THE CITY OF LAKE ELMO

STAFF REPORT

DATE: March 7, 2023
CONSENT

AGENDA ITEM: Request for Proposals for Purchase of City Land
TO: Mayor and Council
SUBMITTED BY: Kristina Handt, City Administrator

BACKGROUND:

In 2019 as part of the settlement of the City's lawsuit against 3M related to PFAS contamination and the impact on the city water system, the City received about 180 acres from 3M in lieu of $1.8 million. The 180 acres are located along Ideal Ave near the public works facility and extends both north and south of CSAH 14. The land is an asset of the city water fund since the lawsuit damages were in the city water fund.

The City Council's intention has been to sell the land for development. In 2019, the city received a grant from the Washington County Community Development Authority (CDA) to explore concepts for development of the land and what the cost would be to make it shovel ready. That study completed by HKGI and Focus engineering was shared with the Council in February and June 2020 at work sessions as well as the planning commission in 2020.

In 2020, the cities of Oakdale and Lake Elmo agreed to work together to bring sewer to the 180 acres from the lift station on Helmo Ave and Stillwater Blvd. Formal agreements were approved in 2021 and construction was underway in 2022. The City of Lake Elmo has completed the extension of the sewer main up Ideal Ave to approximately 31st St. (just south of the railroad tracks). The City of Oakdale is expected to have the lift station upgrade complete and operational by summer 2023. Approximately $700,000 of Lake Elmo's ARPA funds have be spent on this project in 2022.

The city issued a Request for Proposals (RFP) for the land south of CSAH 14 in 2021 and entered into a purchase agreement in June 2021, which was terminated in 2022. In 2021, the Met Council approved an amendment to the comprehensive plan to guide the land south of CSAH 14 to Business Park (77 acres). In April 2022, the city council adopted an Alternative Urban Areawide Review (AUAR) for the entire 180 acres. The Council also approved a comprehensive plan amendment for the northern portion of the property consistent with the preferred alternative which includes additional land for the public works facility to expand (4 acres), a park (8 acres), commercial along CSAH 14 (4.7 acres), low density residential (LDR) along the north of the parcel (14 acres) and the remaining area of the parcel as Business Park (72 acres). The Met Council approved this new guidance in January 2023.

The city has continued to receive numerous inquiries from individuals and organizations expressing interest in purchasing and/or developing some or all of the 180 acres. The next step in the process to sell and develop the land is to issue another RFP.

ISSUE BEFORE COUNCIL:

Should the City issue an RFP? Are there any changes Council would like to make to the RFP?

PROPOSAL DETAILS/ANALYSIS:

A draft RFP is included in your packet. It has been reviewed by the city attorney as well since the work session and updated accordingly.

Key parts of the proposal include not only the price but also how the applicant would develop the property, when it would be developed, what the increased tax value would be and the number of jobs created. Staff is suggesting a minimum purchase price of $125,000/acre based upon previous offers and to also set realistic expectations for proposers. Once the proposals are received, staff would review them for completeness and forward to the EDA for review and recommendation. Then a Council selection would be anticipated in late May or early June. Offers are required to be valid for 90 days from the submittal deadline in order to accommodate this schedule. Once a purchase agreement is signed, then the closing must occur within 180 days.

FISCAL IMPACT:
At an estimated 426 RECs (from 2020 study) for all 180 acres, there would be $1,704,000 each in WAC, SAC, and connection charges collected at development.

In addition, whatever sale price (minimally $9 million) is received for the property would be allocated to the water fund since the land is an asset of that fund. Legal fees and closing costs related to the sale would also come out of the water fund.

Overall, it is expected that the tax value increase combined with fees and sale price will exceed the costs associated with sale and sewer service. It is likely the water fund (and general fund through tax value increase) will benefit substantially. Since ARPA funds were used for the sewer extension, the sewer fund will see an increase from the SAC and connection fees without the offset of the cost of extending the main. Sewer fund expenses will increase with the city paying the City of Oakdale annually based upon usage. This increased expense will be partially offset by the sewer fees the City of Lake Elmo will collect from the new users on the property.

OPTIONS:
1) Approve the issuance of the RFP
2) Amend the RFP and then approve the issuance
3) Do not issue an RFP for the sale of the land at this time.

RECOMMENDATION:
If removed from the consent agenda:
"Motion to issue the Request for Proposals for the Sale of City Land."

ATTACHMENT:
- Request for Proposals for Purchase of City Land
- Phase 1 Environmental Site Assessment, May 2019
- AUAR

REQUEST FOR PROPOSALS (RFP)
FOR

THE PURCHASE OF REAL PROPERTY OWNED BY THE CITY OF LAKE ELMO

MARCH 8, 2023

THE PROPERTY IS COMMONLY KNOWN AS:

FORMER 3M LAND on IDEAL AVE, LAKE ELMO, MN

All proposals and other communications must be addressed and returned to:

City of Lake Elmo
Attn: City Administrator
3800 Laverne Ave N
Lake Elmo, MN 55042

PROPOSALS MUST BE RECEIVED NO LATER THAN 3:00 PM LOCAL TIME

ON THURSDAY, APRIL 13, 2023

REQUEST FOR PROPOSALS

FOR

CITY OF LAKE ELMO

I. PURPOSE OF THE REQUEST FOR PROPOSALS

The City of Lake Elmo, Lake Elmo, Minnesota (the "City") will accept proposals for the purchase of parcels of City owned property known as the former 3M land. There are two purchase options, Option One and Option Two.

Option One

The property is located east of Ideal Ave and South of CSAH 14, a portion of Tax Parcel ID 16.029.21.24.0002 . The property for sale is approximately 75 acres with 55 acres being south of CSAH 14 and north of the railroad tracks and 20 acres being south of the railroad tracks.

Option Two

The Option Two includes all of the property described in Option One above and the additional property located east of Ideal Avenue and North of CSAH 14, PID 16.029.21.24.0002 and **PID** 16.029.21.23.0003, minus 4 acres for Public Works.

Responses to this Request for Proposals ("RFP") must state which options the respondent is proposing for (i.e., Option One or Option Two or if the respondent is willing to be considered for both options). Proposals must be in writing.

II. PROPERTY INFORMATION

The property that is a part of Option One is approximately 75 acres and is bisected by the Union Pacific Railroad line. The respondent will be required to apply to the City for a rezoning of the Property so that it is consistent with the Business Park guiding in the 2040 Comprehensive Plan during the development process. The respondent will be responsible for seeking any land use or other governmental approvals necessary for its intended use of the Property at its own expense. Municipal water is currently available to the site. Municipal sanitary sewer lines have been brought to the site and are expected to be operational in the Summer of 2023 through a partnership with the City of Oakdale. A future land use map is attached as Exhibit 5.

Option Two includes all of Option One property and the property approximately 100 acres north of CSAH 14, which is guided for Business Park, Commercial, Low Density Residential and Park. The City Council adopted an AUAR in April 2022 (copy attached as Exhibit 4) and the Metropolitan Council approved the new guidance in January 2023. The residential portion of the property cannot be developed until 2027 per an agreement between the City of Lake Elmo and City of Oakdale. The additional property that is part of Option Two cannot be developed independently of the Option One Property due to the location of municipal sewer at Ideal Ave and 31st St, which would need to be extended north to serve property on the north side of CSAH 14. Similar to Option One, the respondent will be responsible for applying for a rezoning during the development process as well as any land use or other governmental approvals necessary for its intended use, including but not limited to, all approvals and dedications required by the City's zoning and subdivision regulations.

All of the property is currently vacant and has been agricultural for many years. The property was last actively farmed in 2021. A Phase 1 Environmental Assessment was completed in May 2019. A copy is included as Exhibit 3.

A listing of the permitted and conditional uses for properties that are zoned as Business Park in the City is attached to this Request for Proposals as Exhibit 2. Contact the Lake Elmo Planning Department for uses in other districts under Option Two.

III. CONDITIONS GOVERNING THE SALE OF THE PROPERTY

A. Offer

All respondents must complete and submit the Offer to Purchase form (attached as Exhibit 1) to the City indicating the amount being offered for the Property. The offer must not be subject to any type of financing contingency. All offers submitted to the City in response to this RFP shall remain valid for 90 days from the submittal deadline set forth in this RFP. This time period may be extended by mutual agreement of the City and any of the proposer(s). The Property is being sold by the City "AS IS."

B. Purchase Price

The minimum purchase price for the Property is $125,000 per acre. The purchase price must be paid in full to the City either by wire transfer or by certified check at closing.

C. Closing Fees and Costs

The successful respondent will be solely responsible for paying all closing fees and costs, including, but not limited to, a survey, if desired by respondent, any tests desired by respondent, title commitment fees, title search and examination fees, any title insurance premiums or the cost of any endorsements, closing fees charged by the closing company, any brokers' fees or commissions, respondent's attorneys' fees, the state deed tax, the cost of recording the deed, and any escrow fees. The City will be responsible for the cost of making title to the Property marketable and the City's attorneys' fees.

D. Commission

The City agrees and acknowledges that it has not engaged the services of any agent or broker for the sale of the Property. In the event that the successful respondent has engaged an agent or broker, the respondent will be solely responsible for the payment of said agent or broker, and said fees must not be deducted from the purchase price.

E. Earnest Money Deposit

Within five business days after all parties signing a purchase agreement, the successful respondent will be required to deposit 10 percent of the purchase price, as earnest money, with a title company who will hold the earnest money in escrow. The earnest money will be applied to the purchase price and will be refundable except in the event of a breach of the purchase agreement by the respondent.

F. Proposal Submission

To be considered, a sealed written proposal must be submitted by the respondent to the City either by mail or by personal delivery no later than 3:00 p.m. on Thursday, April 13, 2023. No proposals submitted by electronic mail or facsimile will be accepted. The outside of the envelope must be marked "PURCHASE OF REAL PROPERTY RFP" and delivered to:

City of Lake Elmo
Attn: City Administrator
3800 Laverne Ave N
Lake Elmo, MN 55042

All submissions are subject to the Minnesota Data Practices Act, Minnesota Statutes Chapter 13. Pursuant to Minnesota Statutes Section 13.591, subdivision 3 (b), data submitted in response to a request for proposals by a government entity are private or nonpublic until the time and date specified in the solicitation that proposals are due, at which time the name of the responder becomes public. All other data in a responder's proposal are private or nonpublic data until completion of the evaluation process. "Completion of the evaluation process" means that the City has completed negotiating the purchase agreement with the selected respondent. After the City has completed the evaluation process, all remaining data submitted by all responders are public with the exception of trade secret data as defined in Minnesota Statutes Section 13.37. If all proposals are rejected prior to completion of the evaluation process, all data, other than the names of the responders, remain private or nonpublic until a resolicitation of the request for proposals results in the completion of the evaluation process or a determination is made to abandon the sale. If a resolicitation of proposals does not occur within one year of the proposal opening date, the remaining data become public.

H. Provision of Contact Information

Those interested in submitting a proposal are encouraged to provide contact information to Kristina Handt, City Administrator at: khandt@lakelemo.org. This will allow the City to contact interested parties in the event that there are any addenda or changes to this RFP. Individuals who do not submit contact information to the City shall be solely responsible for independently verifying if any addenda or other changes have been issued for this RFP by contacting the City in writing prior to the submission deadline.

I. Selection

The City will select the proposal that is in the best interests of the City and will support the best use of the Property in the City's sole discretion. The sale of the Property is subject to the approval of a purchase agreement between the successful respondent and the City Council. The City reserves the right to negotiate with respondents and to reject any and all offers.

J. Schedule

March 8, 2023	Request for Proposals Issued
April 13, 2023, 3:00 p.m.	Proposals due
May 2023(estimate)	Economic Development Authority Review of Proposals and Recommendation to the City Council
June 6 or 20, 2023(estimate)	City Council Selection

K. Questions

All questions or requests for clarification should be submitted in writing via email to khandt@lakeelmo.org. The City shall not be responsible for the delay in the transmission of any request for clarification or other communication. The City will make all questions and answers available to all interested parties.

L. Conflict of Interest

Any respondent who has a conflict of interest or potential conflict of interest shall disclose the same in its offer. The City will review any potential conflicts of interest in its evaluation of the proposals.

IV. SUBMISSION REQUIREMENTS

A. Required Content

At a minimum, the following information must be included in all proposals:

1. Cover Letter

The respondent must submit a cover letter committing the respondent to purchasing the Property on the terms and conditions set forth in this RFP and providing information regarding the respondent's intended use of the Property.

2. Offer to Purchase

The respondent must complete the Offer to Purchase Property form as is with no changes or alterations (attached as Exhibit 1).

In addition to purchase price, all proposals must include information related to:

a. How the property is intended to be developed?
b. When does the respondent intend to develop the property?
c. How much will the proposed development increase the taxable value of the property?
d. How many jobs (both permanent and construction jobs) will be created by the

proposed development? What are the anticipated wages/salaries of those jobs?

V. EVALUATION CRITERIA

The City reserves the right to contact some or all of the respondents to clarify non-material aspects of their offers. In evaluating the proposals, the City's selection will be based upon those factors deemed necessary to promote the best interests and welfare of the City, the neighborhood, and the community, including, but not limited to, the best use of the Property, change in tax valuation, and quantity/quality of jobs created.

VI. REJECTION OF PROPOSALS

A. Selection does not Guarantee a Purchase Agreement

This RFP shall not create any legal obligation of the City to evaluate any proposal that is submitted or to enter into any purchase agreement with a respondent who submits a proposal except on terms and conditions that the City deems, in its sole and absolute discretion, to be satisfactory and desirable. All proposals should contain an affirmative statement regarding whether there is any "conflict of interest" with the City, its elected and appointed officials, and the respondent.

The City reserves the right to reject any and all proposals received and the right to waive non-material formalities and technicalities according to the best interests of the City. The City reserves the right to select a respondent or multiple respondents for the purchase of the Property. The City is not obligated to select the proposal with the highest offering price, as it is considering other factors that are outlined in this RFP in addition to price.

By submitting a proposal, the Respondent acknowledges its understanding of the requirements of this RFP and agrees to be bound to the same when negotiating the purchase agreement, if its proposal is selected by the City.

B. No Liability for Expenses or Costs

The City is not responsible for expenses or costs incurred by respondents in connection with this RFP process and submitting a proposal. This includes, but is not limited to, costs associated with preparing the proposal and of participating in any site visits, oral presentations, or negotiations.

VII. SELECTION

A. Completion

The Respondent's proposal must be complete in order to be considered by the City for selection. Proposals will be reviewed by the City Administrator for completeness in addressing the five criteria listed in the submission requirements set forth in Section IV (A)(1) of this RFP and Exhibit 1.

The Lake Elmo Economic Development Authority will review all complete proposals and make a recommendation to the City Council as to which proposal should be selected.

B. Purchase Agreement

The selected proposer will be required to enter into a purchase agreement with the City for the purchase of the Property. The purchase agreement is subject to the approval of the City Council.

EXHIBIT 1: OFFER TO PURCHASE REAL PROPERTY

SUBMITTAL: To ensure proper identification and handling, submit your offer in a sealed envelope. This Offer must be submitted by 3:00 p.m. on Thursday, April 13, 2023 to:

City of Lake Elmo
Attn: City Administrator
3800 Laverne Ave N.
Lake Elmo, MN 55042

Timely delivery of the offer is the sole responsibility of the Respondent. The offer must be submitted by personal delivery or mail. Late offers will not be accepted. All offers shall remain valid for a period of 90 days from the RFP submittal date. The time period may be extended by mutual agreement of the City and the proposer.

TO: City of Lake Elmo
Attn: City Administrator
3800 Laverne Ave N.
Lake Elmo, MN 55042

_____, herein called the "Buyer," hereby offer and agree to purchase the Property known as the former 3M land located east of Ideal Ave and South of CSAH 14,

Check Option Proposing on:

_____ Option One, a portion of Tax Parcel ID 16.029.21.24.0002 (the "Property") approximately 75 acres in size from the City of Lake Elmo ("City").

_____ Option 2, *includes all of the property described in Option One* and a portion of Tax Parcel 16.029.21.24.0002 and Tax Parcel 16.029.21.23.0003, which totals approximately 176 acres from the City of Lake Elmo ("City").

Circle One:

If proposing for Option 2 and the City decides to only consider proposals for Option One, Proposer **IS WILLING** or **IS NOT WILLING** (circle one) to be considered for Option One.

subject to the terms and conditions contained in this Offer and the City's Request for Proposals dated March 8, 2023 at the price set forth below:

$_____

The proposed use of the property will be: _____

_____

How is the property intended to be developed? _____

_____

When do you intend to develop the property? _____

How much will the proposed development increase the taxable value of the property? _____

_____

How many jobs (both permanent and temporary construction jobs) will be created by the proposed development?

Temporary Construction Jobs: _____

Permanent Jobs: _____

Anticipated Annual Salaries/Wages of Jobs:_____

I understand that possession of the Property will be granted upon closing. Transfer of the Property will be by quit claim deed.

I also understand that closing shall be within 180 days of approval of a purchase agreement by the City Council, unless otherwise agreed to by the parties. This purchase is subject to approval by the City Council and the City reserves the right to reject any and all offers.

I am aware/not aware of any potential conflict of interest with respect to my purchase of the Property. If there is a potential conflict of interest, please state the potential conflict of interest here: _____.

I understand and agree to the terms set forth in this offer and also in the City's Request for Proposals.

Date:_____ By: _____

Its: _____

EXHIBIT 2 – City of Lake Elmo Zoning Regulations for Business Park

Zoning District: BP Business Park/Light Manufacturing District. The purpose of the BP District is to provide areas for attractive, high quality business park development primarily for office, high quality manufacturing and assembly, and non-retail uses in developments which provide a harmonious transition to residential development and neighborhoods by: 1) Conducting all business activities and essentially all storage inside buildings; 2) Consisting of high quality and attractive buildings which blend in with the environment; 3) providing open space, quality landscaping and berming; 4) including berming and buffering of parking, loading docks and other similar functions; and 5) protecting and enhancing the natural environment; and 6) providing users with an attractive working environment that is unique in the eastern metropolitan area with immediate access to I94.

Permitted Uses:

1. Business Services
2. Business Center
3. Offices
4. Communication Services
5. Educational Services
6. Financial Institution
7. Parks and Open Areas
8. Wayside Stand

Accessory Uses:

1. Parking Facility
2. Solar Equipment
3. Other Structures typically incidental and clearly subordinate to permitted uses

Conditional Uses, Not Inclusive: (all conditional uses require a conditional use permit that must be reviewed and approved by the City Council and reviewed by the Planning Commission)

1. Colleges and Universities
2. Community Service
3. Day Care Center
4. Schools, public and private
5. Local Transit
6. Public Assembly
7. Lodging
8. Medical Facility
9. Transportation Services
10. Veterinary Services
11. Standard Restaurant
12. Fast Food Restaurant
13. General Retail Sales
14. Adult indoor recreation/entertainment
15. Indoor athletic facility
16. Light Industrial
17. Non-production industrial

18. Motor Freight and Warehousing
19. Research and Testing
20. Broadcasting and Communications
21. Wind Generator

Further information on setbacks and other regulatory requirements may be found on the City's website www.lakeelmo.org, Planning and Zoning, Municipal Code Sec. 154.550-154.555 (Article XIV) or by contacting the Planning Department at 651-747-3912.

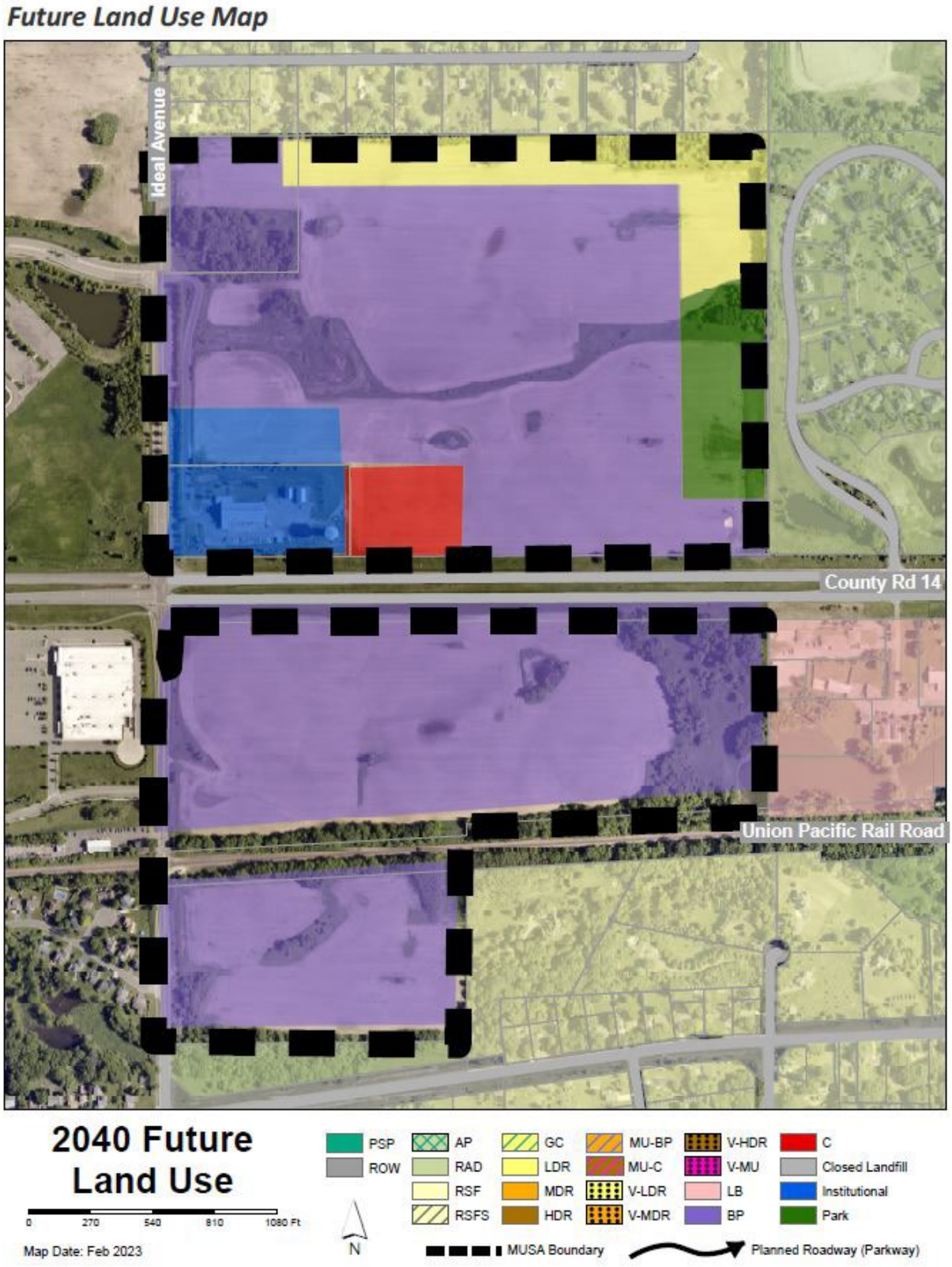
EXHIBIT 3 – Phase 1 Environmental Assessment by Barr Engineering May 2019

[to be added]

EXHIBIT 4 – 2022 AUAR

[to be added]

EXHIBIT 5-Future Land Use Map of Area



Phase I Environmental Site Assessment

PIN #1602921240002

Lake Elmo, Minnesota

Prepared for
3M

May 2019

4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
952.832.2600
www.barr.com

Phase I Environmental Site Assessment

PIN #1602921240002
Lake Elmo, Minnesota
May 2019

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1.0 Introduction

Barr Engineering Co. (Barr) was retained by 3M to complete a Phase I Environmental Site Assessment (Assessment) of a property owned by 3M and used for agriculture. The property is located in the W ½, Section 16, T29N, R21W, near Lake Elmo, Washington County, Minnesota (Property). The Property consists of PIN #1602921240002. The Property location is shown on Figure 1.

This report summarizes the findings, opinions, and conclusions of the Assessment. Detailed descriptions of the Property setting, utility information, land-use history, regulatory history, and current Property conditions and features are presented in the Phase I documentation in Appendix A. Informational resources are described in Section 5 of this report and are assigned unique reference numbers, which are used throughout the report and Appendix A.

Barr has performed this Assessment in conformance with ASTM, International (ASTM) Practice E 1527-13 (Practice). No intentional deviations from the Practice were made in performing this Assessment except as described in Section 1.4. In following the Practice, this Assessment also complies with the U.S. Environmental Protection Agency 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries; Final Rule.

1.1 Purpose

The purpose of the Assessment is to identify recognized environmental conditions (RECs) in connection with the Property as defined by the Practice and discussed in the findings and opinions section of the report, and to assess the property for 3M Real Estate.

1.2 Scope of Services

The Assessment involved completion of the following five components described in Section 7 of the Practice: records review, site reconnaissance, interviews, reporting, and file reviews. The following tasks were completed during the Assessment. The details of each task are described below and in Appendix A.

Records Review

- A Regulatory Database Report was obtained and federal, state, and readily available tribal records databases were reviewed.
- USGS topographic maps were reviewed and used to determine physical setting information.
- Land title information provided by the User was reviewed.
- Discretionary physical setting sources including Minnesota Department of Health well and boring records for wells in the Property vicinity and published geological reports were reviewed and used to determine physical setting information.
- Historical aerial photographs; historical topographic maps; reverse city directories; and zoning and tax assessor's records were reviewed for the Property and surrounding land.
- A fire insurance map search was conducted and no fire insurance maps were available for the Property.
- One previous Phase I ESA relevant to a portion of the Property was reviewed.

- The Minnesota Pollution Control Agency's (MPCA) What's in My Neighborhood (WIMN) and Environmental Protection Agency's (EPA) Cleanups in My Community were reviewed to supplement regulatory data.

Site Reconnaissance

- A visual inspection was conducted of the building interiors and exterior features on the Property. Current conditions with respect to land use; chemical and waste storage, use, and disposal; facility operations and equipment; utilities; and evidence of potential releases of petroleum products or hazardous substances were documented, if observed. Evidence of historical uses or conditions, if encountered, was also documented. Current land-use and occupants of neighboring properties were documented during the site visit.

Interviews

- Interviews were conducted with the Property representative and the City of Lake Elmo public works department.

Evaluation and Report Preparation

- This report was prepared to document the resources used during completion of the Assessment and to describe the findings, opinions, and conclusions of the Assessment.

File Review

- The Property was not identified on any of the standard environmental record sources, so a file review for the Property was not conducted.
- Adjoining properties were identified on multiple standard environmental record sources. A file review for one adjoining property was conducted.

