21/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
38985640		03/23/2026	042126	360539	302.85	10/01/2026	INV	PD	DEMO/RENTAL
CHECK DATE: 04/21/2026									
38985845		03/23/2026	042126	360539	142.87	04/22/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
38987891		03/24/2026	042126	360539	102.50	04/23/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39002047		03/28/2026	042126	360539	236.35	04/27/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
39005916		03/30/2026	042126	360539	142.87	04/29/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39024943		04/01/2026	042126	360539	285.73	05/01/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39042822		04/09/2026	042126	360539	266.23	06/08/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39042971		04/09/2026	042126	360539	358.98	06/08/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39045099		04/10/2026	042126	360539	1,241.54	06/09/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
39053229		04/13/2026	042126	360539	999.00	07/12/2026	INV	PD	DEMO/RENTALS
CHECK DATE: 04/21/2026									
					7,531.56				
112640 TEAM NEXBELT OPERATING INC									
INV108279		03/09/2026	040726	360321	1,005.59	04/08/2026	INV	PD	RESALE
CHECK DATE: 04/07/2026									
111672 STANLEY TEKIELA									
152745		03/23/2026	042126	360540	250.00	04/26/2026	INV	PD	Presentation -Lodge- Bird
CHECK DATE: 04/21/2026									
112547 TEREX GLOBAL GMBH									
7641987		03/26/2026	042126	360541	8,366.38	04/26/2026	INV	PD	#703 ARIEL BOOM REPAIR
CHECK DATE: 04/21/2026									
113233 LAUREN FAHEY									
1383		03/19/2026	040726	360322	344.00	04/18/2026	INV	PD	BLDG INSP UNIFORM FOR BEN
CHECK DATE: 04/07/2026									
101966 TK ELEVATOR CORPORATION									
3009377976		04/01/2026	042126	360542	1,245.78	05/01/2026	INV	PD	Q2 CCC Elevator Service C
CHECK DATE: 04/21/2026									
112486 TOKACH, KORA									
153415		03/12/2026	042126	360543	15.23	05/02/2026	INV	PD	Mileage-NorthStar Payroll
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
110934 THE TORO COMPANY									
413067604		04/01/2026	042126	360544	220.00	05/01/2026	INV	PD	APR LOOP IRRIGATION NSN
CHECK DATE: 04/21/2026									
111758 TOUCHPOINT LOGIC LLC									
5501		03/30/2026	042126	360545	1,311.00	04/30/2026	INV	PD	SDI TO HDMI CONVERTERS AS
CHECK DATE: 04/21/2026									
101989 TOWN & COUNTRY GLASS INC									
25914		03/19/2026	040726	360323	471.69	04/19/2026	INV	PD	Lobby glass going into ri
CHECK DATE: 04/07/2026									
101994 TRAVISMATHEW LLC									
93336264		02/20/2026	042126	360546	955.52	03/22/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
93386393		03/27/2026	042126	360546	2,907.42	04/26/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
93389106		03/30/2026	042126	360546	1,366.62	04/29/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
					5,229.56				
102010 TRI-COUNTY LAW ENFORCEMENT ASSOCIATION INC									
153370		04/01/2026	042126	360547	90.00	05/01/2026	INV	PD	Annual Dues
CHECK DATE: 04/21/2026									
102027 TWIN CITIES & WESTERN RAILROAD CO									
M900949-IN		03/17/2026	042126	360548	425.21	04/30/2026	INV	PD	UG LINE CROSSING PIONEER
CHECK DATE: 04/21/2026									
106577 TWIN CITY HARDWARE COMPANY									