1.3 Significant Assumptions

No significant assumptions were made to complete the Assessment.

1.4 Limitations, Exceptions, and Data Gaps

The following limitations and exceptions are associated with this Assessment:

- Gaps of greater than five years in historical documentation are present, and are summarized in the following table.

Date Range	Property Changes
Prior to 1936	Historical documentation was not readily ascertainable; therefore, changes in general Property land-uses are unknown.
1936-1946, 1953-1964, 1966-1974, 1978-1984, 1997-2006	Gaps greater than five years in historical documentation are present; however, general Property land-uses did not change during the time periods.

- Representative portions of the Property were observed by driving and by foot during the site visit, and some portions of the property were not directly visited beyond viewing from a distance due to the large parcel size.
- The above limitations are not considered significant data gaps that affect the ability of the EP to identify RECs on the Property.

1.5 Special Terms and Conditions

The Assessment was conducted in accordance with an Agreement between Barr and 3M.

The scope of the Assessment did not involve the collection and analysis of any type of sample. The Assessment did not involve completion of any surveys or the offering of any opinions or advice with respect to structural engineering matters, asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, compliance with environmental regulations, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality , biological agents, mold, or other conditions that are beyond the scope of the Practice.

Barr has performed its work in a manner consistent with the care and skill ordinarily exercised by members of the environmental profession under similar budget and time constraints. Within this context, Barr assumes responsibility for its own observations, along with its interpretation of the information gathered. No other warranty is made or intended.

Because Barr was not retained to verify information, Barr assumes no responsibility for the accuracy of information that it obtained from other sources including, without limitation, regulatory and government agencies, persons interviewed about the Property, and vendors of public data. Performance of the Practice is intended to reduce, but will not eliminate uncertainty regarding the presence of recognized environmental conditions on the Property. To the extent that Barr does not identify recognized environmental conditions on the Property, Barr's opinions in the report are not representations that the Property is free of such conditions. Under no circumstances can Barr represent or warrant that releases of hazardous substances or petroleum products do not exist on the Property.

1.6 User Reliance

The Assessment has been prepared for the exclusive use of 3M, herein referred to as the “User”. No others may rely on the Assessment without obtaining a formal authorization in the form of a reliance letter from Barr. Barr will provide reliance letters for additional parties only if authorized by the User.

2.0 Site Description

2.1 Location and Legal Description

The property is located in the W ½, Section 16, T29, R21, near Lake Elmo, Washington County, Minnesota (Property). The Property consists of PIN #1602921240002. The Property is approximately 3,500 feet by 2,600 feet and 172.61 acres in size. The Property boundaries are shown on Figure 2.

2.2 Property Setting and Land Use

Topography of the Property is hilly north of 34th Street and slopes downward to a drainage ditch running west to east through the Property. South of 34th Street the Property slopes downwards to the southeast (Ref. 5b). Shallow groundwater flow direction at the Property is reportedly to be to the south/southeast based on the Washington County Geologic Atlas (Ref. 2a), although the flow direction of the shallow groundwater is believed to be influenced by local discharge/recharge points, the presence of confining layers, and groundwater withdrawals and land use in nearby areas (Ref. 5f). Regional groundwater flow in the St. Peter sandstone and the Prairie du Chien group, is generally to the southwest (Ref. 5f).

The Property is currently used for agriculture and is zoned Rural Residential (Ref. 5e). No buildings are located on the Property (Refs. 1a, 5b). The Property is not connected to water or sewer (Ref. 4c). Historically the Property has been used for agricultural activities (Ref. 1a). No historical buildings were identified on the Property (Ref. 1a).

The current use of adjoining properties includes residential, agricultural, and commercial (Ref. 5b). The past use of adjoining properties includes agricultural and residential (Ref. 1a).

Additional descriptions of the Property setting and land-use are presented in Appendix A.

2.3 User-Provided Information

As detailed in Section 6 of the Practice, the User has responsibilities associated with identifying possible recognized environmental conditions in connection with the Property. Barr provided a User Questionnaire to facilitate gathering information required by the Practice. The completed User Questionnaire is included in Appendix F.

The User has no knowledge of any environmental liens or activity and use limitations against the Property, nor any specialized knowledge or experience that is material to identifying recognized environmental conditions in connection with the Property. Since no sale is pending or imminent, no information was provided to the environmental professional regarding the relationship between a potential purchase price and fair market value. Property valuation is not part of the scope of this Assessment. The User did not report conditions indicative of releases or threatened releases, any obvious indicators that point to the presence or likely presence of contamination at the Property, or specialized knowledge about the Property related to the items listed in Section 6 of the Practice (Ref. 4b, Appendix F).

3.0 Findings and Opinions

This section summarizes observations regarding the presence of hazardous substances or petroleum products on the Property (findings) and discusses the basis for concluding if a finding is or is not a recognized environmental condition.

3.1 Definitions

Finding – For the purpose of this Assessment, a finding is an observation regarding the presence of hazardous substances or petroleum products on the Property which may be considered a recognized environmental condition, a historical recognized environmental condition, or de minimis condition.

Recognized environmental condition (REC) - A REC is defined by the Practice as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minims conditions are not recognized environmental conditions."

Historical recognized environmental condition (HREC) - An HREC is defined by the Practice as "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a historical recognized environmental condition, the environmental professional must determine whether the past release is a recognized environmental condition at the time the Phase I Environmental Site Assessment is conducted (for example, if there has been a change in the regulatory criteria). If the EP considers the past release to be a recognized environmental condition at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a recognized environmental condition."

Controlled recognized environmental condition (CREC) – A CREC is defined by the Practice as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls). A condition considered by the environmental professional to be a controlled recognized environmental condition shall be listed in the findings section of the Phase I Environmental Site Assessment report, and as a recognized environmental condition in the conclusions section of the Phase I Environmental Site Assessment report."

De minimis conditions – As defined by the Practice, conditions determined to be "de minimis" generally do not present a threat to human health or the environment and generally would not be subject of an

enforcement action if brought to the attention of appropriate governmental agencies. De minimis conditions are not considered RECs.

3.2 Findings and Opinions

Barr has identified the following findings and developed the following opinions regarding these findings, as summarized in the following table.

Finding ID #	Description of Finding	Opinion with Respect to Finding (REC, CREC, HREC, de minimis)
Finding #1	**Groundwater PFAS Impacts in the East Metro Area:** Nearby Superfund sites have been identified by the state as contributing sources of widespread PFAS contamination in groundwater, including the Washington County Landfill, located approximately 3,000 feet northeast of the Property, and the Oakdale Dump site, located 3,600 feet west of the Property. Both sites are estimated to be side-gradient of the Property for shallow groundwater, and the Washington County Landfill site may be upgradient of the Property for groundwater in bedrock. Drinking water advisories have been issued for private wells southeast of the Property. No wells are currently present on the Property. The Minnesota Department of Health has designated a Special Well Construction Area in this part of Lake Elmo that includes the Property, which restricts well construction in some cases and requires PFAS sampling of new wells in other cases in order to prevent exposure to PFAS. City water is available near the Property. Additionally, the state is currently implementing area-wide investigations and remedial efforts to address PFAS in the East Metro Area.	The PFAS in groundwater is a regional concern and institutional controls are in place to address PFAS in Lake Elmo groundwater, therefore this finding is not considered a REC.
Finding #2	**Miscellaneous Debris:** Occasional areas of miscellaneous, inert debris were observed dispersed across the site. Observed materials included wood, metal fragments, plastic and glass shards, a small ash pile, and a stack of cinder blocks.	Based on the quantity and nature of the debris, this finding is considered a de minimis condition and is not a REC.
Finding #3	**Past Agricultural Use:** The Property has been used for agriculture since at least 1936 and there is potential for agricultural chemicals to have been used at the Property.	Because it is assumed that agricultural chemicals were applied using industry standard application rates, and no evidence of inappropriate agricultural chemical applications was identified, this finding is not a REC.
Finding #4	**Adjoining LUST Site:** One closed LUST site was reported at an east-adjoining, down-gradient parcel. Soil and groundwater contamination was reported and delineated in the regulatory records.	Based on the downgradient location of the LUST site, this finding is not a REC.

Finding ID #	Description of Finding	Opinion with Respect to Finding (REC, CREC, HREC, de minimis)
Finding #5	**Pipelines:** Two pipelines were documented on the Property. One natural gas pipeline was identified running east to west along the railroad. A petroleum pipeline was identified crossing the Property from northwest to southeast.	There are no regulatory listings indicating a release from these pipelines, and there was no staining, stressed vegetation, or other indications of a release observed during the site visit. Therefore, this finding is not a REC.
Finding #6	**Railroad:** The Property includes two parcels that are separated by an active railroad that is present on an adjoining property (see Figure 2). The railroad tracks, ballast bedding, and adjoining ground appeared in good condition and no staining or evidence of a release was observed. There are no regulatory reports of a release related to this railroad property	Railroads can be sources of impacts to shallow soils; however, based on the lack of staining or other evidence of releases, this finding is not considered a REC.

4.0 Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of PIN #1602921240002, the Property. Any exceptions to, or deletions from, this Practice are described in Section 1.4 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property.

4.1 Deviations

There were no deletions, deviations from, or additions to the Practice associated with the Assessment other than the limitations and exceptions listed in Section 1.4.

5.0 References

The following resources are numbered for use as references.

Ref #	Resource	Years Covered or Item Date
Standard Historical Resources		
1a	Aerial Photographs	2017, 2013, 2010, 2006, 1997, 1991, 1987, 1984, 1978, 1974, 1966, 1964, 1953, 1947, 1936
3	Fire Insurance Maps	Not Available
1c	Property Tax Files	Not Reviewed
1d	Recorded Land Title Records	ALTA Commitment for Title Insurance, First American Title Insurance Company File No: NCS-957660-MPLS Certificate of Title No. 61999
1e	USGS Topographic Maps	2013, 1993, 1980, 1972, 1967, 1950, 1949, 1946
1f	Local Street Directories	2014, 2010, 2005, 2000, 1995, 1992, 1987, 1982, 1977
	Building \ Department Records	Not Reviewed
1g	Zoning/Land Use Records	Not Reviewed
	Other Historical Sources	Not Reviewed
	Prior Assessments	Not Reviewed
Discretionary and Non-Standard Physical Setting Sources		
2a	Berg, J.A., 2019, Groundwater Atlas of Washington County, Minnesota: Minnesota Department of Natural Resources, County Atlas Series C-39, Part B, Report and Plates 7–9.	2019
2b	Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/	Accessed April 29, 2019
2c	Published Geologic Report – Bedrock Geology Julia Steenberg and Andrew Retzler. 2016. Geologic Atlas of Washington County, Minnesota (Atlas C-39 Part A, Plate 2). University of Minnesota, Minnesota Geological Survey. https://conservancy.umn.edu/handle/11299/178852	Accessed April 29, 2019
Standard Environmental Record Sources		
3a	EDR Report (Appendix D)	April 24, 2019
3b	What's in My Neighborhood? 4/24/2019. Minnesota Pollution Control Agency. 4/24/2019. *<http://www.pca.state.mn.us/index.php/data/wimn-whats-in-my-neighborhood/whats-in-my-neighborhood.html>*	April 24, 2019
3c	Cleanups in My Community. 4/24/2019. Environmental Protection Agency. 4/24/2019	April 24, 2019

Ref #	Resource	Years Covered or Item Date
	https://www.epa.gov/cleanups/cleanups-my-community	
Interviews		
4a	Property Owner/Key Site Manager: Jim Kotsmith, Manager, Corporate Environmental Programs, 651-737-3635	April 29, 2019
4b	User Representative: Jim Kotsmith, Manager, Corporate Environmental Programs, 651-737-3635	April 29, 2019
4c	Public Works/City Engineering: Kristina Handt, City Administrator, City of Lake Elmo, 651-747-3905	April 29, 2019
Supplemental Resources		
5a	Minnesota Department of Health County Well Index	April 26, 2019
5b	Site Visit Emily Cook, Environmental Engineer, 952-832-2648	April 29, 2019
5c	Previous Investigation: Natural Resource Group, Inc., 2008. Phase I Site Assessment, Lake Elmo, MN.	June 8, 2005
5d	File Review: Oakwood Animal Hospital Leak Site #19750	May 1, 2019
5e	Lake Elmo Zoning Map. Available online at http://www.lakeelmo.org/wp-content/uploads/2019/04/NewZoning3.25.2019.pdf	Accessed May 1, 2019
5f	Minnesota Department of Health Notice of Designation of Special Well Construction Area, Lake Elmo-Oakdale, Washington County, Minnesota. Available online at https://www.health.state.mn.us/communities/environment/water/docs/wells/swbca/lakeelmomemo.pdf	March 8, 2017
5g	Minnesota 3M PFC Settlement, East Metro Study Area. Available online at https://3msettlement.state.mn.us/	Accessed April 30, 2019

6.0 Signature and Qualifications of Environmental Professional

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

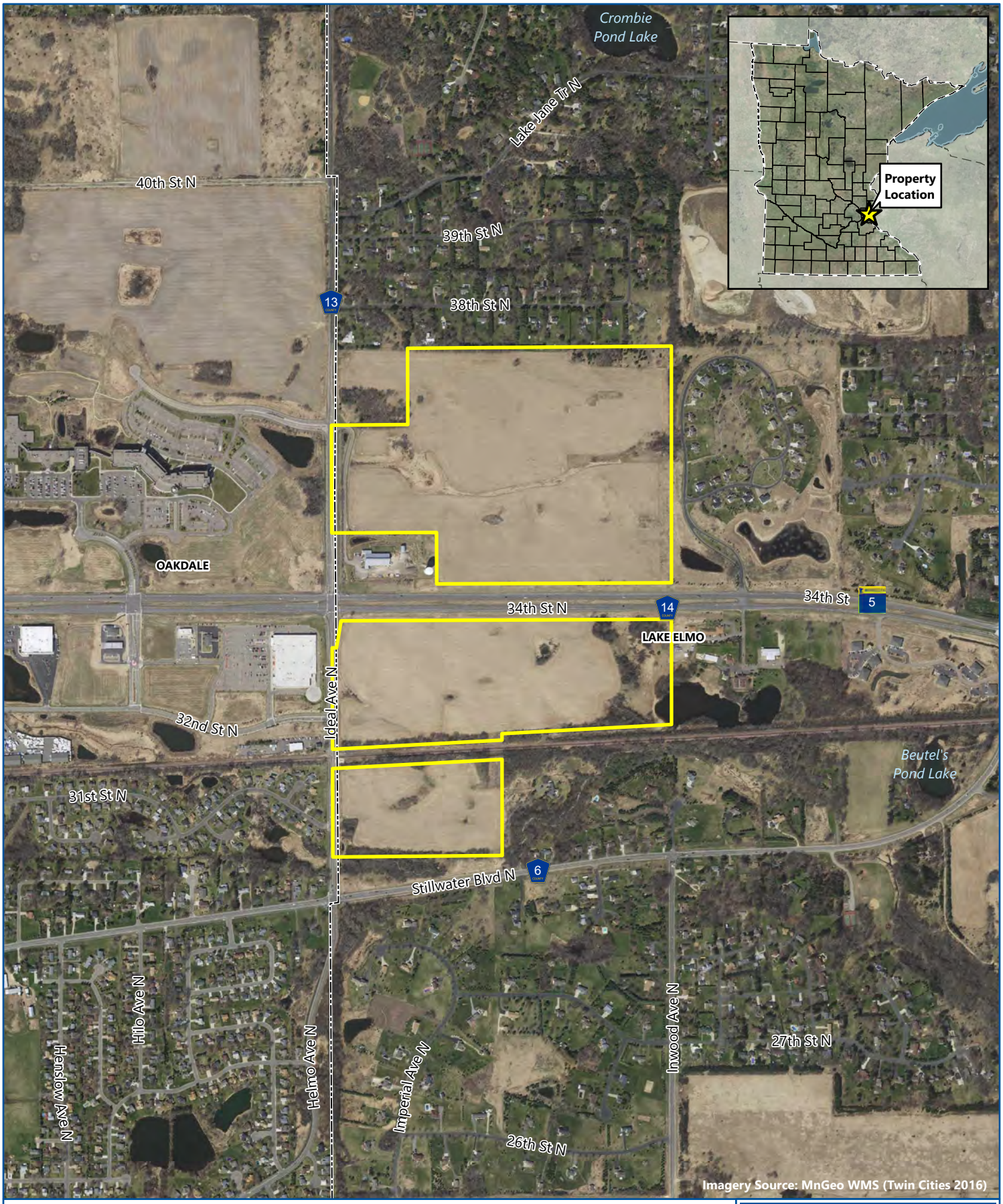
Barr performed this Assessment in conformance with the ASTM, International (ASTM) Practice E 1527-13. Special terms, conditions, limitations, and exceptions that apply to the Assessment are described throughout this Report and in the Appendices.

May 8, 2019

Jennifer Brekken, Environmental Professional (Date)

Qualifications of the Environmental Professional are summarized in Appendix G.

Figures



Property Boundary (Approximate)

Municipal Boundary

0 1,000 2,000

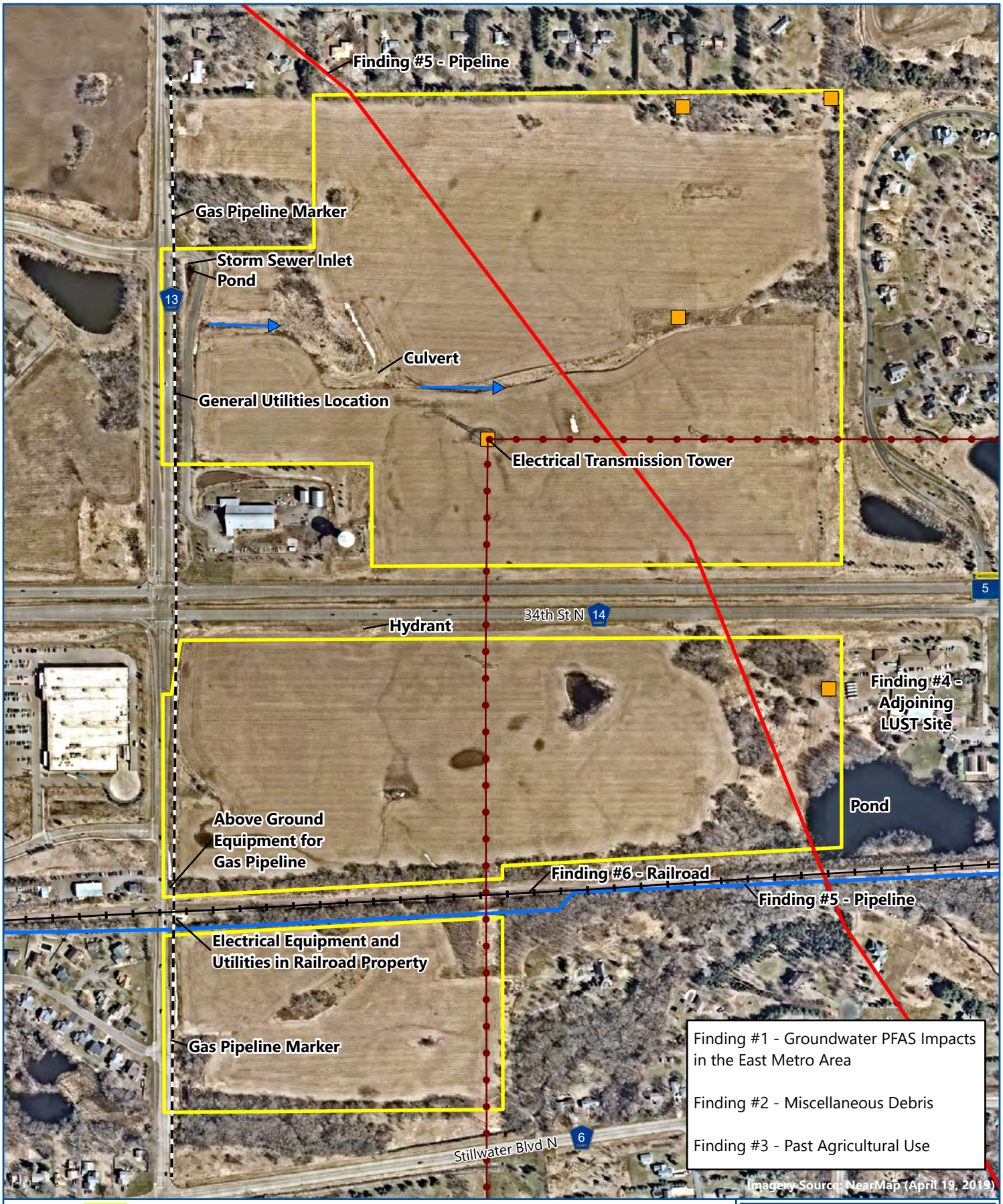
Feet

BARR

PROPERTY LOCATION MAP
Parcel ID 1602921240002
Lake Elmo, MN

FIGURE 1

Barr footer: 4/30/2019 12:05 PM 4/30/2019 12:09 PM File: I:\Projects\23\82\1219\Maps\Reports\Phase I ESA\Phase I Report - 1602921240002.aprx Layout: Figure 1 - Property Location User: kac2



Property Boundary (Approximate)
Natural Gas Pipeline (Approximate)
Petroleum Pipeline (Approximate)
Overhead Electrical Line
Drainage Ditch
Debris
Railroad

N

0 250 500
Feet

BARR

PROPERTY LAYOUT MAP
Parcel ID 1602921240002
Lake Elmo, MN

FIGURE 2

Barr footer: 5/1/2019 3:58 PM 5/1/2019 4:02 PM File: I:\Projects\23\82\1219\Maps\Reports\Phase I ESA\Phase I Report - 1602921240002.aprx Layout: Figure 2 - Property Layout User: kac2

Appendices

Appendix A

Phase I Documentation

Appendix A

Phase I Environmental Site Assessment Documentation
PIN #1602921240002
Lake Elmo, Minnesota
May 2019

I. General Property Information

Property location map is shown on Figure 1. Property layout with existing and former features is shown on Figure 2.

Property name: PIN #1602921240002

County: Washington

Township: 29N **Range**: 21W **Section**: W 1/2

Property size: 172.61 acres

Current Property owner and year of purchase: 3M has owned the Property since 1966.

Current Occupant(s): None

Current Property use: Agriculture

II. Physical Setting

Surface elevation: Approximately 985 feet above mean sea level (MSL; Ref. 1e).

Topographic conditions of Property: The Property is hilly north of 34th Street and slopes downward to a drainage ditch running west to east through the Property. South of 34th Street the Property slopes downwards to the southeast (Ref. 5b).

Stratigraphy (soils and upper bedrock units): Soils at the Property consist mainly of well-drained Santiago silt loam with six to 15 percent slopes, well-drained Antigo silt loam with two to six percent slopes, and well-drained Antigo silt loam with six to 15 percent slopes (Ref. 2b). A log from a water supply well that was sealed on a nearby Property in 2007 indicates alluvial deposits overlying Platteville Limestone, located 25 feet below ground surface (bgs). The well extended into the underlying St. Peter Sandstone (Ref. 5a).

Nearest surface water body (name and distance): A pond is located on the east side of the Property south of 34th Street North (Ref. 1a, 5a). Several other nearby surface water features are present in various directions.

Anticipated groundwater depth/flow direction: The anticipated groundwater depth/flow direction is based on the log for the sealed well (Ref. 5a), Washington County Geologic Atlas (Ref. 2a), and information from MDH's 2007 Memo outlining a designation special well construction area (Ref. 5f). Shallow groundwater at the Property likely occurs in the alluvium present from 0 to 25 feet bgs, and the groundwater in the St. Peter Sandstone is approximately 60 feet bgs. The shallow groundwater reportedly flows to the south/southeast (Ref. 2a), although the flow direction of the shallow groundwater is believed to be influenced by local discharge/recharge points, the presence of confining layers, and groundwater withdrawals and land use in nearby areas. Groundwater levels and flow directions are also influenced by recharge from losing streams and by natural discharge to local lakes and streams.

Regional groundwater flow in the St. Peter sandstone and the Prairie du Chien group, is generally to the southwest.

III. Municipal Information & Utility Service to Property

The locations of Property utilities (wells, septic systems, sewer lines) are shown on Figure 2.

Water Supply

Municipal water supply and intake location(s): The City of Lake Elmo's water supply comes from the Prairie du Chein and Jordan aquifers (Ref. 4c).

Property potable/process water supply: The Property is not connected to municipal water (Ref. 4c).

Have other potable water supplies serviced the Property? If yes, describe: No. (Ref. 4a)

Sanitary Service

Type of sanitary service for the Property: The Property is not connected to sanitary service (Ref. 4c).

Have other methods of sanitary service been used at the Property? No. (Ref. 4a)

Evidence of current onsite septic systems or drain fields: No evidence of septic systems or drain fields were observed (Ref. 5b).

Stormwater Management

Is the Property serviced by stormwater drains, storm sewers, ponds or drainage ditches? No. (Ref. 4a). A storm sewer intake and manhole were observed on the access road to the Public Works facility. Culverts and ditches were also observed in the field on the Property (Ref. 5a).

Do any neighboring properties discharge to the Property? Stormwater discharges to the Property from a culvert located on the west site of the Property near the access road to the Public Works facility. The origin of the stormwater is unknown (Ref. 5b).

Property Zoning

The Property is zoned Rural Residential (Ref. 5e).

IV. Current Property Use

Current Property Waste Management

Waste is not currently generated at the Property (Ref. 5b).

V. Property, Adjoining, and Surrounding Area Regulatory Status

Regulatory database summary and supporting information is in EDR Report located in Appendix D. Only information generated through searches of databases required by ASTM 1527-13 and within the appropriate minimum search distances were reviewed.

Property and Adjoining Property Regulatory Status

Table 1

ASTM List	Address	Listing Status	Potential or Documented Release to Environment	Was a Regulatory File Review Completed?
RCRA NONGEN/NLR, FINDS, ECHO	Hilpisch Chiropractic Clinic, 8603 34th Street N (East Adjoining)	Active	Downgradient. No evidence of release to the environment.	No, site is downgradient of Property.
WIMN, LUST, RCRA-CESQG, SRS, VAPOR	Oakwood Animal Hospital, 8611 N 34th St (East Adjoining)	Closed	Downgradient. Closed LUST site, with noted groundwater contamination.	Yes
RCRA-CESQG, WIMN, TIER 2, UST, NPDES	Lake Elmo Public Works, 3445 Ideal Ave N (West Adjoining)	Active	Tier 2 facility listing, small quantity hazardous waste generator	No, there is no listing associated with a release to the environment.
RCRA-CESQG	CVS Pharmacy 17218, 7900 32nd St N (West Adjoining)	Active	RCRA Generator. No evidence of release to environment.	No, there is no listing associated with a release to the environment.
RCRA-LQG, WIMN, MANIFEST, TIER 2	Target Store T2135, 7900 32nd St N (West Adjoining)	Active	RCRA Generator. No evidence of release to environment.	No, there is no listing associated with a release to the environment.
WIMN, MANIFEST, FINDS, RCRA NONGEN/NLR, ECHO, RCRA-CESQG	Myron's Service Center/Central Sweeping, 3240 Ideal Ave N (West Adjoining)	Active	Auto shop and RCRA Generator. No evidence of release to environment.	No, there is no listing associated with a release to the environment.

Abbreviations:
RCRA NonGEn/NLR – RCRA Non-Generator
FINDS – Facility Index System/Facility Registry System
ECHO – Enforcement & Compliance History Information
WIMN – What's in my Neighborhood?
LUST – Leak Sites
RCRA-CESQG – RCRA Conditionally Exempt Small Quantity Generator
SRS – Site Remediation Section Database
VAPOR – Vapor Intrusion
TIER 2 – Tier 2 Facility Listing
UST – Underground Storage Tanks
NPDES – Wastewater Permits Listing
RCRA-LQG – RCRA Large Quantity Generators
MANIFEST – Hazardous Waste Manifest Data

File review results are summarized in Section VI. Justification for not completing a file review, if applicable, is provided above.

Surrounding Area Regulatory Status

The following table provides a summary of those database listing that the environmental professional has identified as potentially upgradient. Downgradient and/or side gradient listing are also included if the environmental professional has determined that the nature of the listing (e.g., Superfund site, chlorinated solvent release, landfill, etc.) should be evaluated for their potential to impact the Property.

Table 2

Name	Address	ASTM Listing(s)	Distance & Direction From Property	Comments	Do issues related to the listing indicate the potential for impacts to soil, groundwater or vapor at the Property?
Washington County Sanitary Landfill	4029 Jamaca Ave N	WIMN, SRS, SWF/LF, INST CONTROL, SHWS, LCP, NPDES, ROD, US ENG CONTROLS, DELISTED NPL, CDC HAZDAT, SEMS, MN LS, MN DEL PLP, FINANCIAL ASSURANNCE	Approximately 0.5 mi. NW, Upgradient	Potential contributor to the East Metro PFAS impacts.	Yes, potential for contributing PFAS impacts to area groundwater (Ref. 5f).

Name	Address	ASTM Listing(s)	Distance & Direction From Property	Comments	Do issues related to the listing indicate the potential for impacts to soil, groundwater or vapor at the Property?
Oakdale Dump	N Hadley Ave & N Granada Ave, Oakdale, MN	NPL, SEMS, US ENG CONTROLS, ROD, PRP, ICIS	0.69 mi. W, Sidegradient	Potential contributor to the East Metro PFAS impacts.	Yes, potential for contributing PFAS impacts to area groundwater (Ref. 5f).
3M Company Residence	7990 40th St. N, Oakdale, MN	WIMN	0.307 mi. NW, Upgradient	Inactive hazardous waste permit.	No, no evidence of potential for impacts to the Property.
McDonald's Oakdale	Unknown	WIMN	0.182 mi. WSW, Sidegradient	Inactive Construction stormwater permit	No, no evidence of a release or potential impacts to the Property.
Carlson Residence	8251 Deer Pond Ct. N, Lake Elmo, MN	LUST, SRS, VAPOR, WIMN	0.44 mi. N, Upgradient	LUST, SRS, and VAPOR listing related to a fuel oil release. No groundwater contamination reported, and the LUST was closed in March 2018	No, no groundwater contamination reported from the LUST site. Release is located greater than 250 feet from Property.
Slumberland Inc.	1 Imitation Place, Oakdale, MN	MANIFEST, WIMN	0.45 mi. W, Sidegradient	Hazardous waste generator and industrial stormwater permit.	No, no evidence of potential for impacts to the Property.

Tribal Sites

As part of the EDR Report, locations of Native American reservations equal to or greater than 640 acres in size within the search area are reported. No reservations meeting this size criterion were identified within 1 mile of the Property (Ref. 3a) The local government official was not aware of any Native American reservations within one mile of the Property (Ref. 4c).

Orphan Site Summary

None identified (Ref. 3a).

VI. Report and File Review Summary

Previous Environmental Investigations/Remedial Actions of the Property

Relevant portions of previous investigation reports completed for the Property are reproduced in Appendix E. The following table gives a general summary of the each known previous investigation's scope, conclusions, and recommendations. Each investigation is described according to its specific reference number, as denoted in the Information Resources section of the Assessment report.

Ref. #	Investigation Summary	Findings
5c	A Draft Phase I ESA was completed in 2008 by Natural Resources Group, Inc. for a portion of the Property. No figures were included to confirm the portion of the Property included in the ESA.	No RECs identified. Possible historical use of agricultural chemicals at the Site constitutes a de minimis condition.

Property File Review Summary

The Property was not identified in a standard database; no file review was completed.

Property Historical Releases

No chemical or petroleum releases were reported for the Property. No remedial actions or environmental violations have occurred on the Property (Ref. 4b).

Environmental Liens

No environmental liens were identified for the Property (Ref. 4b).

Activity Use Limitations

No institutional or engineering controls were identified for the Property (Ref. 4b). MDH has outlined a special well construction area to reduce exposure risk for PFAS in groundwater (Ref. 5f).

Proceedings Involving the Property

No pending, threatened, or past litigation, administrative proceedings, or government notices relevant to hazardous substances or petroleum products were identified (Ref. 4b).

Adjoining Property File Review Summary

Relevant portions of the regulatory file reviewed for the adjoining properties are reproduced in Appendix E. The following table gives a general summary from each regulatory file reviewed.

Ref. #	Adjoining Property Name and Direction	ASTM Listing	File Review Summary
5d	Oakdale Animal Hospital, East Adjoining, Downgradient	LUST Site #19750	Two steel fuel oil tanks were identified on the Property. A Limited Phase II Investigation was conducted to identify groundwater, soil, and vapor impact extents. Soil impacts were delineated, primarily isolated to the area around the south tank, extending 8-21 feet below ground surface. Perched groundwater DRO impacts were observed in the vicinity of the south tank; permanent groundwater, located approximately 20 feet below the soil impacts, was not sampled. The soil vapor sample concentrations did not exceeded the 10X Intrusion Screening Levels. Soil and groundwater contamination was delineated and confined to the property. The leak site was closed in December 2015.

VII. Property and Nearby Property Land-Use History

Property Land-use History

Original Property development (year/use): Records show that the Property was developed for agriculture since at least 1936 (Ref. 1a).

Chronology of Past Property use/ownership: The Property has been owned by 3M since 1966.

Historical Property Structures

There were no historic structures identified on the Property (Ref. 1a).

Demolition Debris: Not applicable.

Current Property Structures, Renovations, and Additions

No structures are present on the Property (Refs. 1a, 5b).

Renovation Debris: Not applicable.

Building Additions: Not applicable.

Nearby Property Land-Use History

North	**Historical Use:**	Agricultural (Ref. 1a)
	Current Use:	Residential (Ref. 5b)
South	**Historical Use:**	Agricultural (Ref. 1a)
	Current Use:	Residential, vacant parcel (Ref. 5b)

East	**Historical Use:**	Agricultural (Ref. 1a)
	Current Use:	Residential, commercial (Advanced Auto Transport, Inc., Animal Inn pet Resort & Spa, Integrated Life Counseling Center; Ref. 5b)
West	**Historical Use:**	Idea Avenue N, agricultural (Ref. 1a)
	Current Use:	Ideal Avenue N, residential, commercial, agricultural (Ref. 5b)

General type of current or past uses in the surrounding areas: The surrounding area has been used for agricultural purposes since at least 1936. Residences were developed to the north of the Property in the early 1950s, to the west and southeast in the early 1960s, and to the south in the late 1990s (Ref. 1a).

Historical releases associated with adjacent properties or communities: Nearby Superfund sites are being assessed as potential contributing factors to the area wide PFAS contamination, including the Washington County Landfill, located northeast of the Property, and the Oakdale Dump site, located west of the Property. The state has on-going investigations and remedial actions to address the groundwater impacts in the East Metro Area (Ref. 5g). MDH has outlined a special well construction area to reduce exposure risk for PFAS in groundwater (Ref. 5f).

VIII. Site Reconnaissance

The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property (ASTM 1527-13 Sec 9.1). Existing Property features are shown in the Property layout on Figure 2. Photographs obtained during the Property inspection are in Appendix B.

Date of inspection: April 29, 2019

Name of individual conducting site visit: Emily Cook, Barr Engineering Co.

Weather information: 45 degrees Fahrenheit, cloudy

Interior Observations

No structures present on the Property.

Features of Current Property Structure(s)

No structures present on the Property.

Unoccupied occupant spaces: No unoccupied occupant spaces on the Property.

Exterior Observations

Methodology used to observe the Property: The Property was observed on foot. Due to the large area of the Property, representative areas of the Property were observed.

Access to the Property (vehicular access and restrictions to public access): Access to the Property was from public roads.

Periphery of the Property (roads, streets, and parking facilities, etc.): The Property is bordered to the north by residential properties, to the east by residential and commercial properties, to the south by a railroad and a vacant property, and to the east by Ideal Avenue and residential, commercial, and agricultural use.

Ground surface cover (paved, gravel, grass): The ground surface cover at the Property is primarily agricultural fields with residual crop coverage. There are wooded and grassy areas along the perimeter of the fields.

Visible evidence of filling, excavation, or burned areas: A small berm was observed at the drainage ditch in the northern portion of the Property. Small piles of burned debris were observed in the wooded area in the NE corner of the Property.

Visible evidence of vegetative stress: None observed.

Pits, ponds, lagoons, and standing surface water: A pond is located on the east edge of the Property, immediately north of the railroad. Standing water was observed behind the berm and in the drainage ditch in the northern portion of the Property. A stormwater pond is located at the entrance of the Public Works access road.

Stained soil or pavement: None observed.

Wastewater, stormwater, and other visible liquid discharge points into a pipe, pond, ditch, stream adjoining property or the Property: Stormwater discharge was observed from the culvert located at the west edge of the Property near the Public Works access road into the drainage ditch.

Indications of past uses of the Property likely to involve the use, treatment, storage, disposal or generation of hazardous substances or petroleum products: None observed.

Nonpotable/process wells: None observed.

Pipelines across or into Property: A gas pipeline runs through the Property along Ideal Avenue at the west Property boundary. Markers, pipeline access points, and above ground pipeline features were observed. A petroleum pipeline runs through the Property from the NE corner to the SE corner of the Property. Pipeline markers were observed at multiple locations on the Property.

Rail lines: A rail line runs east-west through the Property

Transformers: A transformer tower was observed in the northern portion of the Property.

Outdoor Chemical Storage Areas/Drums: None observed.

Underground Utility Locations: Underground utilities, including gas, fiber optic and electric, are generally located on the west edge of the parcel, along Ideal Ave. Water utilities and a hydrant are located on the south side of 34th St, across from Public Works.

Odors: None observed.

Evidence of Use, Production or Disposal of Controlled Substances (as defined by 21 CFR Part 802): None observed.

VIII. Interior and Exterior USTs and ASTs

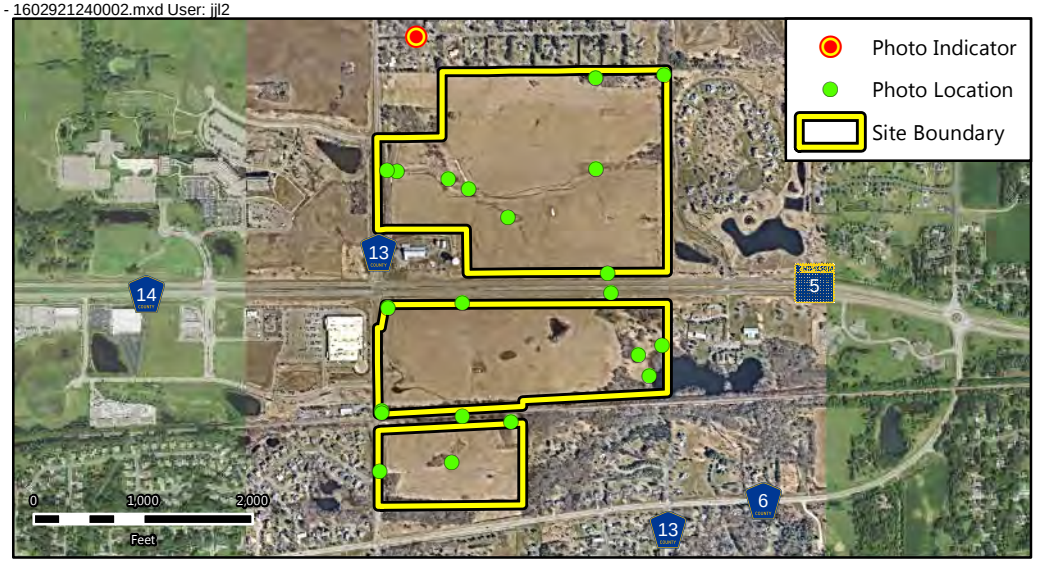
None observed.

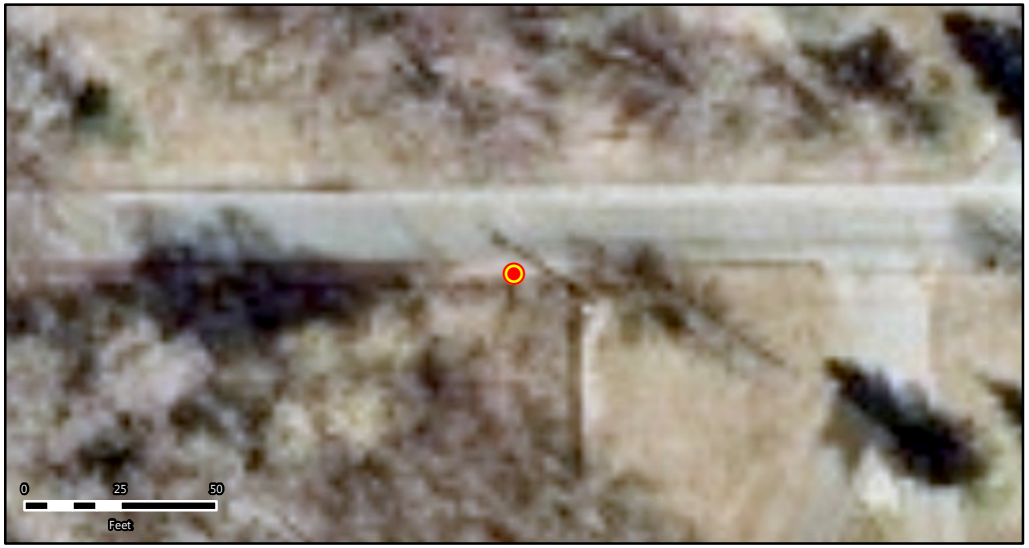
IX. Interviews

The objective of interviews is to obtain information indicating recognized environmental condition in connection with the property (ASTM 1527-13 Sec 10.1). Especially relevant information from the interviews (Refs. 4a, 4b, 4c) is included and documented throughout the Assessment report and Appendix A.

Appendix B

Property Inspection Photographs





Map 1 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

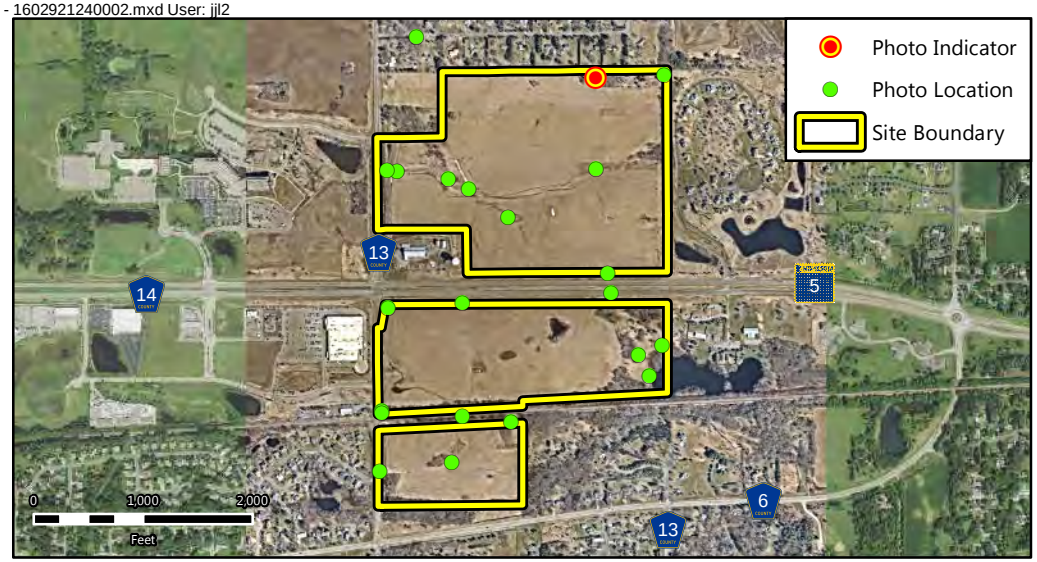
Lake Elmo, MN

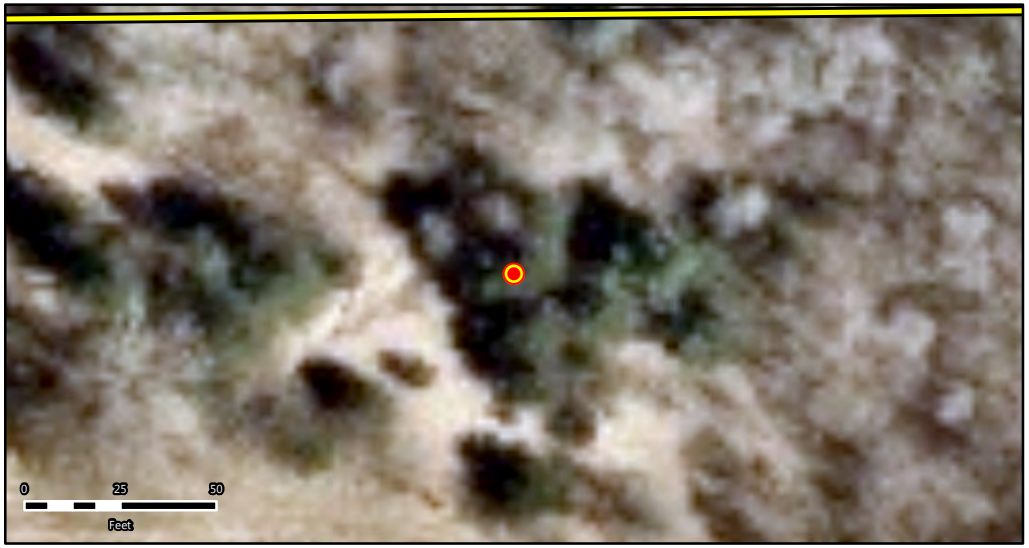
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Petroleum pipeline markers to the north of property on residential street





Map 2 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

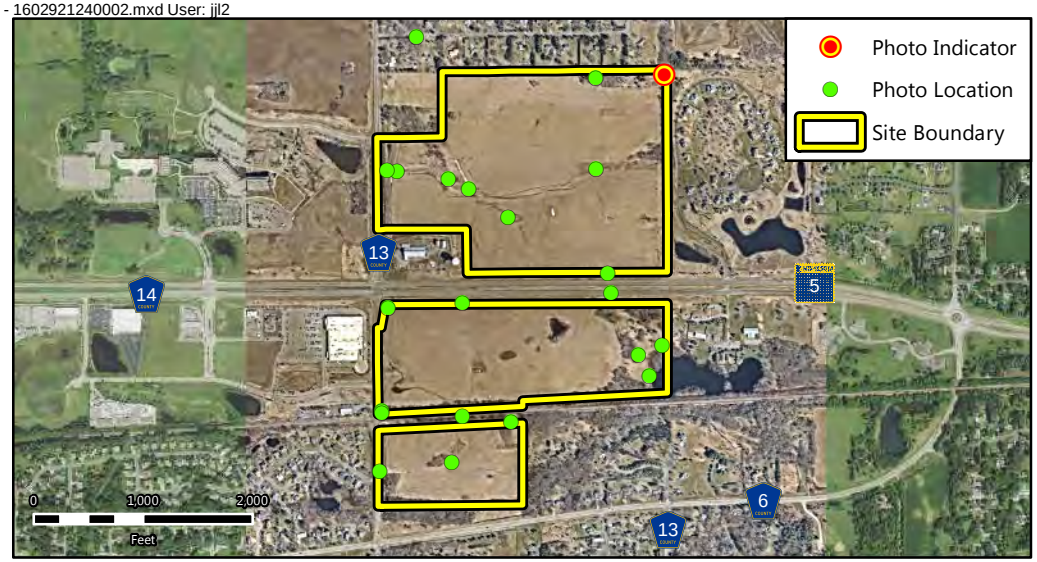
Lake Elmo, MN

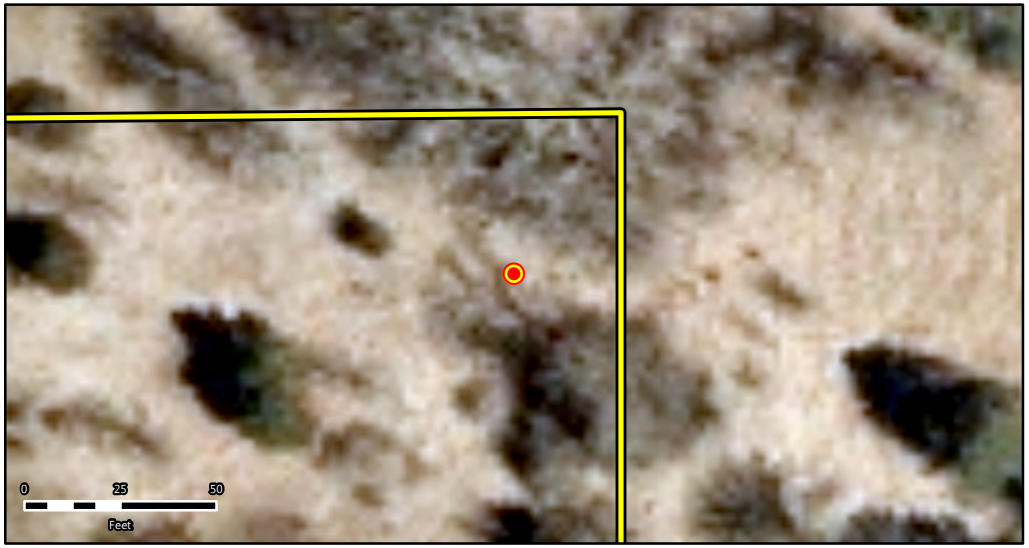
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: NE edge of property, wooded area, debris, small piles of burned material





Map 3 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

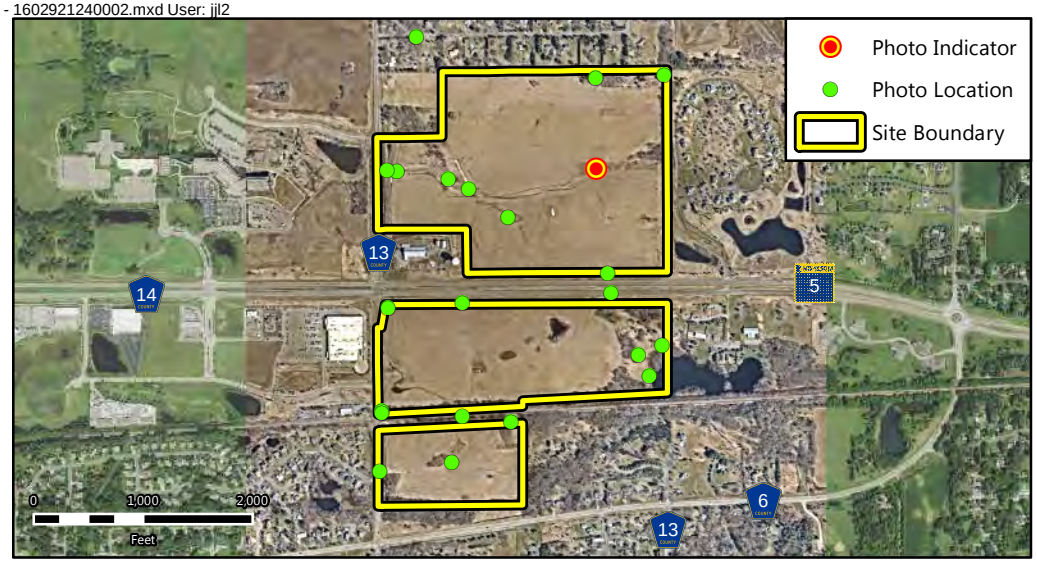
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: NE corner of property, wooded area, cinder block pile, wood debris