23520-0021-14		02/23/2026	042126	360550	1,092.26	05/15/2026	INV	PD	Public Safety Facility-Do
CHECK DATE: 04/21/2026									
PSI2387095		03/24/2026	042126	360549	87.40	04/24/2026	INV	PD	ADA ACCESS BUTTON
CHECK DATE: 04/21/2026									
					1,179.66				
102028 TWIN CITY WATER CLINIC INC									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
24644		04/06/2026	042126	360551	390.00	05/06/2026	INV	PD	MARCH SAMPLES
CHECK DATE: 04/21/2026									
110053 TX CHILD SUPPORT SDU									
PR0040326-0012725283		04/03/2026	040726	360324	115.38	04/03/2026	INV	PD	040326 Payroll - Child Su
CHECK DATE: 04/07/2026									
113443 TYMOFIEIEV, VIKTOR									
209002101-39590		04/06/2026	042126	360552	123.18	05/06/2026	INV	PD	CREDIT BALANCE REFUND-407
CHECK DATE: 04/21/2026									
102038 ULTIMATE SAFETY CONCEPTS INC									
221804		03/25/2026	042126	360553	5,582.00	04/24/2026	INV	PD	Hose Washer for New Stati
CHECK DATE: 04/21/2026									
221852		03/26/2026	042126	360553	2,483.32	04/25/2026	INV	PD	New SCBA Masks
CHECK DATE: 04/21/2026									
					8,065.32				
113418 UNDESSER, BILLIE									
91200801-10012984		03/30/2026	042126	360554	5.64	04/30/2026	INV	PD	CREDIT BALANCE REFUND-225
CHECK DATE: 04/21/2026									
102052 UNIQUE PAVING MATERIALS CORP									
93540		03/23/2026	042126	360555	259.35	04/23/2026	INV	PD	COLD PATCH
CHECK DATE: 04/21/2026									
101555 UNITED STATES POSTAL SERVICE									
153624		03/20/2026	042126	360556	370.00	05/14/2026	INV	PD	2026 Marketing Mail Permi
CHECK DATE: 04/21/2026									
102064 US BANK									
8053589		01/23/2026	040226	360280	1,500.00	03/30/2026	INV	PD	2025B TRUSTEE FEES
CHECK DATE: 04/02/2026									
8122082		03/25/2026	042126	360557	1,900.00	04/24/2026	INV	PD	2020F EDA TRUSTEE FEES
CHECK DATE: 04/21/2026									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
					3,400.00				
104522 US FOODS INC									
3048691		03/27/2026	042126	360558	399.24	04/26/2026	INV	PD	TOWELS, TP, SOAP
CHECK DATE: 04/21/2026									
5978533		03/19/2026	040726	360325	225.51	04/18/2026	INV	PD	FEB DISH MACHINE RENTAL
CHECK DATE: 04/07/2026									
					624.75				
110799 VERIZON CONNECT FLEET USA LLC									
306000082200		04/01/2026	042126	360559	279.20	05/01/2026	INV	PD	Data Processing - GPS
CHECK DATE: 04/21/2026									
112759 VICTORIA REPAIR-MFG INC									
11747		03/31/2026	042126	360560	202.00	04/30/2026	INV	PD	TRAINING TOWER OVERHEAD D
CHECK DATE: 04/21/2026									
102115 VIKING AUTOMATIC SPRINKLER CO									
1025-F476511		03/23/2026	042126	360561	6,900.00	04/22/2026	INV	PD	Repair Wet Sys Control Va
CHECK DATE: 04/21/2026									
1025-F478261		04/02/2026	042126	360561	4,515.00	05/02/2026	INV	PD	FIRE-MONITORING/ALARM CON
CHECK DATE: 04/21/2026									
					11,415.00				
113454 VINEYARD VINES LLC									
1655528		04/03/2026	042126	360562	3,248.50	05/03/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
102227 ONVOY LLC									
383007009486260401		04/01/2026	041426	360358	812.00	04/25/2026	INV	PD	APR CITY HALL ETHERNET
CHECK DATE: 04/14/2026									
110463 VW GOLF INC									
99724		03/26/2026	042126	360563	88.83	04/25/2026	INV	PD	RESALE
CHECK DATE: 04/21/2026									
105146 ECM PUBLISHERS INC									
1092719		03/26/2026	042126	360564	73.80	04/25/2026	INV	PD	PRELIM-THE INN