Map 4 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

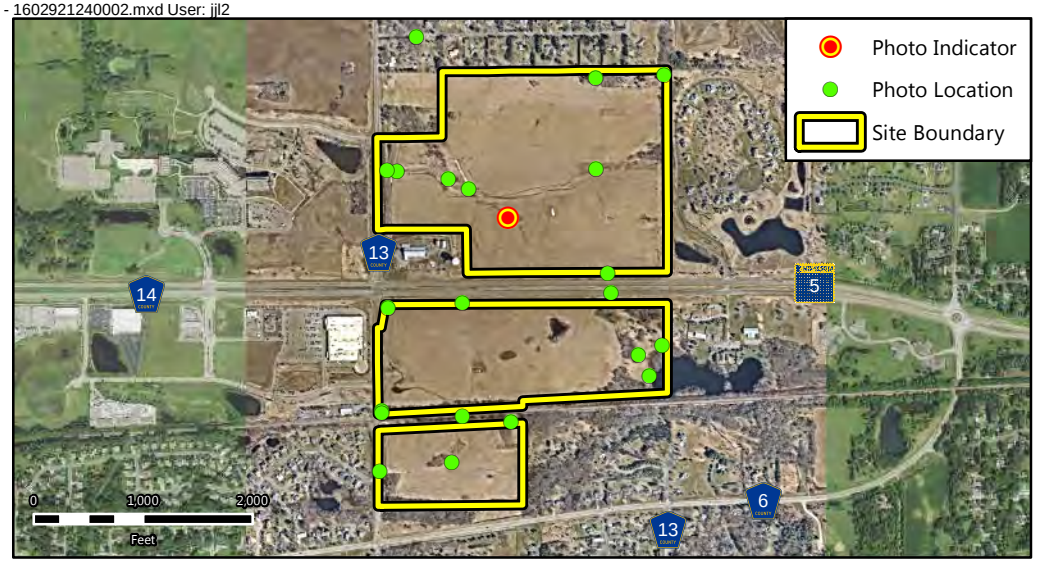
Lake Elmo, MN

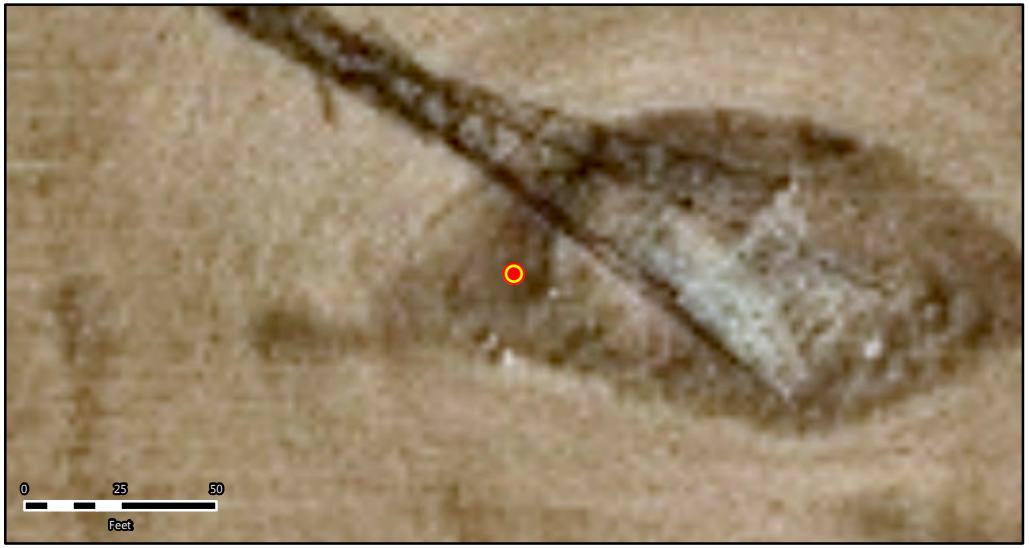
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Debris





Map 5 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

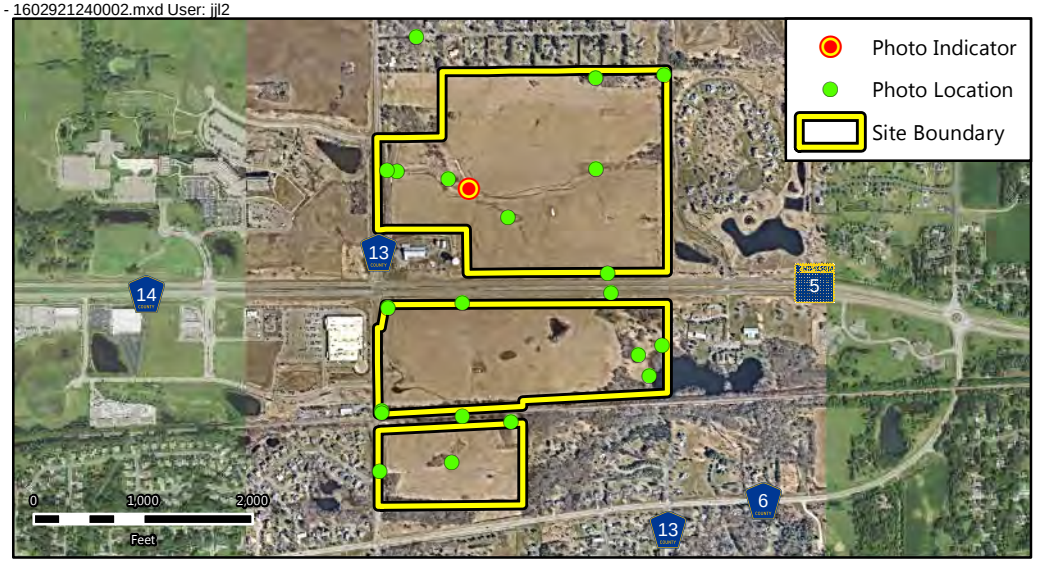
Lake Elmo, MN

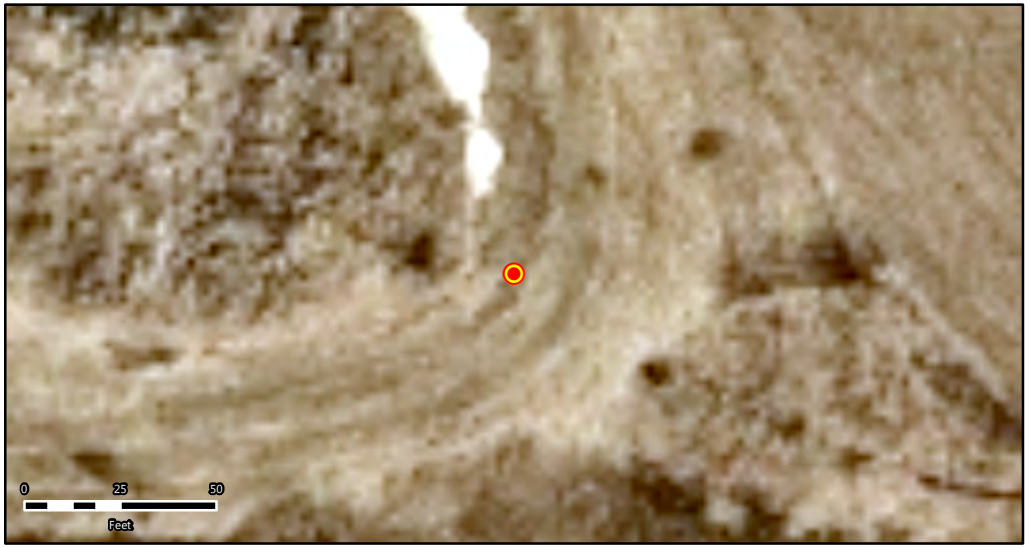
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Transmission tower, overhead lines run to the south and to the east, debris at base (planting pots, empty paint can, fry cooker)





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

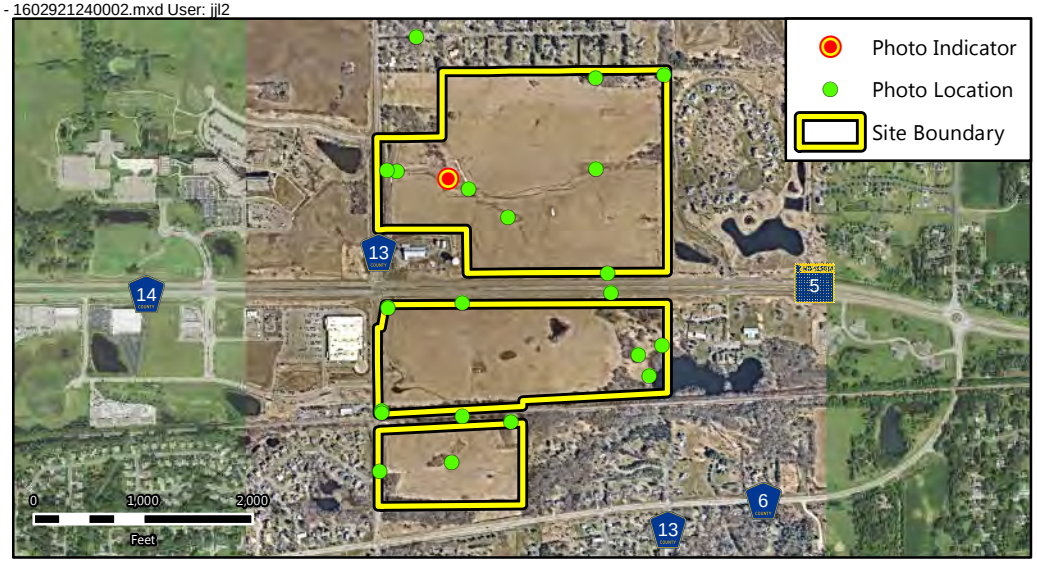
Lake Elmo, MN

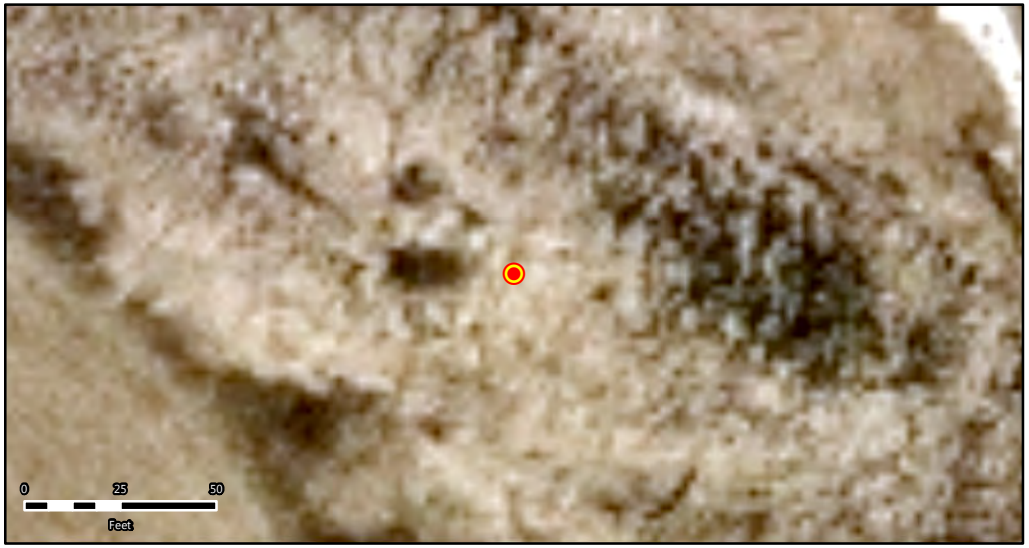
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Culvert, drainage ditch flowing east





Map 7 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

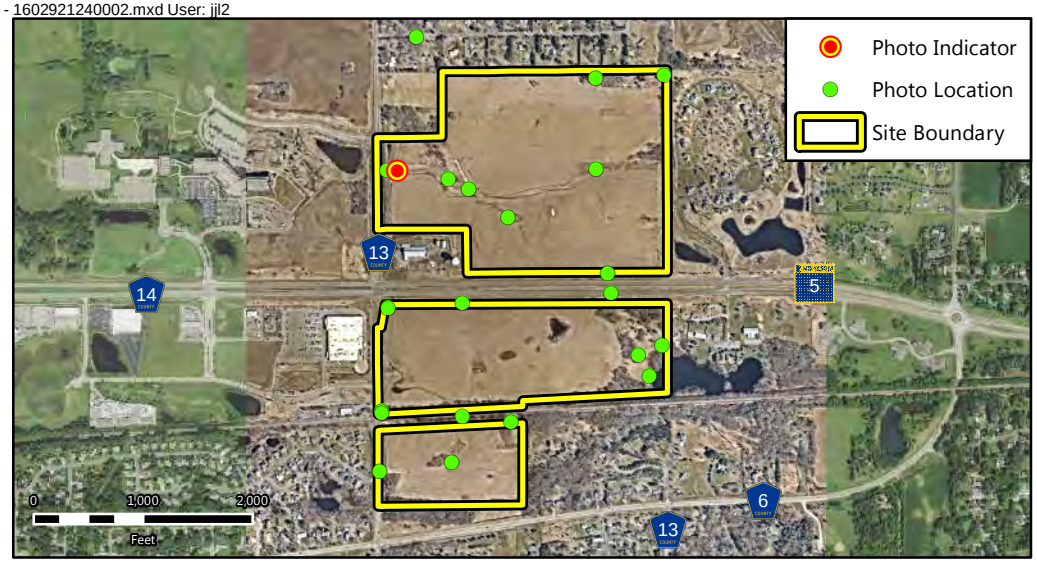
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Low spot/ swamp, surrounded by berm



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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

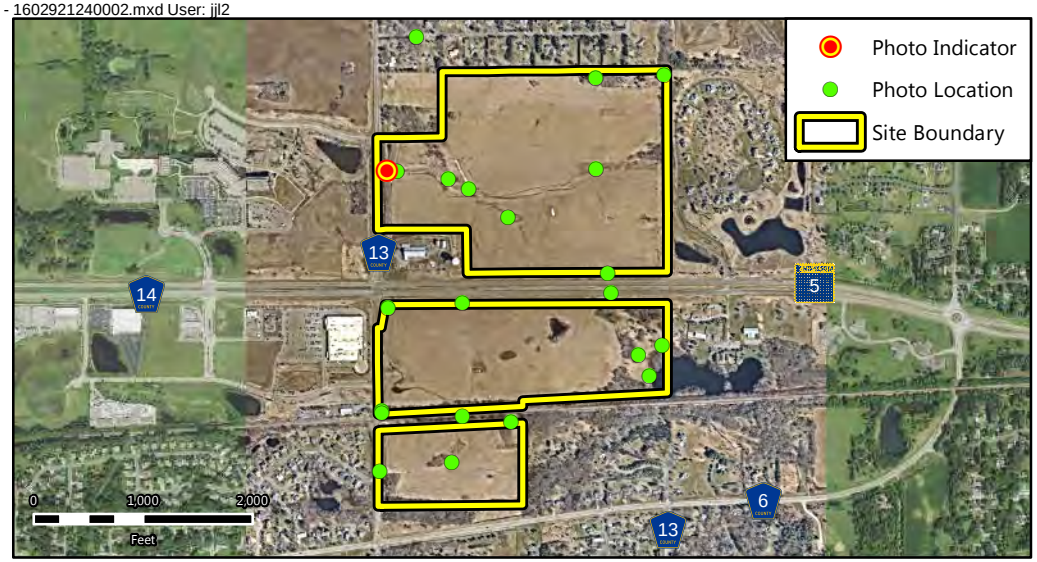
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Culvert, drainage ditch



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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

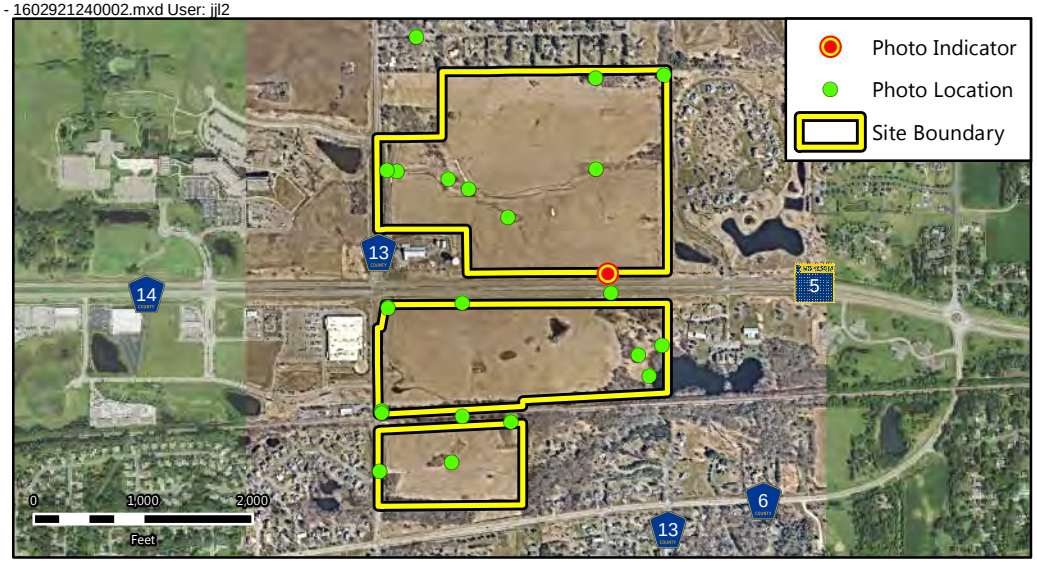
Lake Elmo, MN

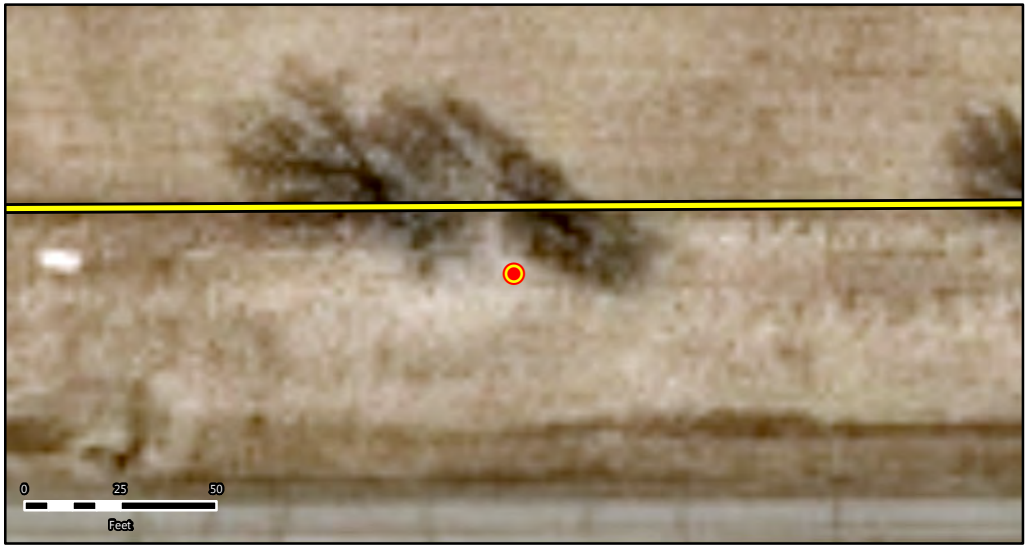
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Utilities along Ideal Ave and public works roadway (gas pipeline flags, fiber optics marker, electrical, sanitary sewer)





Map 10 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

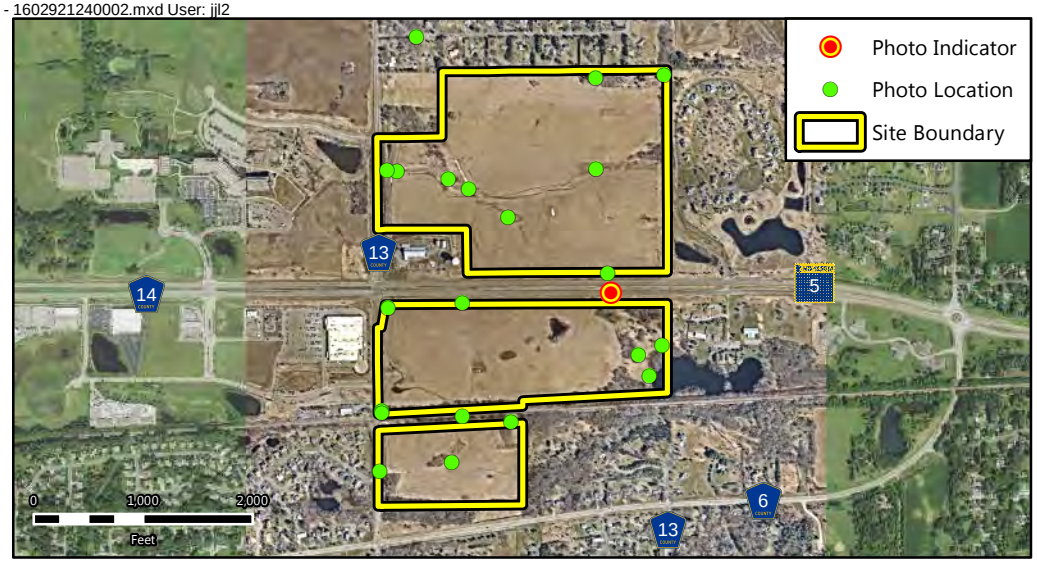
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Petroleum pipeline markers near property boundary, north of 34th



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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

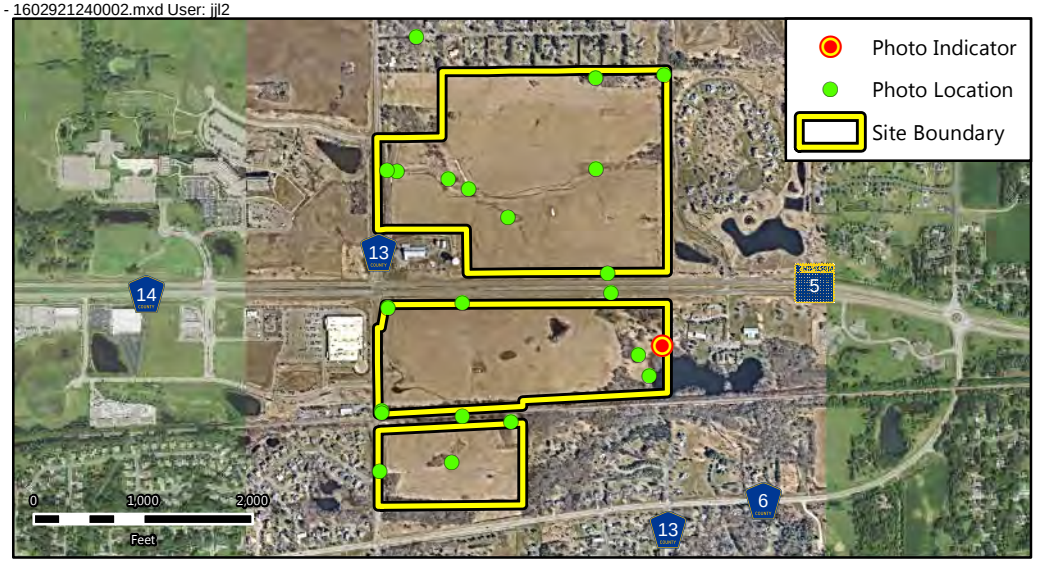
Lake Elmo, MN

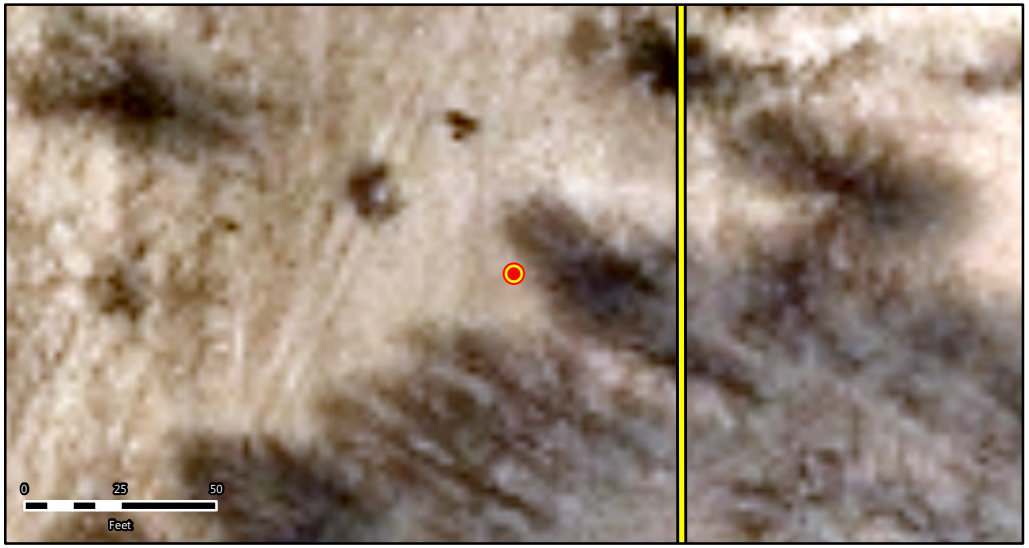
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Petroleum pipeline markers near property boundary, south of 34th





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

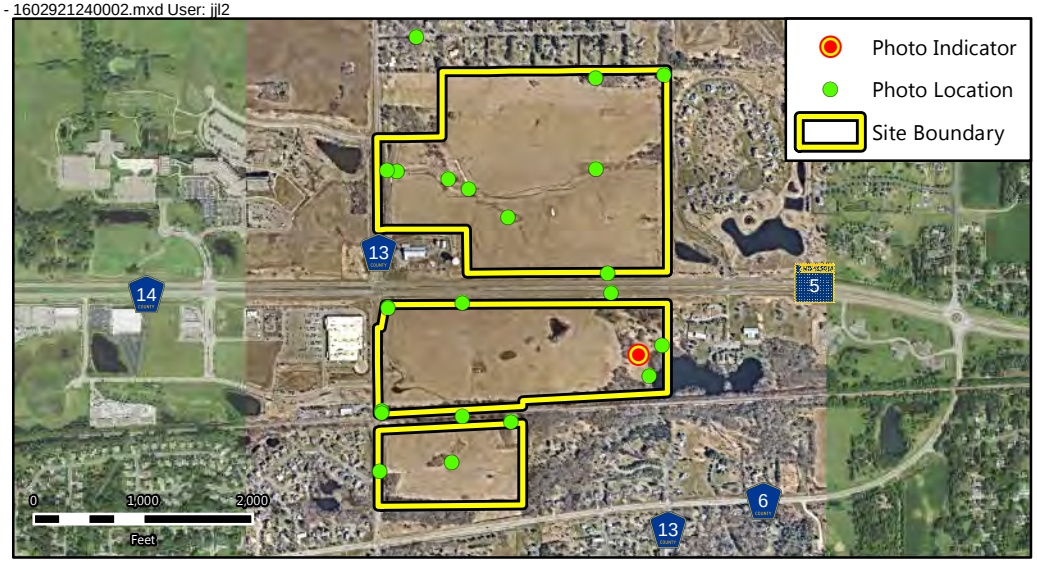
Lake Elmo, MN

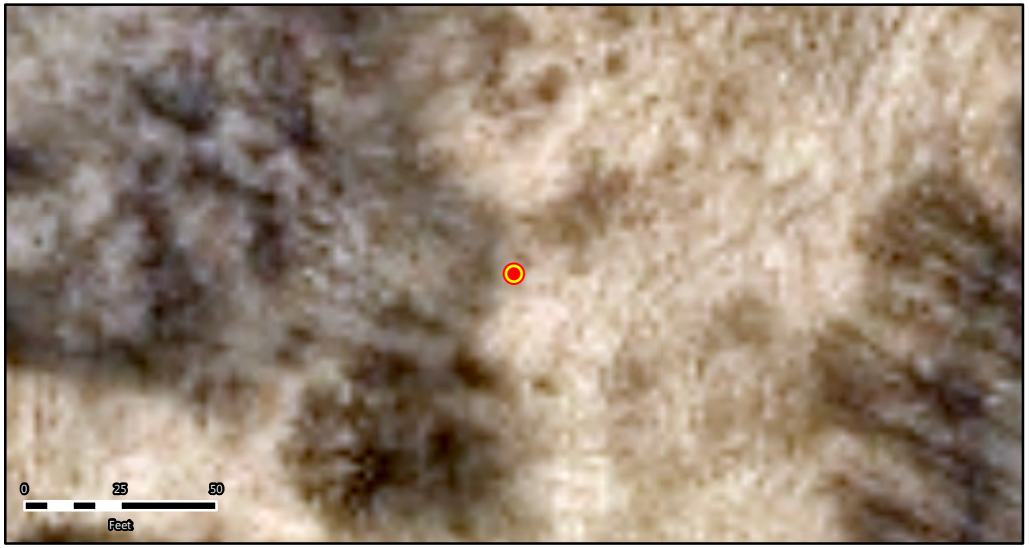
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Wood and debris pile on east property edge





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

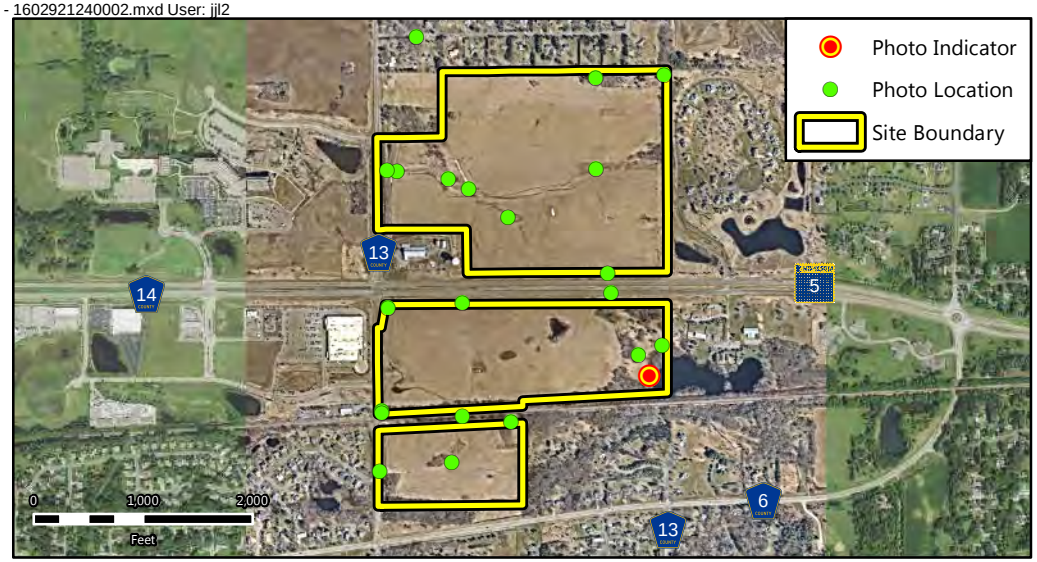
Lake Elmo, MN

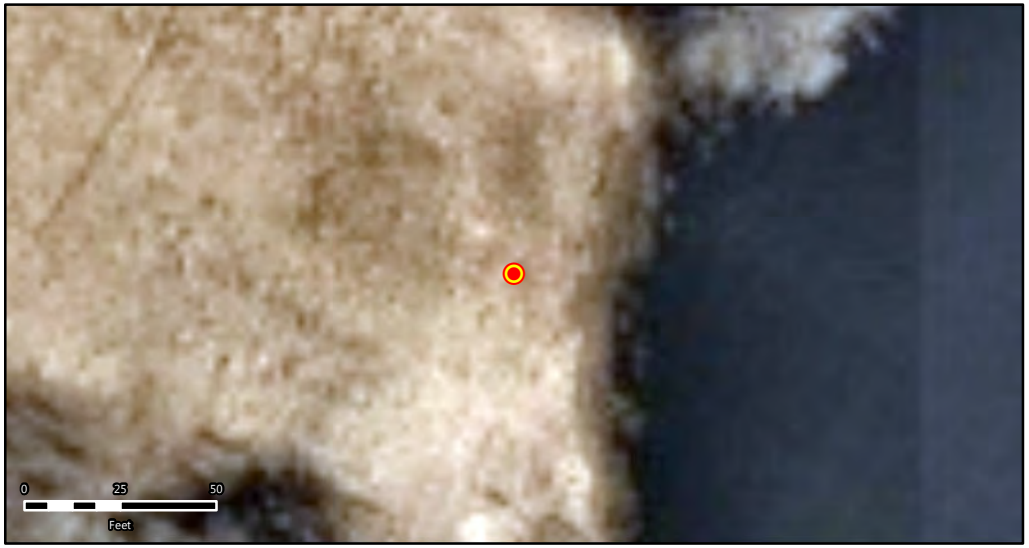
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Petroleum pipeline marker





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

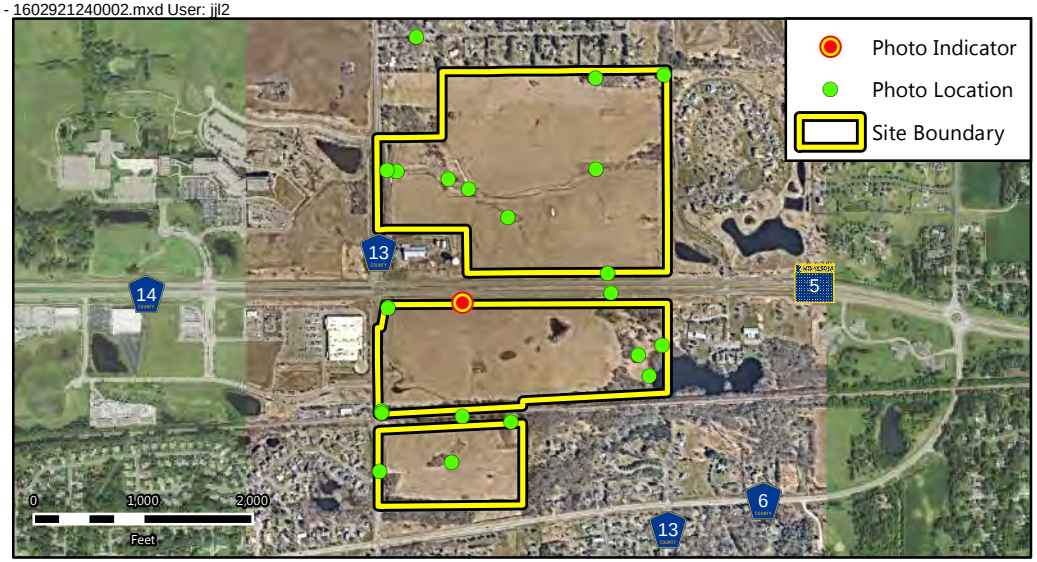
Lake Elmo, MN

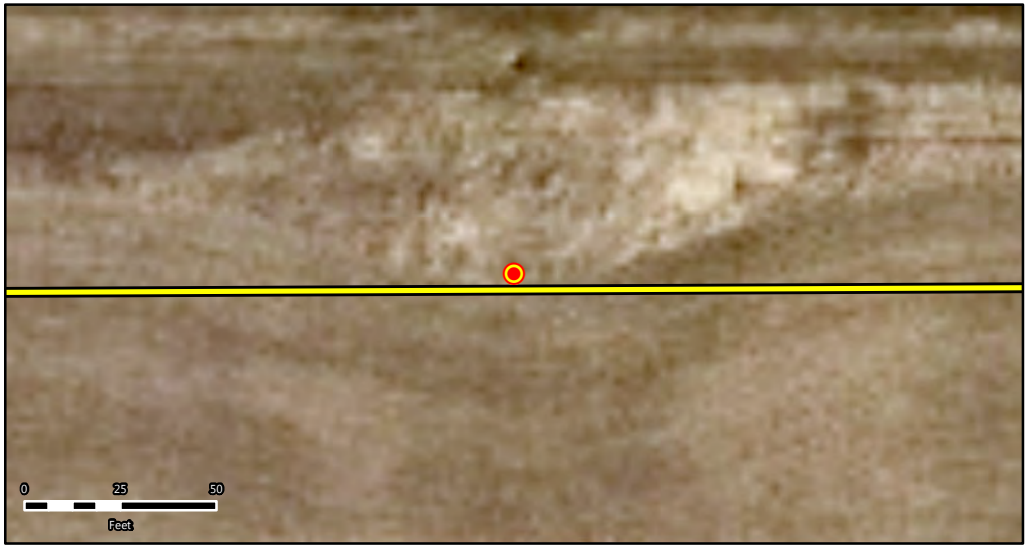
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Low spot, ponded water, petroleum pipeline continues to railroad to the south





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

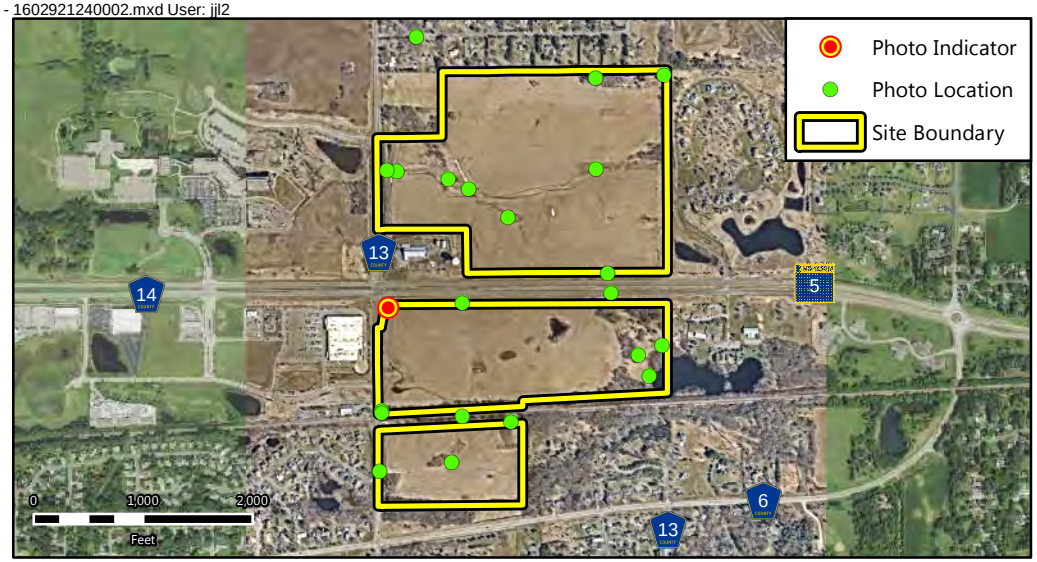
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Water utility, hydrant and gate valve markers near property boundary along 34th



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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

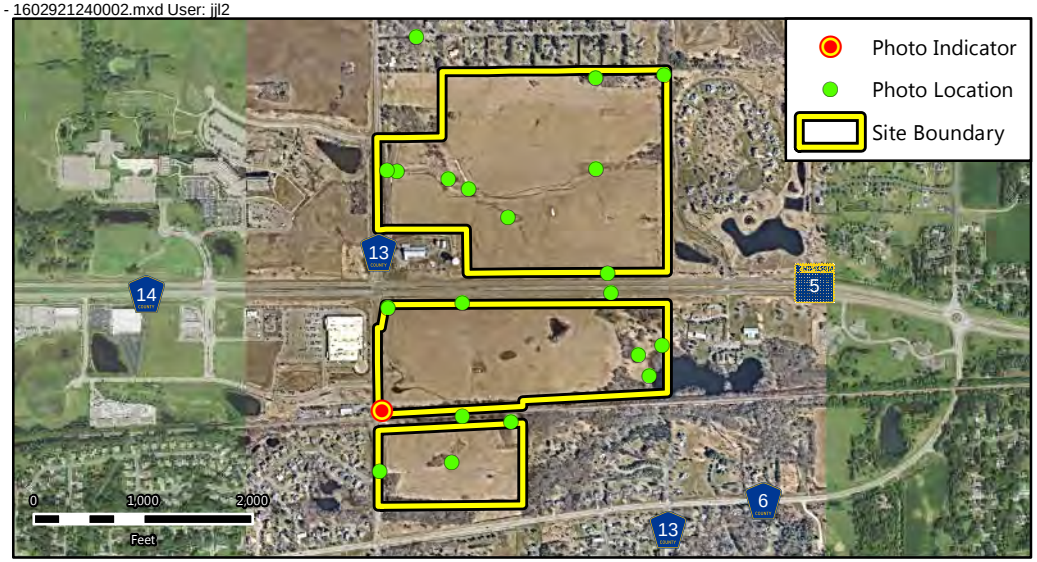
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Property at corner of Ideal Ave and 34th, views south and east, typical agricultural use on property



Map 17 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

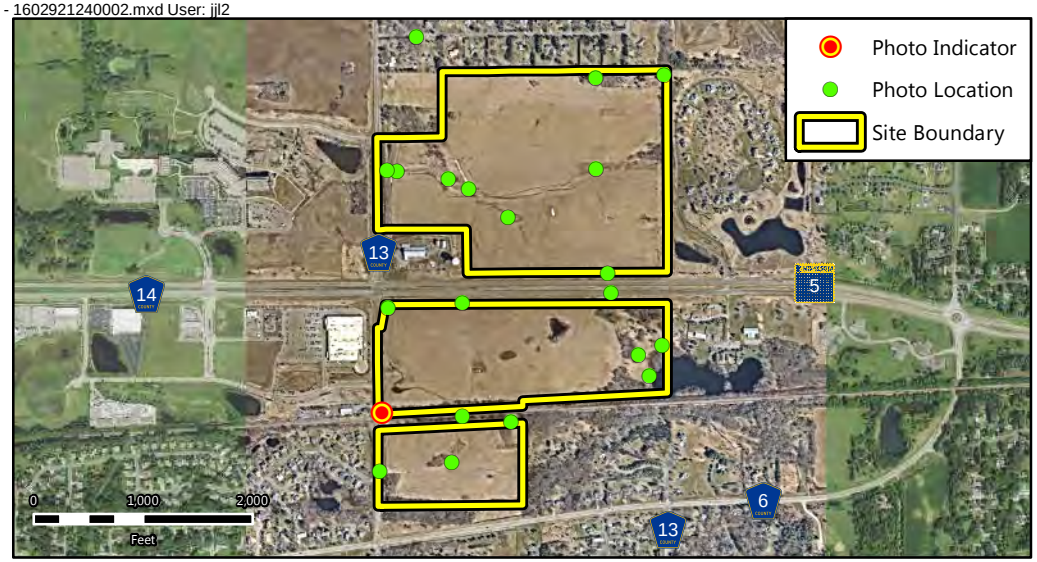
Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Gas pipeline above ground equipment



Map 18 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

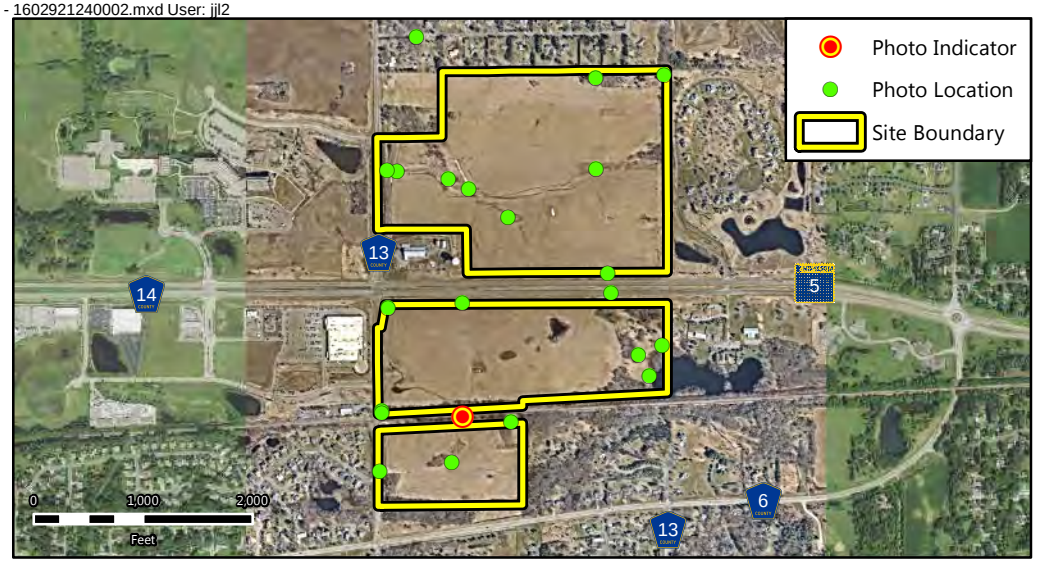
Lake Elmo, MN

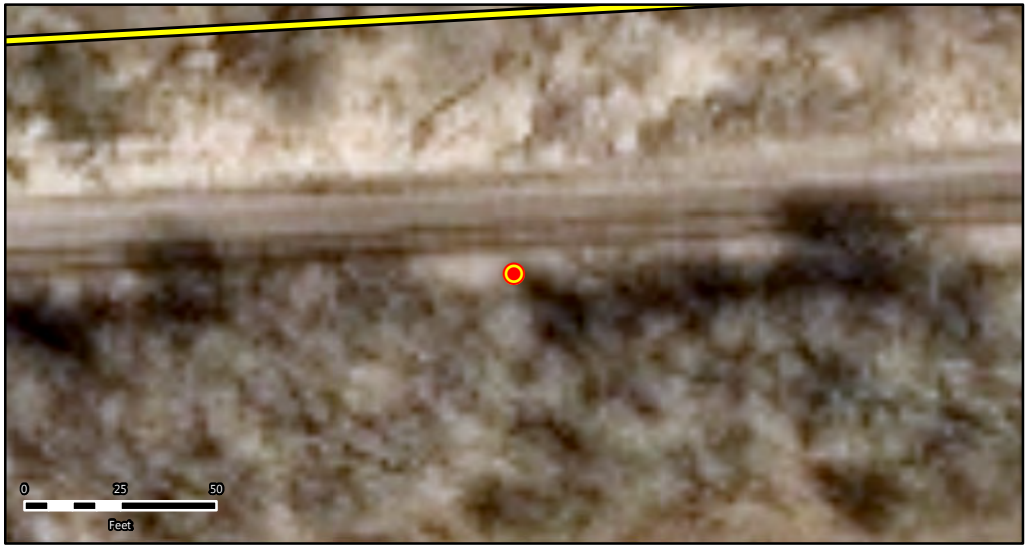
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Railroad and above ground equipment between south and middle sections of property





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

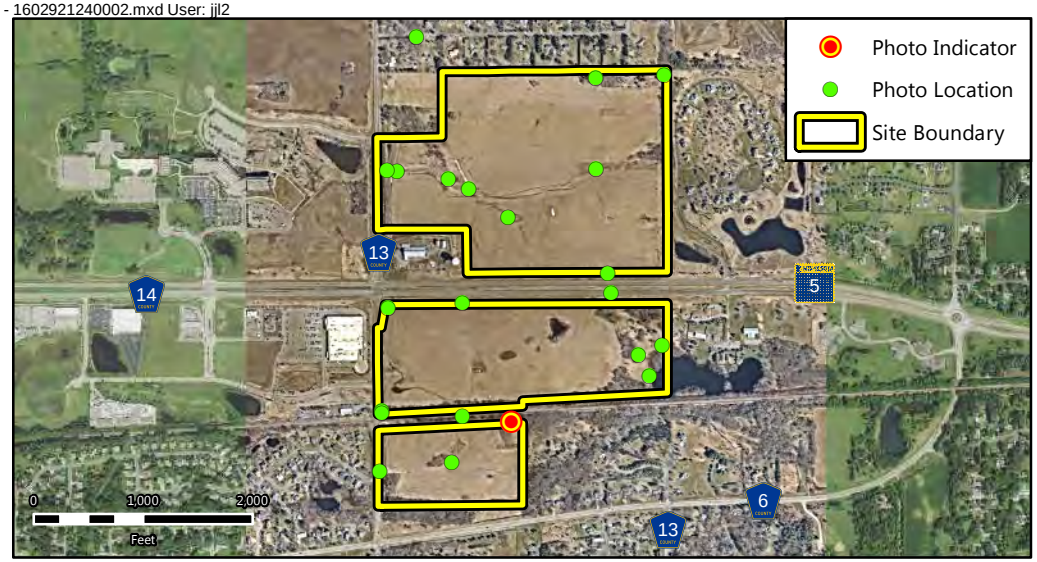
Lake Elmo, MN

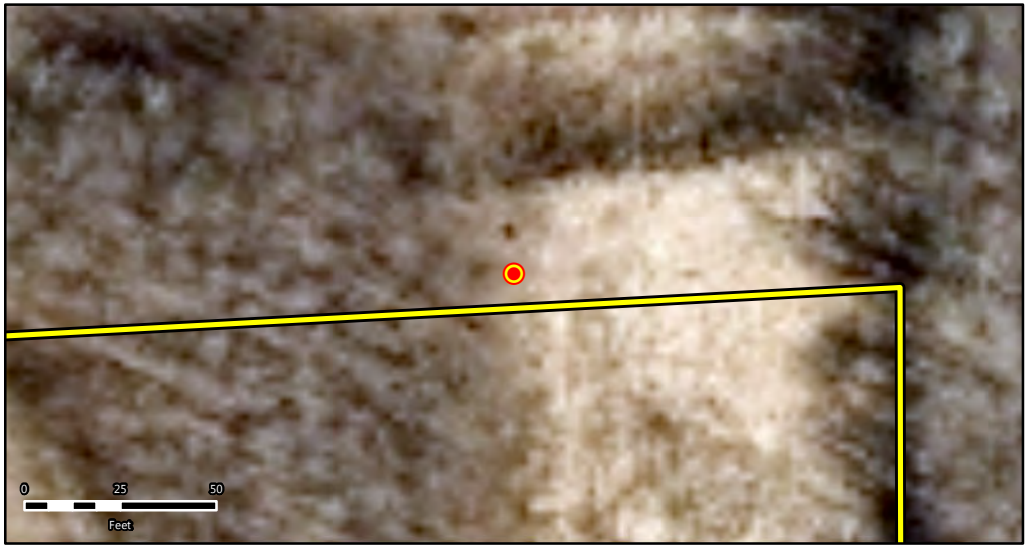
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Railroad tracks through property, tracks run east-west





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PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

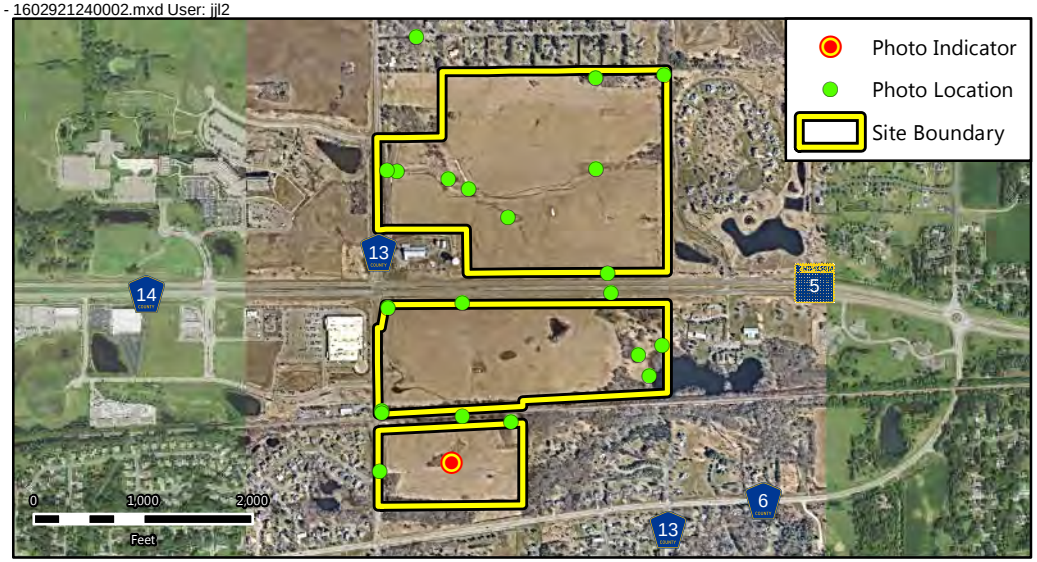
Lake Elmo, MN

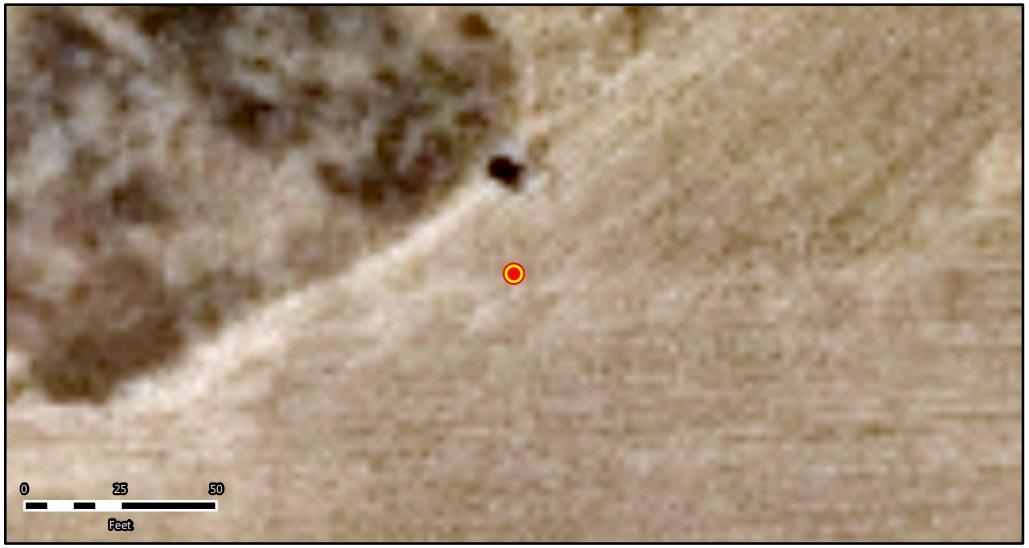
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Watering tank