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
CHECK DATE: 04/21/2026									
1092720		03/26/2026	042126	360564	77.90	04/25/2026	INV	PD	PRELIM-BIG WOODS BUSINESS
CHECK DATE: 04/21/2026									
					151.70				
102133 WAGNER PRESS & GRAPHICS									
39232		03/18/2026	040726	360326	5,150.00	04/17/2026	INV	PD	Design & Printing- Spring
CHECK DATE: 04/07/2026									
39258		03/29/2026	042126	360565	47.00	04/28/2026	INV	PD	Business Cards - Torres
CHECK DATE: 04/21/2026									
39268		03/29/2026	042126	360565	146.25	04/28/2026	INV	PD	Postcards-Proposed Dev-Bi
CHECK DATE: 04/21/2026									
39276		03/29/2026	042126	360565	120.00	04/28/2026	INV	PD	Note Cards with A-2 Envel
CHECK DATE: 04/21/2026									
					5,463.25				
113424 WALLER, DAVID									
670102800-41149		03/30/2026	042126	360566	133.29	04/30/2026	INV	PD	CREDIT BALANCE REFUND-934
CHECK DATE: 04/21/2026									
110944 WECKMAN, LANCE									
153422		03/05/2026	042126	360567	100.00	05/02/2026	INV	PD	Class SD Exam and Cert Re
CHECK DATE: 04/21/2026									
112104 WEIDNER PLUMBING & HEATING CO									
23520-0021-20		01/19/2026	040726-2	360348	7,706.40	04/26/2026	INV	PD	Public Safety Facility-HV
CHECK DATE: 04/07/2026									
102174 WHEELER HARDWARE COMPANY									
SPI167581		04/02/2026	042126	360568	60.38	05/02/2026	INV	PD	LOOP MAINT BATHROOM LOCK
CHECK DATE: 04/21/2026									
113442 WHITAKER, RONYELL									
80205969-31453		04/06/2026	042126	360569	16.37	05/06/2026	INV	PD	CREDIT BALANCE REFUND-800
CHECK DATE: 04/21/2026									
113441 WOIWOR, JAMES M									