Map 21 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

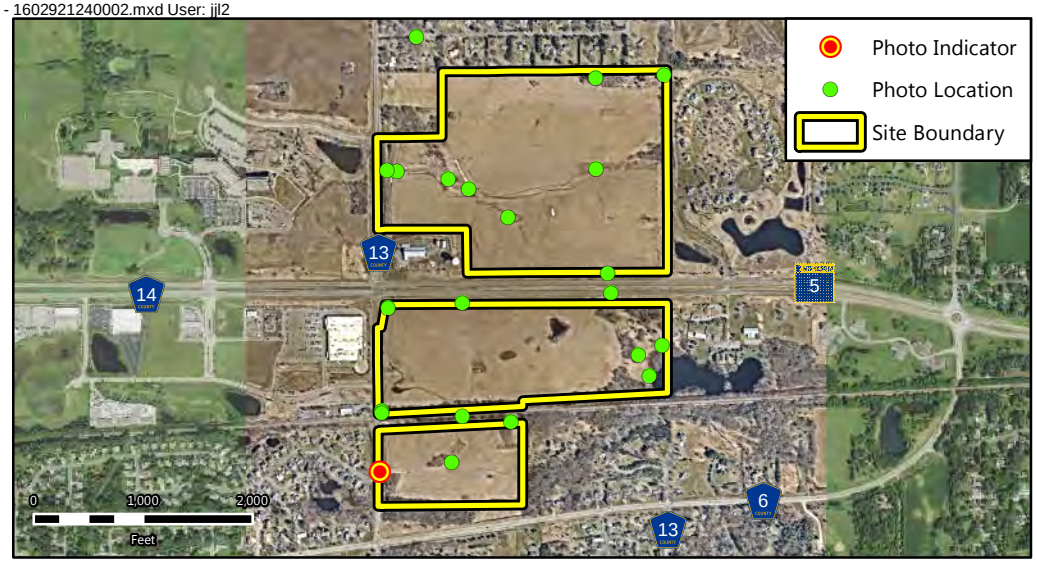
Lake Elmo, MN

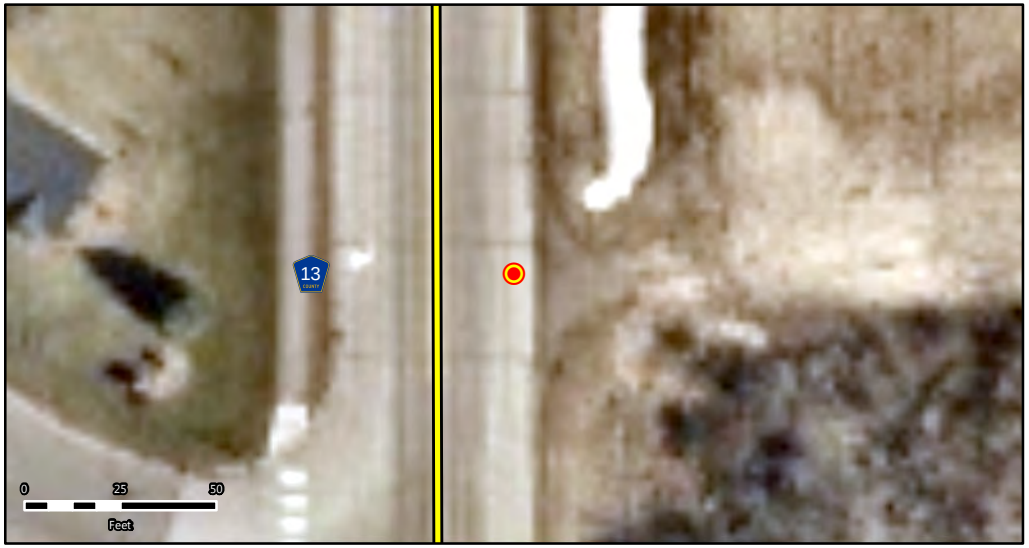
N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Hunting blind and feeders in field





Map 22 of 22

PROPERTY INSPECTION PHOTOGRAPHS

Parcel ID 1602921240002

Lake Elmo, MN

N

Imagery: NearMap (April 19, 2019)

Date: 4/29/2019

Comment: Gas pipeline access

Cyphers Logistic Park

FINAL Alternative Urban Areawide Review

March 2022

Prepared for:

NorthPoint DEVELOPMENT

Prepared by:

Kimley»Horn

Table of Contents

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July 2013 Version

Alternative Urban Areawide Review

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at: http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm. This EAW form is being used to delineate the issues and analyses to be reviewed in an Alternative Urban Areawide Review (AUAR). 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

Cyphers Logistic Park

2. Proposer

Proposer: NorthPoint Development
Contact Person: Christina Hubacek
Title: Project Manager
Address: 3010 Highland Parkway, Suite 440
City, State, ZIP: Downers Grove, IL 60515
Phone: 331-251-3111
Email: chubacek@northpointkc.com

3. RGU

RGU: City of Lake Elmo
Contact Person: Kristina Handt
Title: City Administrator
Address: 3880 Laverne Avenue N, Suite 100
City, State, ZIP: Lake Elmo, MN 55042
Phone: 651-747-3905
Email: khandt@lakeelmo.org

4. Reason for EAW Preparation

AUAR Guidance: Not applicable to an AUAR.

5. Project Location

County: Washington County
City/Township: Lake Elmo
PLS Location (¼, ¼, Section, Township, Range): NE ¼ and SE ¼ of Section 16, Township 29N, Range 21W and NW ¼ of Section 21, Township 29N, Range 21W
Watershed (81 major watershed scale): Lower St. Croix River
GPS Coordinates: 44° 59' 55.0" N, 92° 56' 23.1" W
Tax Parcel Number(s): 1602921230003, 1602921240002, and 1602921320001
At a minimum, attach each of the following to the AUAR:

- **A map clearly depicting the boundaries of the AUAR and any subdistricts used in the AUAR analysis** (See Figure 1 and Figure 3 through Figure 5)
- **US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries** (see Figure 2)
- **A cover type map as required for Item 7** (See Figure 7)
- **Land use and planning and zoning maps as required in conjunction with Item 9** (see Figure 9 and Figure 10)

Figure 1: AUAR Study Area

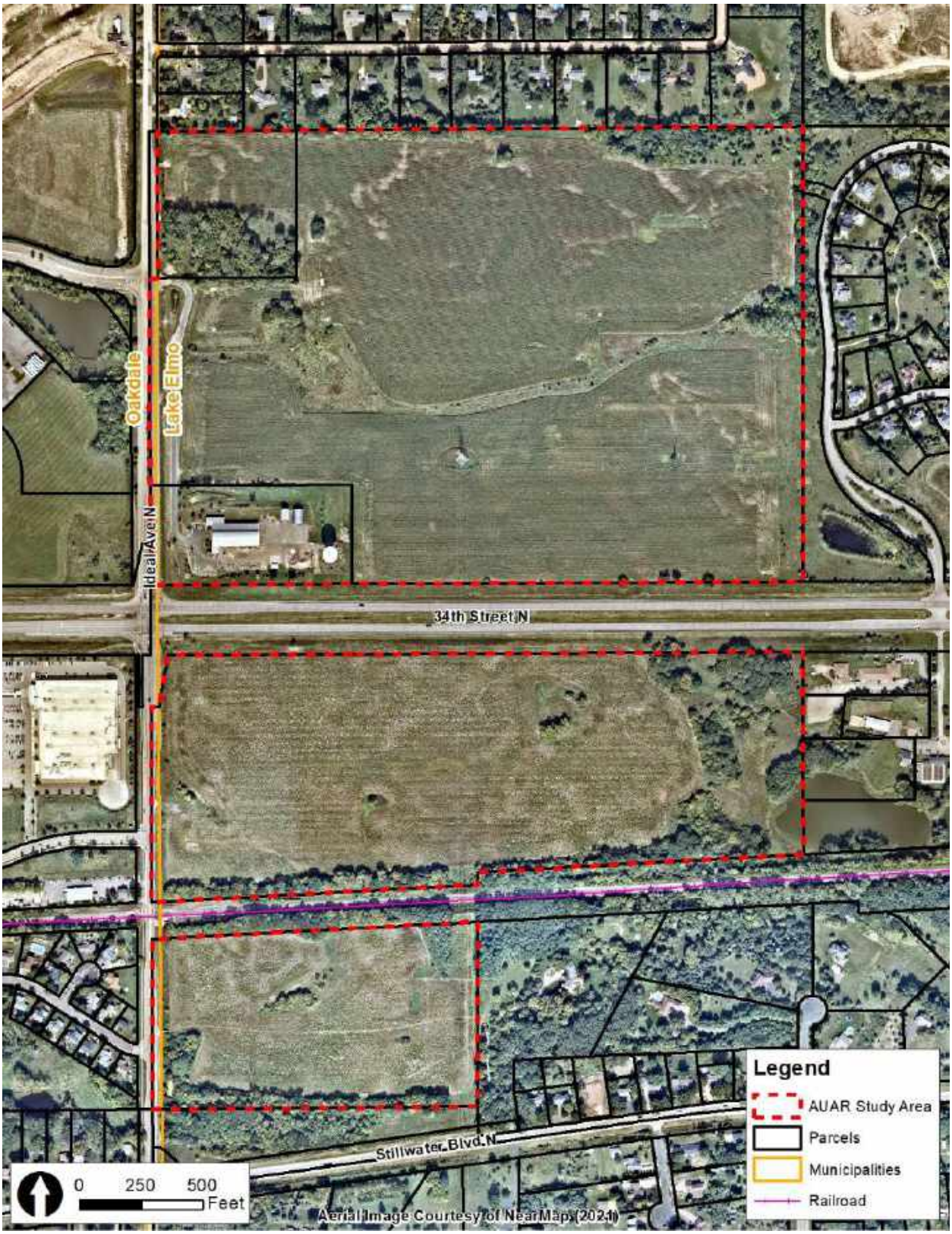
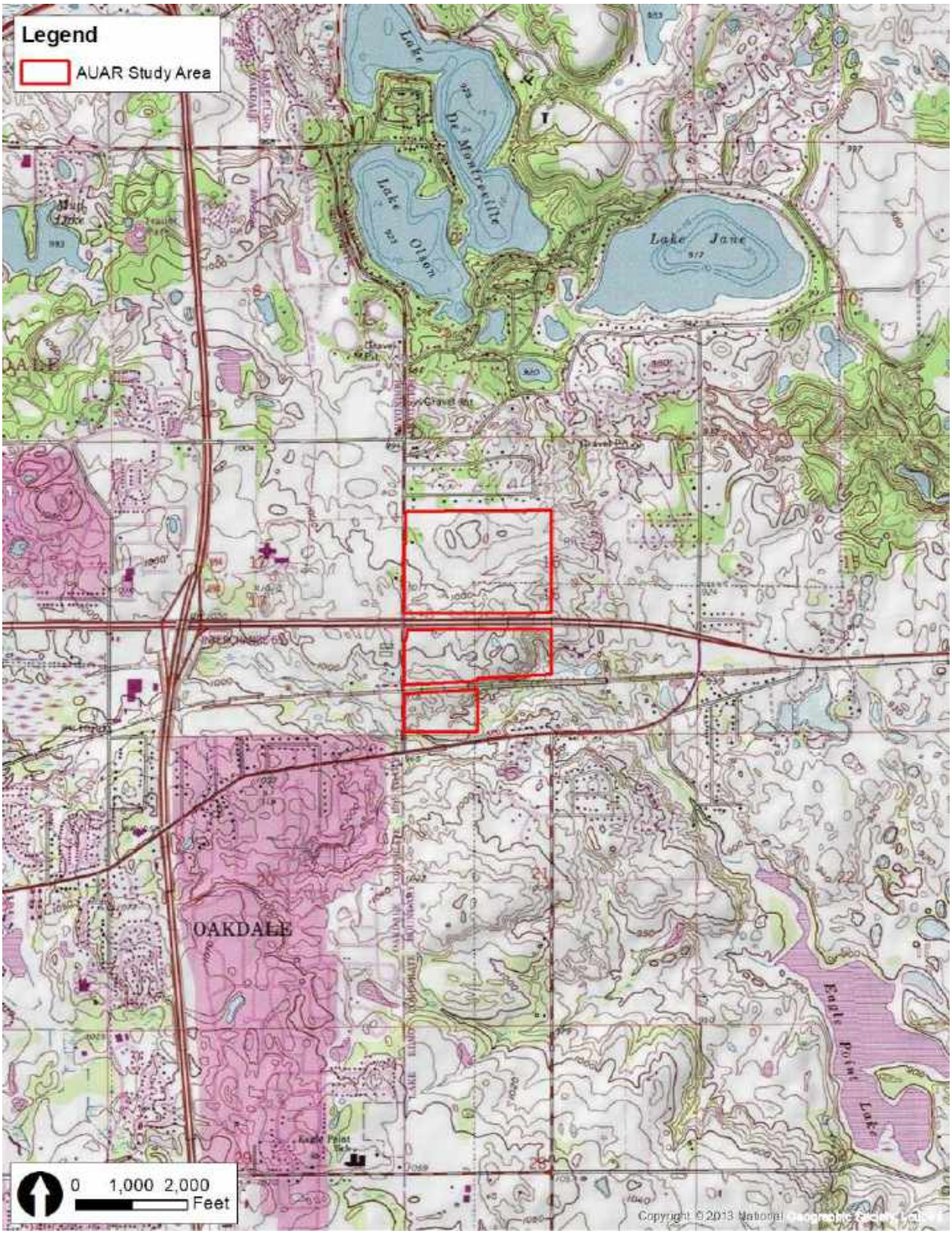


Figure 2: USGS Map



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*

Important Note: Every AUAR document MUST review one or more development scenarios based on and consistent with the RGU's Comprehensive Plan in effect when the AUAR is officially ordered. (This is equivalent to reviewing the "no-build" alternative in an EIS.) If an RGU expects to amend its existing Comprehensive Plan, it has the options of deferring the start of the AUAR until after adopting the amended plan or reviewing developments based on both the existing and amended comprehensive plans; however, it cannot review only a development based on an expected amendment to the existing plan. Also, the rules require that one or more development scenarios analyzed must be consistent with known development plans of property owners within the AUAR area.

The AUAR study area encompasses approximately 190 acres on three existing tax parcels in the City of Lake Elmo. Approximately 180-acres of the AUAR study area was recently acquired by the City of Lake Elmo as part of a settlement with 3M for the Polyfluoroalkyl Substances (PFAS) contamination that affects the groundwater in this region. When the City acquired the AUAR study area as part of the 3M Settlement, it anticipated that any future development would require the extension of municipal services given the groundwater contamination. The AUAR study area is located east of I-694 and is bordered to the west by the City of Oakdale at Ideal Avenue N (CSAH 13). The AUAR study area is bisected east-west by 34th Street N (CSAH 14). Within the AUAR study area, approximately 110 acres lie north, and 80 acres lie south of the 34th Street N right-of-way. The existing land use within the AUAR study area is predominantly agricultural, with approximately 7.4 acres used for the City's public works building and municipal elevated water storage tower located northeast of the 34th Street N and Ideal Ave N intersection.

Four development scenarios are proposed for evaluation in the AUAR (described in Table 1). The existing public works building is included in all the scenarios, but it is not planned for further development or redevelopment; however, since it is connected to the roadway system and may eventually be served by municipal sewer, it is prudent to include it within this evaluation. In 2020 the City completed a Master Plan process to evaluate the desired land uses within the AUAR study area as a result of the 3M settlement process. Scenarios 1, 2, and 3 are generally consistent with the land use patterns and densities evaluated within the Master Plan process but are not consistent with the adopted 2040 Future Land Use Plan adopted in the Comprehensive Plan. Scenario 4 is consistent with the Comprehensive Plan as required by this AUAR process, but is considered the no-build scenario since it does not include the extension of municipal services to the AUAR study area north of 34th Street N.

The intent of the AUAR is to evaluate scenarios that identify the greatest potential impact and to evaluate the development potential given the existing Comprehensive Plan. All development scenarios must identify the mitigation measures that may be taken to compensate for any identified impacts.

Development Scenario 1:

Development Scenario 1 land uses includes business park, mixed-use business park, commercial, existing public works, park, ponding, and right-of-way (see Figure 3).

Development Scenario 2:

Development Scenario 2 land uses includes business park, mixed-use business park, commercial, low density residential, medium density residential, existing public works, park, ponding, and right-of-way (see Figure 4).

Development Scenario 3:

Development Scenario 3 land uses includes business park, commercial, low density residential, public works, park, ponding, and right-of-way (see Figure 5).

Development Scenario 4:

Development Scenario 4 land uses includes agricultural, rural residential, public works, and business park. This scenario is consistent with the adopted Comprehensive Plan (see Figure 6).

Scenario 1, Scenario 2, and Scenario 3

Scenarios 1, 2, and 3 evaluate the same anticipated development of the AUAR study area lying south of 34th Street N, which is the area the project proposer plans to develop. Construction of the parcels south of 34th Street N is anticipated to begin in 2022 and be built over two phases with construction complete by 2024. The AUAR study area lying north of 34th Street N will be developed later and there are no known development plans. To account for the unknown plans for the north area, different land use patterns with varying densities are evaluated in Scenarios 1, 2 and 3 and are based on the City's completed Master Plan process. Roadway infrastructure supporting Scenarios 1, 2, and 3 includes access from 34th Street N and Ideal Avenue N. The scenario plans identify three access points into the area south of 34th Street N and two access points into the northern portion of the study area. The AUAR study area will be connected to the public municipal water and regional sanitary sewer systems. Stormwater management will be provided locally onsite as part of any development.

Scenario 4

Scenario 4 is consistent with the 2040 Comprehensive Plan which permits the development of the parcels south of 34th Street N for Business Park uses and the parcels north of 34th Street N for rural residential uses, continued agriculture, and the public works facility.

Table 1: Development Scenarios

Land Use	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Business Park	~1.1 million square feet	~1.1 million square feet	~2.2 million square feet	~1.1 million square feet
Mixed-Use Business Park	400 residential units 653,400 square feet business/light industrial	210 residential units 457,380 square feet business/light industrial	--	--
Commercial	91,500 square feet	178,596 square feet	91,500 square feet	--
Rural Area Development (Residential)				10 residential units
Low Density Residential	--	56 residential units	56 residential units	--
Medium Density Residential	--	124 residential units	--	--
Existing Public Works Building	7.4 acres	7.4 acres	7.4 acres	7.4
Park	8 acres	8 acres	8 acres	0 acres
Ponding	15 acres	15 acres	15 acres	0 acres
Right-of-Way	6 acres	6 acres	6 acres	6 acres

Figure 3: Development Scenario 1

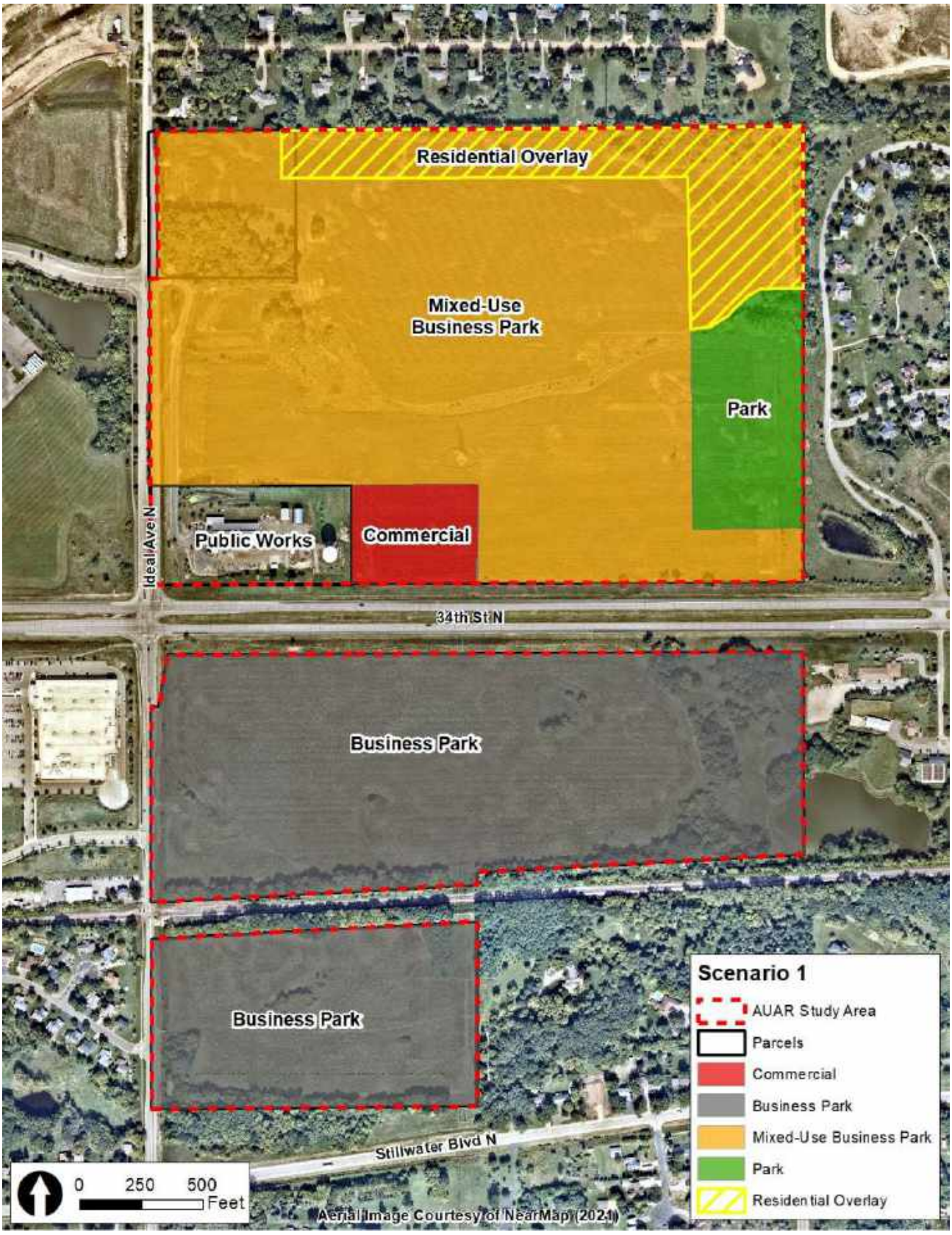


Figure 4: Development Scenario 2

Figure 5: Development Scenario 3

Figure 6: Development Scenario 4

7. Cover Types

AUAR Guidance: The following information should be provided:

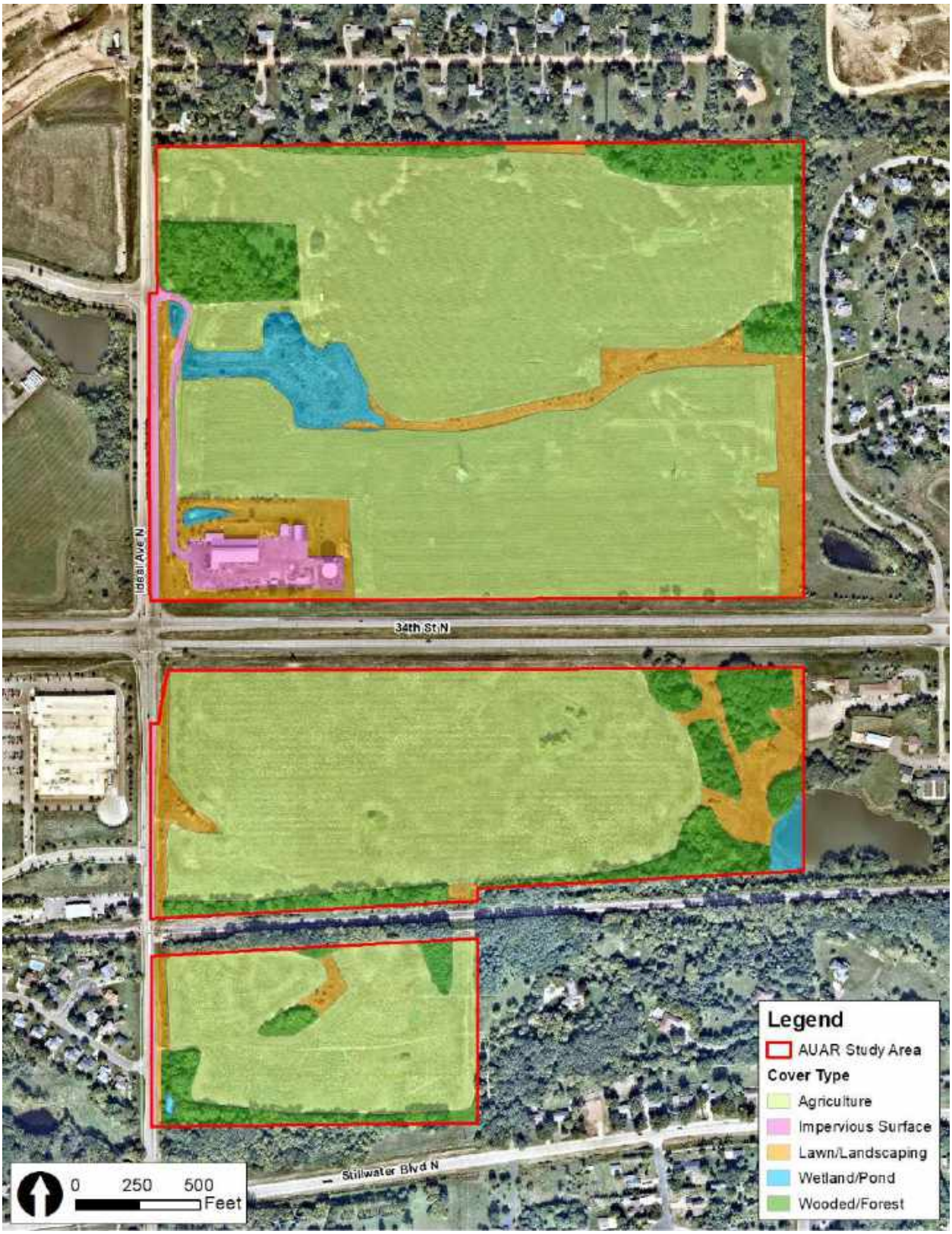
- *A cover type map, at least at the scale of a USGS topographic map, depicting:*
  - *Wetlands (identified by Circular 39 type)*
  - *Watercourses (rivers, streams, creeks, ditches)*
  - *Lakes (identify public waters status and shoreland management classification)*
  - *Woodlands (break down by classes 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 covers approximately 190 acres of predominantly agricultural land. Approximately 7.4 acres is partially developed with the Lake Elmo Public Works building at the northeast intersection of Ideal Avenue N and 34th Street N. Existing cover types within the AUAR study area are listed in Table 2 and shown on Figure 7 and were determined by reviewing aerial photography and land cover classification maps. The National Wetland Inventory identifies five freshwater emergent wetlands and three freshwater ponds within the AUAR study area.

Table 2: Cover Types

Cover Type	Existing (acres)	Scenario 1 (acres)	Scenario 2 (acres)	Scenario 3 (acres)	Scenario 4 (acres)
Agriculture	139.0	0.0	0.0	0.0	0.0
Wooded/Forest	21.3	0.0	0.0	0.0	9.9
Lawn/Landscaping	16.8	62.0	64.2	54.2	115.1
Impervious Surface	5.4	105.2	103.0	113.0	54.5
Wetland/Pond	5.2	20.5	20.5	20.5	8.2
Total	**187.7**	**187.7**	**187.7**	**187.7**	**187.7**

Figure 7: Existing Cover Type Map



8. 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 3: Permits and Approvals Required

Unit of Government	Type of Application	Status
Federal		
U.S. Army Corps of Engineers	Section 404	To be applied for, if applicable
State		
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System Stormwater Permit for Construction Activities	To be applied for
	Sanitary Sewer Extension Permit	To be applied for
	Section 401 Water Quality Certification	To be applied for, if applicable
	Construction Contingency Plan and Response Action Plan approval	To be applied for
Minnesota Department of Natural Resources	Temporary Water Appropriation Permit for Construction Dewatering	To be applied for, if applicable
Regional		
Metropolitan Council	Sewer Extension Permit	To be applied for
Valley Branch Watershed District	Watershed District Permit	To be applied for
	Wetland Conservation Act (WCA) Replacement Plan	To be applied for, if applicable
County		
Washington County	Right-of-Way Permit	To be applied for
Local		
City of Lake Elmo	Preliminary/Final Plat	To be applied for
	Building Permit	To be applied for
	Erosion Control, Grading, and Stormwater Permit	To be applied for
	Right-of-Way Permit	To be applied for, if applicable
	Comprehensive Plan Amendment (applies to Scenario 1, 2, and 3)	To be applied for
	Zoning Map Amendment	To be applied for
	Planned Unit Development	To be completed, if applicable

Unit of Government	Type of Application	Status
	Conditional Use Permit	To be completed, if applicable
Union Pacific Railroad	Utility Crossing Permit	To be applied for
Xcel Energy	Transmission Line Encroachment Agreement	To be applied for
BP	Gas Main Easement Encroachment Agreement	To be applied for

9. 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 consists of three parcels totaling approximately 190 acres that are bisected by 34th Street N (CSAH 14). Approximately 110 acres of the AUAR study area are located north of 34th Street N and approximately 80 acres are located south of 34th Street N. Approximately 95% of the AUAR study area consists of prime farmland, prime farmland if drained, or farmland of statewide importance (see Table 4). There are no existing parks or trails in the AUAR study area, but there are existing trails located adjacent to the site in the City of Oakdale. There is an existing trail that runs within the Ideal Avenue N (CSAH 13) right-of-way, and a trail/sidewalk on the south side of 34th Street N within the right-of-way adjacent to the Oakdale Marketplace development.

The study area is bound by Ideal Avenue N along the easterly border, which is also the municipal boundary with the City of Oakdale. North and south of 34th Street N is mostly undeveloped agricultural land and Stillwater Boulevard (CSAH 6) is the southerly border. The Union Pacific railroad right-of-way bisects a portion of the agricultural land south of 34th Street N. Approximately 7.4 acres of land northeast of the Ideal Avenue N and 34th Street N intersection is developed with the City's existing public works building and municipal elevated water storage tower. Adjacent to the site on the north and east are rural residential uses and a small mining operation. South of Stillwater Boulevard there are rural residential uses. Across Ideal Avenue N, in the City of Oakdale, there are residential and business park uses (see Figure 9).

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.

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.

The AUAR study area is located in the City of Lake Elmo and is subject to the adopted 2040 Comprehensive Plan. Regulations and standards within the 2040 Comprehensive Plan include the following:

- Future land use plan

- Water Supply
- Sanitary Sewer Plan
- Local Surface Water Management Plan
- Lake Elmo Transportation Plan
- Washington County 2040 Transportation Plan

All development must be consistent with the Comprehensive Plan as adopted, or it must be amended. The City recently acquired the AUAR study area as part of a 3M Settlement and it was not planned for urbanized development within the 2040 Comprehensive Plan. Since the adoption of the 2040 Comprehensive Plan, the 3M Settlement agreement was completed, and the City acquired the approximately 180-acre AUAR study area and prepared a Master Plan to plan for its development. A Comprehensive Plan Amendment to adjust the Metropolitan Urban Service Area (MUSA) in the City of Lake Elmo to include the approximately 80 acres contained south of 34th Street N was completed in May 2021. Given the proximity of the site to the City of Oakdale and existing regional sanitary sewer infrastructure, it was determined that the most effective and efficient way to develop the site with regional sewer is to work collaboratively with the City of Oakdale. In August 2021, the City of Lake Elmo entered into a cooperative agreement for the reconstruction of a sanitary sewer lift station (Lift Station 6) to establish a sanitary sewer connection to ensure the full AUAR study area can be served through Oakdale. The Oakdale Sewer Service Agreement detailing costs and responsibilities was subsequently executed to implement the cooperative agreement in September 2021 (See Appendix D). Reconstruction of Lift Station 6 will require a DNR Water Appropriation Permit if the dewatering for reconstruction will exceed 10,000 gallons per day, or one million gallons per year.

Lake Elmo 2040 Comprehensive Plan

The City of Lake Elmo adopted their 2040 Comprehensive Plan[1] in November 2019, and was most recently amended in May 2021, as noted above. The Comprehensive Plan identifies Lake Elmo as an "emerging suburban edge" community where the MUSA is designated and land area in this designation is planned to transition from agricultural land uses to urbanized development. The remainder of the community is designated as a "rural residential" community that is characterized by large lots with no plans to provide municipal sanitary sewer service. The May 2021 Comprehensive Plan Amendment was completed to add the parcels south of 34th Street N to the City's designated MUSA and to allow for its urbanized development. The study area north of 34th Street was not included in the Comprehensive Plan Amendment and remains outside the MUSA boundary.

The May 2021 Comprehensive Plan Amendment was approved and the study area south of 34th Street N is now located within the emerging suburban edge designation (MUSA) and was re-guided to Business Park (BP). All four scenarios evaluated in this AUAR are consistent with the future land use guiding for parcels south of 34th Street N. The study area north of 34th Street N is located within the rural residential designation and is guided Rural Area Development (RAD) and Park/Open Space (public works facility) on the Future Land Use Plan. This guiding does not plan for the extension of the MUSA to this area (scenario 4). Any urbanized development in the study

[1] Lake Elmo 2040 Comprehensive Plan. Available at https://cms8.revize.com/revize/lakeelmomn/Full2040CompPlan.pdf

area north of 34th Street N will require an amendment to the Comprehensive Plan (scenarios 1, 2 and 3).

Other Agreements and Plans

Sanitary Sewer Cooperative Agreement and Sewer Service Agreement with the City of Oakdale

As previously noted, the City of Lake Elmo entered into a cooperative agreement with the City of Oakdale for improvements to Lift Station 6 to provide regional sanitary sewer to the AUAR study area. The cooperative agreement contemplates the development of the full AUAR study area for urban services. To implement the Cooperative Agreement, the City of Lake Elmo entered into the Oakdale Sewer Service Agreement in September 2021 which details costs and responsibilities for the construction and long-term service once the improvements and extension are completed. The City of Lake Elmo acknowledges that any urbanized development of the area north of 34th Street N will require a Comprehensive Plan amendment to include the approximately 110 acres into the MUSA.

Water Supply Plan

The 2040 Comprehensive Plan includes a water supply plan that planned for serving the AUAR study area with municipal water. As discussed, the City acquired the AUAR study area as part of a settlement with 3M for PFAS contamination which is affecting the City's groundwater. Hooking up properties within the City, in both urbanized and rural areas, is important to protect the health, safety, and welfare of Lake Elmo's residents. As a result, all scenarios included in this AUAR plan for development to be served by the municipal water supply and is consistent with the adopted 2040 Comprehensive Plan.

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

Existing Zoning

The AUAR study area, excluding the public works facility, is zoned Rural Residential (RR) and the public works facility parcel is zoned Public Facilities (PF) (see Figure 8). Adjacent zoning in the City of Lake Elmo includes Rural Single Family (RS) along the northern boundary, Open Space PUD (OP) east of the study area north of 34th Street N, Limited Commercial (LC) east of the study area south of 34th Street N, and Residential Estate (RE) along the southern boundary. Adjacent to the site in the City of Oakdale, land is predominantly zoned Planned Unit Development (PUD) with a small portion of land adjacent to the southern portion of the study area zoned Low Density Residential (R-2) and Very Low Density Residential (R-1). Any proposed new development or redevelopment that results in a change in land use will be required to be zoned consistent with the Future Land Use Plan adopted in the Comprehensive Plan.

A portion along the southern area of the AUAR study area is located within the City's Shoreland buffer (see Figure 14).[2]

[2] City of Lake Elmo Zoning Map (last updated January 2021): https://cms8.revize.com/revize/lakeelmomn/Document%20center/Departments/Planning%20and%20Zoning/Maps/ZoningJanuary2021%201-22-21.pdf

Valley Branch Watershed District

The AUAR study area is located within the Valley Branch Watershed District[3] (VBWD) area. VBWD seeks to protect surface water, ground water, and natural resources within in the Valley Branch Watershed. Several wetlands are located within the AUAR study area as well as an unnamed tributary along southern boundary of the site. Any future development adjacent to the tributary and wetlands will need to maintain a vegetative buffer to minimize effects to the waterbody and may require watershed district permit approvals if any physical modification of waterbodies is proposed. All proposed development will be required to meet the requirements and standards of the City's adopted Local Surface Water Management Plan that incorporates the VBWD standards by reference.

FEMA National Flood Hazard

According to the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Map, the majority of the AUAR study area is located in an area of minimal flood hazard. The southeast and southwest corners are located within a FEMA 100-year floodplain and are associated with an unnamed DNR Public Water Basin and unnamed DNR Public Watercourse, respectively (see Figure 8). The FEMA Flood Insurance Rate Map (FIRM) panel numbers for the site are 27163C0240E, 27163C0245E, 27163C0331E, and 27163C0329E, effective February 3, 2010.

The parcels located north of 34th Street N are not located within any of the City's floodplain zoning districts. However, FEMA Zone A and Zone AE Floodway are present within the parcels south of 34th Street N. Areas designated as Zone A are within the City's General Flood Plain District. Areas designated as floodway are within the City's Floodway District. Therefore, both the General Flood Plain District and Floodway District exist within the area south of 34th Street N. All development of the parcels south of 34th Street N must follow the standards as established within the adopted Floodplain Ordinance and any standards and regulations, including but not limited to setbacks established by the VBWD rules.

[3] Valley Branch Watershed District rules. Available at https://vbwd.org/document_center/Quick%20links/2013AdoptedRules.pdf

Figure 8: FEMA Map

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

Scenario 1, Scenario 2, and Scenario 3

The City's 2040 Comprehensive Plan guides the area north of 34th Street N a as Rural Area Development which generally permits rural residential principal and accessory uses. The May 2021 Comprehensive Plan Amendment guides the area south of 34th Street N for Business Park. Land use east of the project site is guided for Rural Area Development and Limited Commercial/business uses. Land west of the site is within the City of Oakdale and is guided for urbanized development including PUD Business Park and low density residential. Scenarios 1, 2, and 3 propose development of the AUAR study area with urbanized development patterns that require the extension of municipal water and regional sanitary sewer. This area of the City was not contemplated for urban services in the 2040 Comprehensive Plan period because the 3M Settlement occurred after its adoption. The PFAS groundwater contamination in this area makes it important for any development or redevelopment activities to be served by the municipal water supply, and consequently make it cost effective for the area to be served by the regional sanitary sewer. Scenarios 1, 2, and 3 are consistent with the land use patterns in the City of Oakdale, and while they are somewhat inconsistent with the adjacent Lake Elmo land uses, environmentally it is important to serve this area with municipal services rather than private utilities and infrastructure.

Land adjacent to the AUAR study area in the City of Lake Elmo is of a lower density and intensity land use pattern than is identified in all Scenarios 1, 2, and 3. The most significant potential conflict is along the northern and eastern border of the study area where the predominant existing land use is rural residential. To mitigate potential land use conflicts, Scenarios 1, 2, and 3 include an approximately 14-acre residential buffer between the planned Business Park and existing rural residential development. The parcels south of 34th Street N are where the project proposer intends to develop a Business Park that will include a combination of warehousing and light-industrial uses. Planned development will include open space buffers along the south and southeastern borders where there is existing vegetation and the floodplain. On the easterly border of the study area there are existing Limited Commercial uses that will be compatible with Scenarios 1, 2, and 3.

The parcels south of 34th Street N in Scenarios 1, 2, and 3 are consistent with the guided Business Park land uses in the 2040 Comprehensive Plan, as amended in May 2021, and rezoning of this area will be required as part of the land use application process. The area north of 34th Street N in Scenarios 1, 2, and 3 are inconsistent with the 2040 Comprehensive Plan and will require a Comprehensive Plan Amendment to be included within the MUSA. Once the development is known, this area would be re-guided and subsequently rezoned to be consistent as part of any land use application process.

Scenario 4

Scenario 4 is consistent with the adopted 2040 Comprehensive Plan as amended in May 2021. The area south of 34th Street N are guided for Business Park and at time of development must be rezoned for consistency with this land use designation. The area south of 34th Street N is included in the City's MUSA boundary and is planned to be connected to both municipal water supply and the regional sanitary sewer system. The area north of 34th Street N is guided Rural

Residential and is zoned Rural Area Development (RAD) and Public Facilities on the approximately 7.4 acres of land that includes the City's public work facilities. Scenario 4 assumes the continuation of this land use pattern and would permit the development of the existing agricultural land into approximately 10 rural residential lots. If development occurs consistent with Scenario 4, the City will require the extension of municipal water to these properties due to the known PFAS groundwater contamination in the area. Scenario 4 is not desirable due to the costs associated with the infrastructure needed to develop the area north of 34th Street N, but it is consistent with the adopted comprehensive plan.

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

As mentioned in Item 9b, Scenarios 1, 2, and 3 include a residential buffer along the northern and eastern perimeter of the study area north of 34th Street N to transition between residential and Business Park uses. Development of this area will be required to demonstrate appropriate transitions between the uses, including where and how roadways are connected throughout the AUAR study area, where open space, vegetation, and stormwater management features can be used to protect existing neighborhoods from the more intense development patterns contemplated in Scenarios 1, 2, and 3.

Additionally, given the known PFAS groundwater contamination in the area, it is important for any new development to be hooked up to and served by municipal water. To serve this area efficiently and cost-effectively, a more intense and urbanized development pattern will help to mitigate the significant costs associated with the infrastructure.

Re-guiding and rezoning the AUAR study area is another mitigative strategy as it will require public hearings and other formal land use applications that will provide opportunities for neighbors to express their concerns, and for the City and potential developers to respond to potential adverse impacts.

Figure 9: Existing City Zoning

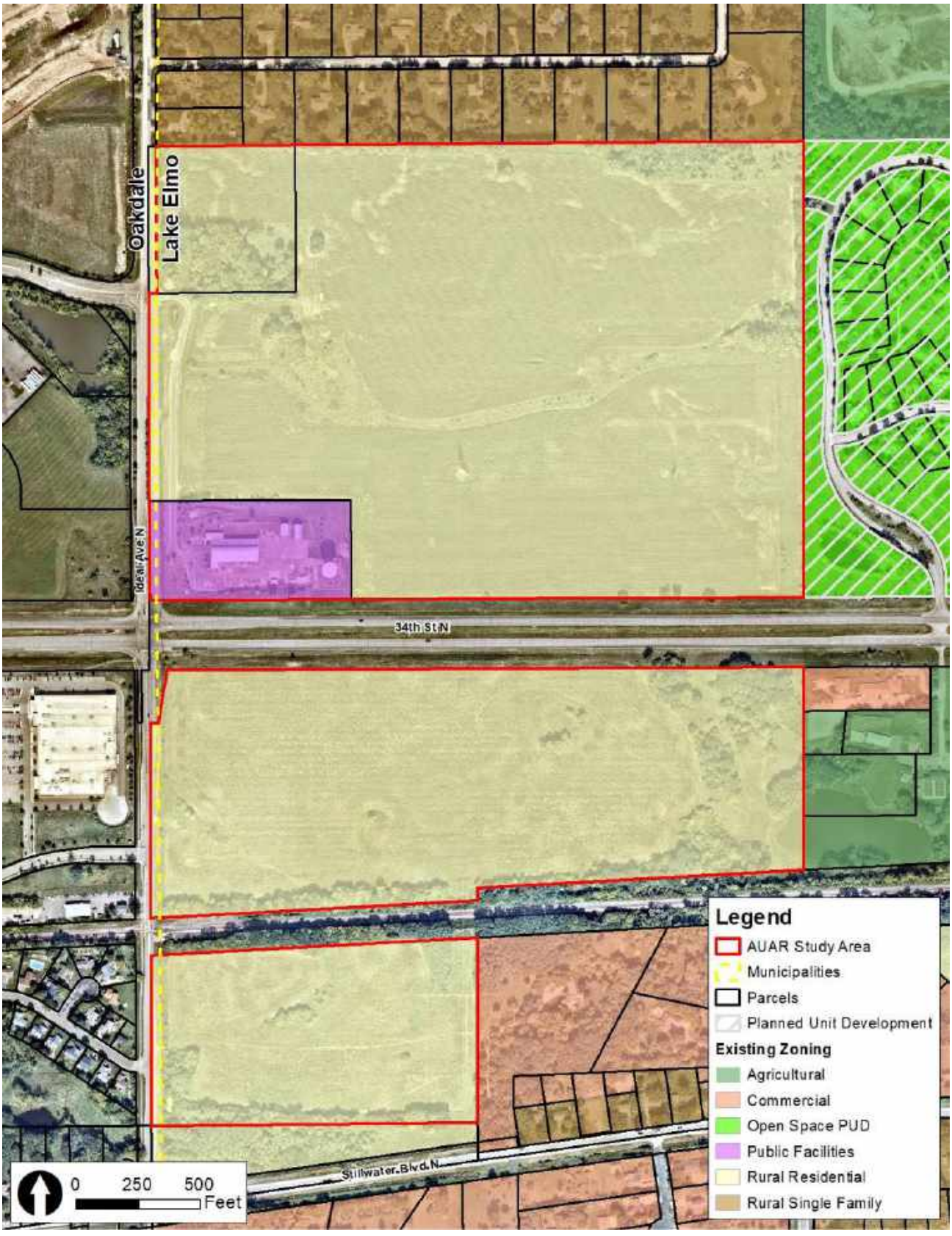
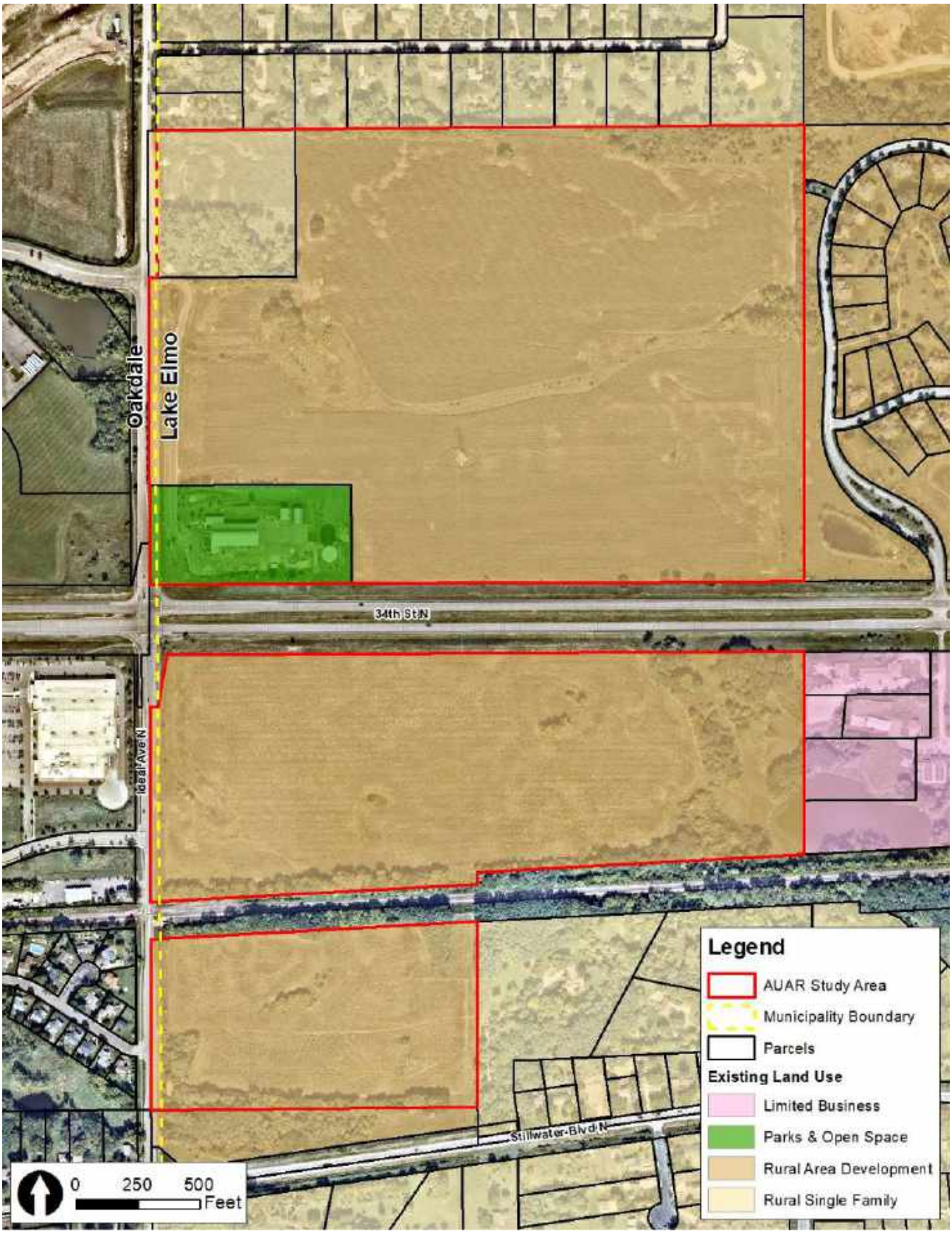


Figure 10: Existing Land Use



10. Geology, Soils, and Topography/Land Forms

AUAR Guidance: A map should be included to show any groundwater hazards identified. A standard soils map for the area should be included.

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 Washington County (Minnesota Geological Survey, 2016), the AUAR study area is underlain by sand, gravel, and diamicton.

Bedrock is encountered at varying depths across the AUAR study area, ranging in depth from approximately 1-50 feet below ground surface. Bedrock is comprised of Platteville and Glenwood Formations, fine-grained limestone containing thin shale partings near the top and base, underlain by green, sandy shale.

The AUAR study area is located within a karst-prone area where karst features may form on the land surface and where they are likely present in the subsurface. Site specific subsurface investigations should be completed prior to work commencement. If karst conditions are found to be present, the project proposer will follow the Valley Branch Watershed District, City of Lake Elmo, and the Minnesota Pollution Control Agency (MPCA) design guidelines.

Groundwater is present at approximately 0 to 50 feet below the surface.

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 13 different soil types (see Table 4 and Figure 10). A Geotechnical Evaluation Report was completed by Braun Intertec (August 2021) on the study area south of 34th Street N, which is the area the project proposer intends to develop for business park uses. According to

the report, the predominant soil conditions consist of an average of one foot of topsoil overlying mixed glacially deposited soils.

Earthwork on the study area south of 34th Street N is anticipated to generally balance and be kept onsite. The proposed project will require approximately 500,000 total cubic yards of excavation.

During construction, sediment control best management practices such as silt fences, biologs, and silt curtains will be used where appropriate. The proposed development within the study area south of 34th Street N will require compliance with both the City's and VBWD's erosion and sediment control standards. Erosion will be minimized to the extent practicable by establishing or retaining stabilizing vegetation and avoiding the placement of structures or land alternations near steep slopes.

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 study area south of 34th Street N.

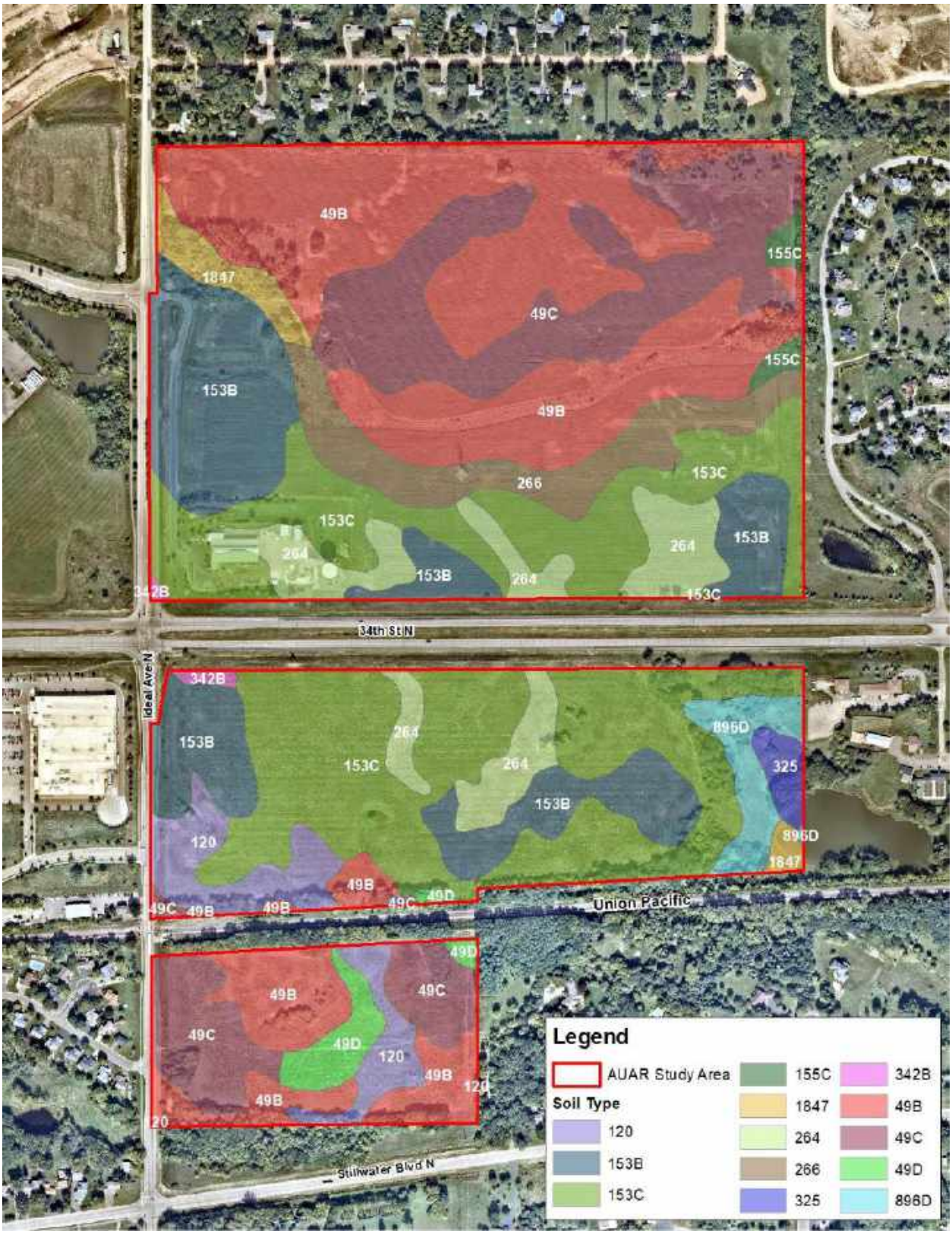
While unlikely, if the study area north of 34th Street N is developed consistent with Scenario 4, minimal site grading and excavation work will be necessary to develop large rural residential lots, and all proper grading permits and site plan approvals will be required. The City anticipates development of the study area north of 34th Street N will be consistent with either Scenarios 1, 2, or 3 but the actual development is unknown. Based on the scenario's excavation, mass grading and site work are likely with Scenarios 1, 2, or 3. Any future development of the study area north of 34th Street N will be required to submit construction and development plans that include erosion control and grading plans. All development will be required to obtain NPDES and SWPPP approvals, if applicable.