City of Chaska

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
194509504-35538		04/06/2026	042126	360570	17.81	05/06/2026	INV	PD	CREDIT BALANCE REFUND-110
CHECK DATE: 04/21/2026									
113436 WOLFF, DONNA									
10013174-10015918		04/03/2026	042126	360571	50.74	05/03/2026	INV	PD	CREDIT BALANCE REFUND-110
CHECK DATE: 04/21/2026									
112163 YALE MECHANICAL LLC									
23520-0021-7		01/22/2026	040726-2	360349	7,566.45	04/26/2026	INV	PD	Public Safety Facility-Se
CHECK DATE: 04/07/2026									
546 INVOICES					3,344,213.11				

** END OF REPORT - Generated by Michelle Robbin **

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
100385 CHASKA FIRE DEPT RELIEF ASSN									
2026 SUPP		04/14/2026	041426-2	5213	1,000.00	04/14/2026	DIR	PD	Remit 3/13/26 Supplementa
CHECK DATE: 04/14/2026									
100927 INTERNAL REVENUE SERVICE									
153274		03/30/2026	WIRE_001	5199	13.65	03/31/2026	DIR	PD	03/30/26 Payroll-SS Taxes
CHECK DATE: 03/31/2026									
153308		04/03/2026	040326	5202	213,547.24	04/03/2026	DIR	PD	040326 Payroll - SS, Medi
CHECK DATE: 04/03/2026									
					213,560.89				
101343 MINNESOTA DEPT OF REVENUE-PAYROLL WIRES									
153309		04/03/2026	040326	5203	43,531.72	04/03/2026	DIR	PD	040326 Payroll - MN State
CHECK DATE: 04/03/2026									
100889 INTERNATIONAL CITY MANAGEMENT ASSN RETIREMENT CORP									
153307		04/03/2026	040326	5201	6,208.38	04/03/2026	DIR	PD	040326 Payroll - 457b & R
CHECK DATE: 04/03/2026									
101376 NATIONWIDE RETIREMENT SOLUTIONS(USCM)									
153310		04/03/2026	040626-1	5208	19,181.59	04/03/2026	DIR	PD	040326 Payroll - 457 Con
CHECK DATE: 04/06/2026									
106955 NATIONWIDE RETIREMENT SOLUTIONS(USCM)									
153313		04/03/2026	040626-1	5209	10,050.31	04/03/2026	DIR	PD	040326 Payroll - Roth Con
CHECK DATE: 04/06/2026									
104668 OPTUM BANK INC									
153312		04/03/2026	040326	5205	29,291.68	04/03/2026	DIR	PD	040326 Payroll - HSA Cont
CHECK DATE: 04/03/2026									
101498 PCARD									
2026/0312-PC		03/12/2026	031726-1	5193	106,194.81	03/17/2026	DIR	PD	MAR 2026 PCARD PURCHASES
CHECK DATE: 03/17/2026									
109689 PLANSOURCE BENEFITS ADMINISTRATION INC									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
APR-26		03/24/2026	040126-1	5219	6,450.83	04/01/2026	DIR	PD	APR EMP INS PREM-LTD/CI/A
CHECK DATE: 04/01/2026									
FEB-26 RETROS		01/24/2026	040126-1	5200	43.76	04/01/2026	DIR	PD	FEB RETRO INS PREM-LTD/CI
CHECK DATE: 04/01/2026									
					6,494.59				
101506 PUBLIC EMPLOYEES RETIREMENT ASSOCIATION									
153311		04/03/2026	040326	5204	150,803.89	04/03/2026	DIR	PD	040326 Payroll - PERA Con
CHECK DATE: 04/03/2026									
102066 US BANK									
2026/04/01 DS-5979		03/30/2026	033026	5196	280,542.50	03/30/2026	DIR	PD	4/1 DS Pmt-2020F/2021A-US
CHECK DATE: 03/30/2026									
3151925		03/30/2026	033026	5197	75,987.50	03/30/2026	DIR	PD	4/1 DS Pmt-2017A-USBank
CHECK DATE: 03/30/2026									
					356,530.00				
112849 VOYA INSTITUTIONAL TRUST COMPANY									
153314		04/03/2026	040326	5206	10,353.18	04/03/2026	DIR	PD	040326 Payroll - HCSP Con
CHECK DATE: 04/03/2026									
112884 VOYA INSTITUTIONAL TRUST COMPANY									
153315		04/03/2026	040326	5207	6,712.96	04/03/2026	DIR	PD	040326 Payroll - MNDCP Co
CHECK DATE: 04/03/2026									
110788 WEX HEALTH INC									
0002331755-IN		02/28/2026	032626-2	5194	382.00	03/26/2026	DIR	PD	FEB VEBA/FSA PARTICIPANT
CHECK DATE: 03/26/2026									
20260326-FSA		03/26/2026	032726	5195	527.35	03/27/2026	DIR	PD	3/27/26 FSA Reimb-Depende
CHECK DATE: 03/27/2026									
20260327-FSA		03/27/2026	033026	5198	1,250.00	03/30/2026	DIR	PD	3/30/26 FSA Reimb-Depende
CHECK DATE: 03/30/2026									
20260403-FSA		04/03/2026	040626-2	5210	1,875.00	04/06/2026	DIR	PD	4/6/26 FSA Reimb-Dependen
CHECK DATE: 04/06/2026									
20260406-FSA		04/06/2026	040826	5211	927.36	04/08/2026	DIR	PD	4/8/26 FSA Reimb-Dependen
CHECK DATE: 04/08/2026									
20260408-FSA		04/08/2026	040926	5212	1,230.00	04/09/2026	DIR	PD	4/9/26 FSA Reimb-Dependen
CHECK DATE: 04/09/2026									

VENDOR INVOICE LIST

INVOICE	P.O.	INV DATE	CHECK RUN	CHECK #	INVOICE NET	DUE DATE	TYPE	STS	INVOICE DESCRIPTION
20260410-FSA CHECK DATE: 04/14/2026		04/10/2026	041426-2	5215	8.01	04/14/2026	DIR	PD	4/14/26 FSA Reimb-Healthc
20260413-FSA CHECK DATE: 04/14/2026		04/13/2026	041426-2	5214	915.72	04/14/2026	DIR	PD	4/14/26 FSA Reimb-Healthc
20260413-FSA-2 CHECK DATE: 04/15/2026		04/13/2026	041526	5217	3.47	04/15/2026	DIR	PD	4/15/26 FSA Reimb-Healthc
20260414-FSA CHECK DATE: 04/15/2026		04/14/2026	041526	5216	410.15	04/15/2026	DIR	PD	4/15/26 FSA Reimb-Depende
20260414-FSA-2 CHECK DATE: 04/16/2026		04/14/2026	041626-2	5218	685.25	04/16/2026	DIR	PD	4/16/26 FSA Reimb-Healthc
					8,214.31				
		27 INVOICES			968,128.31				

** END OF REPORT - Generated by Michelle Robbin **

Biweekly Report

April 20, 2026

By:

Matt Podhradsky

COUNCIL MEETING/WORK SESSION SCHEDULE

Below is a list of the upcoming Council Meetings and Work Sessions to plan for:

April 20th:

On Monday night we will be having a work session prior to the Council meeting to take a final look at the City Hall Plaza remodeling plans and final cost estimates for the project. This Work Session will run from 5:45-7:00 pm in the Council Chambers. As we are wanting to release our consultants to complete the construction document work on this project as soon as possible so we are able to move forward with construction this summer, our hope is that we can show you the final plans that were refined based on your feedback from our last Work Session, and have the Council feel comfortable moving forward with having Staff and our Consultants finalize the plans. We expect that if we can reach this point at the meeting on Monday that we can have construction documents ready to go out for bid in June, with a contractor being chosen right around July 1st. This timeline will allow us to get much of the work completed this summer.

In the regular meeting, we only have one Planning Item coming out of the Planning Commission this month, which is consideration or the Preliminary Plans for "The Inn" project being proposed on Yellow Brick Road. Other than that, we will have a portion of our meeting closed to give our Attorney an opportunity to talk about pending arbitration we have with our former Utility Meter Company Mueller Systems as well as some other minor items.

May 4th and 18th:

We will have regular meetings of the Council on May 4th and 18th. At this time, we do not have any Work Sessions scheduled during the month of May, but I will let you know if those changes.

If you are unable to make it to either one of these meetings, please just let me know.

Public Safety Facility:

As you are aware, we have now had our Fire Department and Police Departments make the formal move to the Public Safety Facility. The Fire Department had their ceremonial "pushing of the Fire Truck" into the garage on Friday afternoon, with the first official shift running out of the PSF staring at 5 pm that night. The Police Department completed their move from City Hall up to the new building on Thursday and Friday of last week, with the first official day at the new building starting at 8 am on Monday.

I am happy to say that these transitions went smoothly thanks to the advanced preparation work that both departments did prior to occupying the building, with there only being small items to address as they started to utilize the new building. While both departments are now housed out of the new facility, they will still have several weeks of "unpacking" and setting up their new space as they try to fit that between their regular work duties. We also have all landscaping and punch list items to complete in the building which we expect will take most of the summer to get completely finished. Once it becomes clear when our facility will be fully ready, we will then be setting up an Open House for the public to see the facility.

It has been great to see how excited our Officers and Firefighters have been moving into this new space and to hear them talk about the functionality of the building that will help them with effectively executing their job going into the future. I know everyone is appreciative of the Council and community for investing in this space that truly will meet our needs as we become fully developed. Thank you!

If you have any questions about this, please let me know.

UPDATE ON MSB

With us now having completed accepting the construction bids for the project and moving forward to construction, Staff along with our Architect and Construction Manager RJM have been working to put together the construction schedule for the project so that we know how construction will move forward on the project and what we should expect as we move through the next 14 months. While initially we were running into issues with a backorder of the precast wall system for the building that could have complicated our schedule, we were able to work through that issue and get everything back to the schedule we set out in our bid documents. Based on that, we are scheduled to mobilize construction equipment to the Site the week of May 18th, with work scheduled to start shortly after. Based on the project management schedule that has been developed for this project, we are expecting that the building's wall systems will be erected this Spring, with work on the roof starting shortly afterwards. They will be attempting to try to enclose the building prior to any major winter weather events. The project is now scheduled to seek a certificate of occupancy for the building around November 1st of 2027, with us planning a move into the facility by January of 2028.

Throughout the project I will give you updates on where we are at in the project, and if anything changes for an expected occupancy date. If you have any questions, please let me know.

CITY SQUARE WEST TIF EXTENSION BILL

As I have shared with you before, one piece of legislation that we are seeking during this session is to extend the life of our Tax Increment District on the City Square West redevelopment site by 10 years. Extending this additional length of time, we feel could substantially help us close the gap in funding for that project and allow us to move forward with our developer to implement this project. We previously had this bill heard by the Senate Tax Committee and now are scheduled to testify in front of the House Tax Committee this upcoming Tuesday, April 21st at 10:15 am. All Tax Bills need to originate from the House to move forward and there have been some question of whether there would be a tax bill this year or not. We feel fortunate that we were included in this hearing and hope we can have the legislature give us authority to expand our TIF authority. If we were to be allowed to extend our district an

additional 10 years, we feel that we could potentially be able to move forward on this project without receiving additional Bonding dollars at the State. It is unusual for TIF District's to be extended beyond the typical 25 years prior to a project commencing, but we're hoping to demonstrate that we are trying to be responsible about not starting this project until we know it can work, and that we could avoid additional State dollars going into this project if we were to be given this authority for utilize local dollars.

If you have any questions about this, please let me know.

DOWNTOWN MASTER PLAN UPDATE

As we talked about during our budgeting process last fall, one of the items that we think needs getting updated is our Downtown Master Plan. Originally developed in 2012, the Downtown Master Plan has been a roadmap for us to know how to systematically reinvest into the downtown. The first Master Plan focused primarily on infrastructure projects, such as reconstructing all the Streets in downtown, creating attractive street scape, signing the downtown to be informative, redeveloping key sites and connecting the downtown to the Regional Bike Trail and through our Paseo network. This update on the plan will still have some infrastructure projects we need to work on and continue to identify redevelopment opportunities in downtown, but will also start getting into discussions about how we strengthen the social fabric in downtown and work on developing a culture that both businesses and residents/visitors want to be in.

Staff has started the process of working on updating the Downtown Master Plan, reengaging with Hoisington Koegler Group that was the group that put our original plan together. Our thought is that we should try to keep things consistent with this plan and work with a group that knows our downtown so well. Once we get a work plan put together on how to move forward, we will have a Work Session to kick off the work that is done and go through the process of naming people to serve on a Task Force to provide input into this process. This task force will be made not only individuals and businesses in the downtown but will also look to get the perspective from others through the rest of the community.

If you have any questions about this, do not hesitate to let me know.

Upcoming Activities

Saturday April 25th: 8 am at McKnight Park- Annual Tree Planting Event (Lions/Rotary/City)

Saturday May 2nd: Annual Christmas in May Event- 7:30 am at St. John's Church

Wednesday May 13: Taste of Chaska Event- 5-9 pm at Fireman's Park