Table 4: Soil Types

Map Unit Symbol	Soil Type	Acres within site	Percent of Site	Hydric Rating	Farmland Classification
49B	Antigo silt loam, 2 to 6 percent slopes	48.9	26.1%	Not Hydric	Prime farmland
49C	Antigo silt loam, 6 to 15 percent slopes	27.1	14.5%	Not Hydric	Farmland of statewide importance
49D	Antigo silt loam, 15 to 35 percent slopes	2.7	1.4%	Not Hydric	Not Prime Farmland
120	Brill silt loam	7.3	3.9%	Hydric (1%-32%)	Prime farmland
153B	Santiago silt loam, 2 to 6 percent slopes	26.0	13.8%	Not Hydric	Prime farmland
153C	Santiago silt loam, 6 to 15 percent slopes	45.9	24.5%	Not Hydric	Farmland of statewide importance
155C	Chetek sandy loam, 6 to 12 percent slopes	1.3	0.7%	Not Hydric	Not Prime Farmland
264	Freeon silt loam, 2 to 6 percent slopes	11.6	6.2%	Hydric (1%-32%)	Prime farmland

Map Unit Symbol	Soil Type	Acres within site	Percent of Site	Hydric Rating	Farmland Classification
266	Freer silt loam	8.7	4.6%	Hydric (1%-32%)	Prime farmland if drained
325	Prebish loam	1.3	0.7%	Hydric (66%-99%)	Not Prime Farmland
342B	Kingsley sandy loam, 2 to 6 percent slopes	0.4	0.2%	Hydric (1%-32%)	Prime farmland
896D	Mahtomedi-Kingsley complex, 12 to 25 percent slopes	3.5	1.9%	Not Hydric	Not Prime Farmland
1847	Barronett silt loam, sandy substratum	2.9	1.5%	Hydric (66%-99%)	Not Prime Farmland
Total		**187.7**	**100%**	**--**	**--**

Figure 11: Soil Types



11. 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 scenarios, 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. All surface water features should be described and identified on a map of the project area. 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.

Surface water features within the AUAR study area include five freshwater emergent wetlands and three ponds. These features are identified on the National Wetlands Inventory (NWI) and the surface area of these ponds totals 5.2 acres (see Figure 13).

There are two waterbodies identified by the Minnesota Pollution Control Agency's (MPCA) Part 303d Impaired Waters List within one mile of the AUAR study area. Lake Jane, located north of the site, is impaired for mercury in fish tissue and fish bioassessments. Eagle Point Lake, located southeast of the site, is impaired for Perfluorooctane sulfonate (PFOS) in fish tissue (see Figure 12).

The site generally drains to the east and south. One unnamed DNR Public Water Basin is present in the southeast corner of the site (DNR ID 82040000). An unnamed DNR Public Watercourse is present south of the site. This unnamed watercourse is an upstream tributary of Raleigh Creek, which drains into Eagle Point Lake.

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 DNR's County Geologic Atlas Program, the depth to groundwater within the AUAR study area is 0 to 50 feet below the surface. Based on the Minnesota Department of Health Minnesota Well Index, there is one well located within the AUAR study area and one well within 150 feet of the AUAR study area (see Table 5 and Figure 11). The City recently acquired the AUAR study area parcels, and based on information obtained during the acquisition, the well has been properly sealed and closed. If unknown wells are encountered onsite, they will be sealed and abandoned following Minnesota Department of Health and MPCA protocols.

The southernmost part of the AUAR study area is located in the Oakdale drinking water supply management area (DWSMA), see Figure 14. The AUAR study area is not within any

wellhead protection areas, but it is adjacent to the Oakdale South wellhead protection area (WPA), see Figure 14.

Per the Minnesota Department of Health, the AUAR study area is located in a Special Well and Boring Construction Area (SWCA) due to the known PFAS groundwater contamination at levels that may pose public health risks. As stated by Washington County, "The purpose of a SWCA is to inform the public of potential health risks in areas of groundwater contamination, provide for the construction of safe water supplies, and prevent the spread of contamination due to improper drilling of wells or borings". As previously noted, the safety of the water supply is critical in this area due to known groundwater contamination.

Table 5: Wells within AUAR Study Area

Well ID Number	Well Status	Well Name	Well Depth	Date Completed
440554	Sealed	Cerney, Jim & Cindy	141 Feet	10/09/1986
255284	Sealed	Imation MW	146 Feet	05/00/1956

Figure 12: Wells within 150 feet of AUAR Study Area

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

iii. 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.

In August 2021, the City of Lake Elmo entered into a Cooperative Agreement with the City of Oakdale to hook up and serve the AUAR study area with regional sanitary sewer system through Oakdale. The Cooperative Agreement identifies and establishes the quantity of wastewater flows anticipated for full development of the AUAR study area, and the City of Lake Elmo has agreed to contribute to the construction and upgrade of Oakdale's Lift Station 6 proportionate to the development anticipated. The implementation of the Cooperative Agreement was approved in the Oakdale Sewer Service Agreement approved by the Lake Elmo City Council in September 2021. Ultimately the sanitary sewer main is connected to the Metropolitan Council Environmental Services system through a 10-inch gravity sewer main extending across the City of Oakdale and connecting to the MCES 15-in 1-WO-500 interceptor sewer trunk line. The 1-WO-500 interceptor main discharges to the Metro Wastewater Treatment Plant in St. Paul.

The Metro Wastewater Treatment Plant is the largest wastewater treatment facility in Minnesota. The plant is an advanced secondary treatment plant with chlorination/dichlorination. Currently, the plant has a maximum capacity of 314 million gallons per day. During the month of September 2021, the plant had an average flow of 160.8 million of gallons per day, which results in an excess capacity of approximately 153 million gallons per day.

Table 6 illustrates the anticipated average daily flow rates and peak daily flow rates for each of the scenarios. Each of the potential scenarios is well within the existing capacity of the existing Metro Wastewater Treatment Plant.

Table 6: Anticipated Average Daily Flow Rates and Peak Daily Flow Rates

	AVERAGE DAY WASTEWATER USE			PEAK DAY WASTEWATER USE		
	Area north of 34th Street N (gpd)	Area south of 34th Street N (gpd)	Total AUAR study area (gpd)	Area north of 34th Street N (gpd)	Area south of 34th Street N (gpd)	Total AUAR study area (gpd)
Scenario 1	114,000	38,000	152,000	240	80	320
Scenario 2	104,000	38,000	142,000	220	80	300
Scenario 3	38,000	38,000	76,000	80	80	160
Scenario 4	0	38,000	38,000	0	80	80

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.**

The existing public works facility is served by an Individual Subsurface Sewage Treatment System that includes a private drainfield. The public works facility is located in the area north of 34th Street N and there is no immediate plan to hook up the system to the regional sanitary system. At the time of development in the area north of 34th Street N, the public works facility may be hooked up to the regional system, but it is unknown at this time. If Scenario 4 were to be developed, Individual Subsurface Sewage Treatment Systems (SSTS) would likely be installed to serve the rural residential development in the area north of 34th Street N. However, as previously stated, the City anticipates that development of the area north of 34th Street N will be consistent with either Scenario 1, 2, or 3 and that the area will be served by the regional sewer extension and that no other subsurface sewage treatment systems (SSTS) would be developed in the AUAR study area.

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 any of the development scenarios.

iv. Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control, or stabilization measures to address soil limitations during and after project construction.

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.*

The existing Lake Elmo public works building is located at the northeast quadrant of the Ideal Avenue and 34th Street N intersection and is comprised of approximately three acres of impervious surfaces. The remainder of the existing ground cover is made up of pervious surfaces. The soil across the AUAR study area is generally clayey with relatively low permeability rates. Valley Branch Watershed District (VBWD) regulates the stormwater management criteria for the AUAR study area. For new, nonlinear developments that create 6,000 square feet or more of new impervious surface on sites without restrictions, stormwater runoff volumes will be controlled, and the post-construction runoff volume shall be retained onsite for 1.1 inches of runoff from impervious surfaces. In addition to the water quality retention requirements, the VBWD requires the peak rate of stormwater runoff from the developed site not exceed the existing peak rate of runoff for all critical duration events, up to and including the 100-year return frequency storm event for all points where discharges leave a site during all

phases of development. Design criteria shall be the 2-, 10-, and 100-year 24-hour storms with respective 2.8, 4.2, and 7.3-inch rainfall depths with VBWD-approved time distribution and the 7.2-inch, 100-year, 10-day snowmelt event.

As shown in each scenario, an extensive network of stormwater ponds and stormwater features are anticipated throughout the study area. The stormwater management design will be subject to the regulations as previously noted, regardless of the scenario developed, and individual plans will be required to demonstrate compliance with both the City's and VBWD's rules for stormwater management.

Additionally, the developer will look for methods to minimize chloride use and improve treatment of stormwater runoff to minimize potential impacts to downstream waters. The project will comply with all city, watershed district, county, and state rules for stormwater management, and chloride use will be addressed in the Stormwater Management Plan that will be reviewed by the City for compliance.

v. 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. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

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.

Construction dewatering will be required for the development of the area south of 34th Street N and may be required when the area north of 34th Street N develops. Construction activities associated with dewatering will include discharging into temporary sedimentation basins to reduce the rate of water discharged from the site, as well as discharging to temporary stormwater best management practices. Any temporary dewatering will require a DNR Temporary Water Appropriations General Permit 1997-0005 if less than 50 million gallons per year and less than one year in duration. In the area south of 34th Street N it is anticipated that the temporary dewatering would only occur during utility installation and potential construction of building footings.

The water supply will be obtained from the three municipal groundwater wells that currently supply the Lake Elmo water system. The groundwater wells draw water from the Jordan aquifer.[4] According to the City's Comprehensive Plan, the City's pumping capacity is 3,750 gallons per minute (gpm) as of 2019 for the three wells.

[4] Source: City of Lake Elmo. *2040 Comprehensive Plan: Water Supply Plan in Appendix H (2019).* https://cms8.revize.com/revize/lakeelmomn/Full2040CompPlan.pdf

The existing water system was analyzed for supply, treatment, storage, and distribution capacity to determine if additional water system capital improvements are necessary to continue to provide a safe and reliable water supply through 2040 in the Comprehensive Plan. It was determined that as the City grows, the Comprehensive Plan assumes an additional 2-3 wells will be required and that the existing water tower storage capacity of Towers 2 and 4 equate to 1,750,000 gallons. In addition, the City is currently designing and constructing Water Tower No. 3 to add another 1,000,000 gallons of elevated storage capacity to the overall system. With the completion of Water Tower No. 3, anticipated in the Fall of 2023, the storage capacity will be sufficient to serve the demands projected in the Comprehensive Plan beyond 2040. The Minnesota DNR recommends that the total storage be equal or exceed the average daily demand. The Water Supply Plan adopted as part of the Comprehensive Plan did not plan for development of the AUAR study area with urban densities; however, it did plan to serve the AUAR study area with municipal water given the known PFAS groundwater contamination in the area. Based on the expected population growth of Lake Elmo per the 2040 Comprehensive Plan and the May 2021 Comprehensive Plan Amendment, the projected average daily demand will be 2,100,000 gallons per day.

While the projected density and intensity is higher than planned, the City's planned improvements to the water supply, including additional wells and storage capacity, is sized adequately to serve the increased demand based on higher intensity and density in the area.

vi. 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. 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.**

Scenarios 1, 2, 3, and 4

Approximately 5.2 acres of wetlands are located within the AUAR study area based on National Wetlands Inventory data from the DNR (See Table 7). If any wetland impacts are proposed as part of future development within the AUAR study area, the applicable WCA and/or U.S. Army Corps of Engineers approvals will need to be obtained.

Table 7: Wetlands Identified on Site

Identifying Inventory	Wetland Type	Wetland Classification	Identified Wetland Size
National Wetlands Inventory	Freshwater Emergent Wetland	PEM1A	0.44 acres
	Freshwater Emergent Wetland	PEM1C	1.6 acres

Identifying Inventory	Wetland Type	Wetland Classification	Identified Wetland Size
	Freshwater Emergent Wetland	PEM1C	48 square feet
	Freshwater Emergent Wetland	PEM1F	0.3 acres
	Freshwater Emergent Wetland	PEM1A	2.4 acres
	Freshwater Pond	PUBFx	0.18 acres
	Freshwater Pond	PABHx	0.08 acres
	Freshwater Pond	PUBHx	0.21 acres
Total	--	--	**5.2 Acres**

c. 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. 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.

No alternations to other surface waters are anticipated as part of any of the development scenarios.

d. 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 existing surface waters is anticipated for any of the development scenarios.

e. Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential Best Management Practices site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control, or stabilization measures to address soil limitations during and after project construction.

<u>Scenarios 1, 2, 3 and 4</u>

The following stormwater management requirements will be adhered to:

- City of Lake Elmo Code of Ordinances; 105.04-XIV Stormwater and Erosion and Sediment Control
- City of Lake Elmo Comprehensive Surface Water Management Plan
- Valley Branch Watershed District Standards
- National Pollution Discharge Elimination System permit requirements will be determined for each new development within the AUAR Study Area. This permit requires 80 percent TSS removal and meeting existing run-off rates for the 2, 10, and 100-year storm events.

Stormwater will be managed on site and will maintain the current drainage patterns to the discharge points. The proposed development within the AUAR study area will require compliance with the standards of the VBWD and the City of Lake Elmo for water quality, volume control, rate control, and erosion control. For new, nonlinear developments that create 6,000 square feet or more of new impervious surface on sites without restrictions, stormwater runoff volumes will be controlled, and the post-construction runoff volume shall be retained onsite for 1.1 inches of runoff from impervious surfaces. In addition to the water quality retention requirements, the City and VBWD requires the peak rate of stormwater runoff from the developed site shall not exceed the existing peak rate of runoff for all critical duration events, up to and including the 100-year return frequency storm event for all points where discharges leave a site during all phases of development. Design criteria shall be the 2-, 10-, and 100-year 24-hour storms with respective 2.8, 4.2, and 7.3-inch rainfall depths with VBWD-approved time distribution and the 7.2-inch 100-year 10-day snowmelt event.

The soil profile is anticipated to be clayey having a poor permeability rate. Per VBWD regulations, developments must exhaust options to infiltrate the 1.1-inch water quality volume before alternate means of treatment can be considered. Alternate options to infiltration may include but are not limited to underground detention, underground infiltration, stormwater reuse, surface biofiltration, and green roofs. In addition to potential soil permeability issues, karst geology may be present in the area. If karst formations are found onsite, the stormwater mitigation measures must follow both MPCA and VBWD requirements.

Stormwater modeling of runoff and temperature controls will be completed as part of the final design of each project phase to provide volume and temperature control for the proposed improvements. The modeling will be performed to ensure conformance to all City of Lake Elmo and VBWD standards. Outfalls will be defined as part of the final design of each project phase.

The following design/construction standards are to be adhered to during construction:

- Grading of the infiltration basins shall be accomplished using low-impact, earthmoving equipment to prevent compaction of the underlying soils.
- Infiltration basin excavation shall be held 1 foot above the bottom of the excavation until the contributing drainage areas with exposed soils have been fully stabilized.
- Divert upland drainage areas to prevent runoff from entering the excavated basins or into the work areas.

- Care must be taken to avoid contamination of engineered soils with sediment, in-situ, or topsoil during and after installation. Materials must be segregated.
- Installation with dry soil conditions is critical to prevent smearing and compaction. Schedule work for periods of dry weather.
- Do not leave infiltration areas and/or perimeter slope exposed overnight. Secure the area from risk of precipitation and damages at the end of every workday. In the event of rain, take action to divert stormwater away from work area and temporarily cover all exposed soils with filter fabric or impermeable sheeting.
- In the event that the sediment is introduced into the BMP during or immediately following excavation, remove sediment prior to initiating the next step in the infiltration basin construction process.
- Excavate sediment built up during construction after stabilization of upstream areas and before placement of hydraulic soil stabilizer type special.
- Stockpiling of materials shall not be allowed in proposed infiltration areas before or after they are constructed. Only specified equipment will be allowed inside of the orange construction fence for the sole purpose of constructing the infiltration basins.
- All infiltration basin construction activities shall be completed during dry soil conditions.
- All infiltration areas shall be protected during construction operations.

In all four development scenarios, roads, parking lots, and stormwater management basins are proposed. To minimize the impact of snow melt on the adjacent natural resources, snow will be stockpiled and managed in proposed landscape and stormwater pre-treatment forebays. In the spring, the proposed infiltration basins will minimize the effect of freezing by providing increased pore space through the native sandy soils and proposed plantings. The basins will also be sized to control the peak runoff rates from the 1-, 10-, and 100-year, 24-hour rainfall events. It is anticipated that approximately 500,000 cubic feet of stormwater volume will need to be retained and infiltrated on-site. Pretreatment of all runoff prior to discharging into the stormwater BMP is encouraged, but not required if the tributary area is less than two acres. The volume provided onsite will provide excess storage to compensate for the runoff volume expected during spring thawing. The proposed stormwater management BMPs will be designed to comply with all City of Lake Elmo and VBWD standards and with comply with all maintenance/monitoring requirements of the City and VBWD.

Figure 13: Water Resources Within 1-Mile of AUAR Study Area

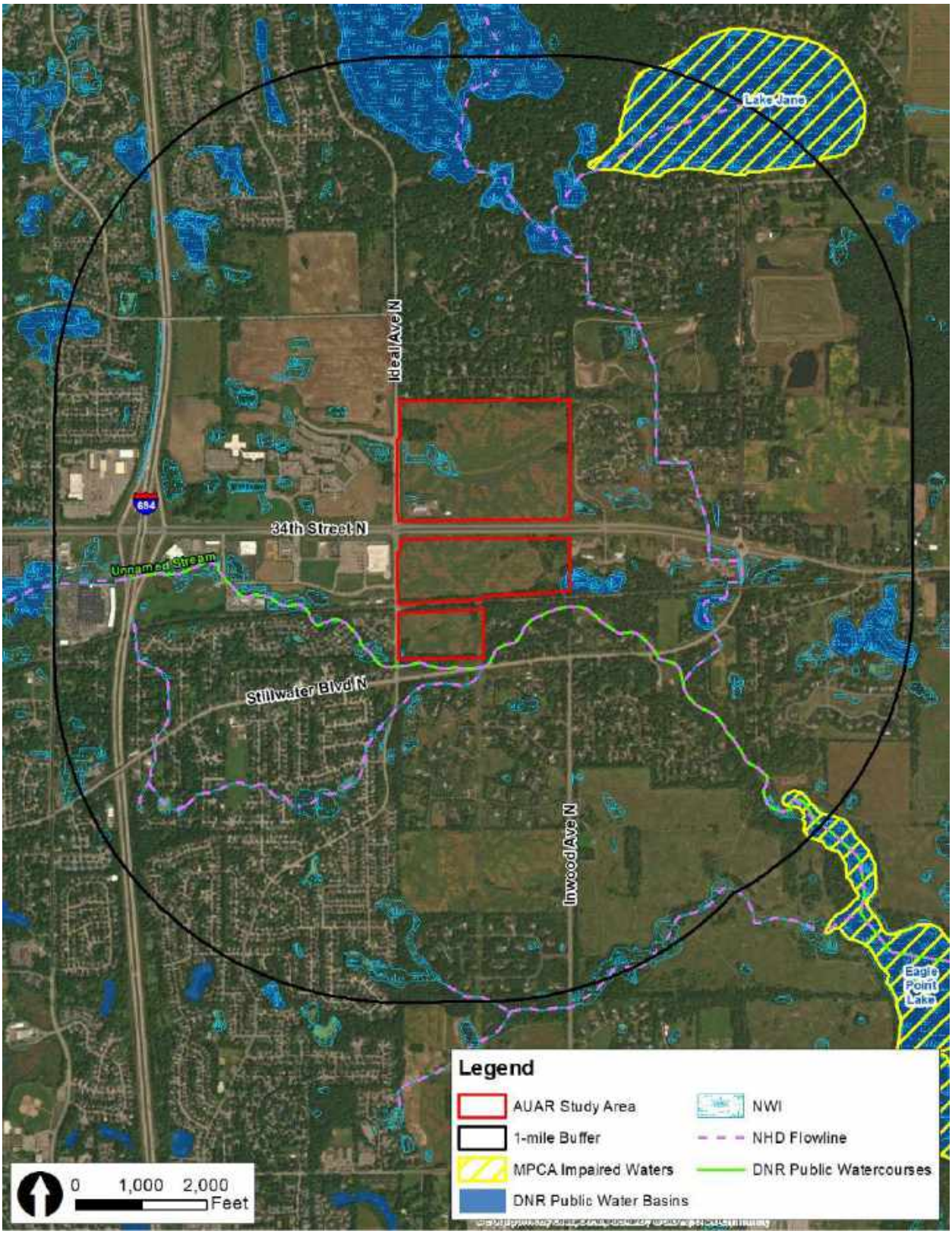


Figure 14: Water Resources Within AUAR Study Area

Figure 15: Drinking Water Supply Management Area & Wellhead Protection Area

12. Solid Wastes, Hazardous Wastes, and Storage Tanks

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 (WIMN) database was reviewed to determine if any known contaminated properties or potential environmental hazards are located within the AUAR study area. Two sites were identified within the AUAR study area and two sites were identified within 250 feet of the AUAR study area (see Table 8 and Figure 16).

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).

Table 8: MPCA What's in My Neighborhood Sites

Site ID	Site Name	Activity Status	Activity	Risk Level
108620	Lake Elmo Public Works	Active	Hazardous Waste – minimal quantity generator	Low
95697	Lake Elmo Public Works Facility	Inactive	Construction Stormwater	Low
		Active	Underground Tanks	Medium
28670	Oakwood Animal Hospital	Active	Hazardous Waste – very small quantity generator	Low

Site ID	Site Name	Activity Status	Activity	Risk Level
		Inactive	Petroleum Remediation	Medium
40673	Myrons Service Center	Inactive	Hazardous Waste	Low

As described in Item 11(ii), the AUAR study area is located within the Special Well and Boring Construction Area (SWCA) because of known PFAS groundwater contamination. As stated by Washington County, "Wastes containing perfluoro-alkyl Substances (PFAS), also known as perfluorochemicals (PFCs) were disposed of by the 3M Company at the 3M disposal sites in Oakdale, Woodbury, and Cottage Grove, and the former Washington County Landfill in Lake Elmo. PFAS were released from the sites, resulting in contamination of groundwater and nearby drinking water wells".

Scenarios 1, 2, 3, and 4

The AUAR study area is in an area known to contain PFAS groundwater contamination and as a result any development must be served by municipal water. Additionally, given the known contamination in the area a Response Action Plan (RAP) must be developed for any construction in the AUAR study area, and a Construction Contingency Plan (CCP) will be prepared and implemented during construction.

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

According to Washington County Ordinance No. 202, Washington County will ensure compliance with applicable laws, rules, and ordinances related to the management of solid and hazardous waste as required by Minnesota Statutes, section 473.811.

Construction Generated Solid Waste

Scenarios 1, 2, 3, and 4

All four scenarios include the development and construction of the area south of 34th Street N with business park uses. The construction will generate construction-related waste materials such as wood, packaging, excess materials, and other wastes. The wastes generated as a result of the construction will either be recycled or disposed of in the proper facilities in accordance with state regulations and guidelines.

Future development of the area north of 34th Street N will likely be similar to the waste generated in the area south of 34th Street N; the wastes will either be recycled or disposed of in the proper facilities in accordance with state regulations and guidelines.

Operation Generated Solid Waste

Scenario 1, 2, 3, and 4

Recycling for residential units and commercial 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). Furthermore, Washington County Ordinance 202 (2.83) requires source separation by the generator prior to collection for recycling services.

The proposed development of the area south of 34th Street N will generate new demands on solid waste management and sanitation services. It is estimated that the added residential waste stream will be approximately 937 tons per year under Scenario 1; 914 tons per year under Scenario 2; 131 tons per year under Scenario 3; and 23 tons per year under Scenario 4. The added non-residential (commercial/industrial) waste stream will be approximately 27,674 tons per year under Scenario 1; 26,040 tons per year under Scenario 2; 42,623 tons per year under Scenario 3; and 16,500 tons per year under Scenario 4.

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).

Not required for an AUAR.

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 required for an AUAR.

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources

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 scenarios should be highlighted in the discussion.

Minimal native wildlife habitat is located within the AUAR study area due to the site's use as an agricultural field. Wildlife that can be found within the AUAR study area include birds and small mammals. There are four areas of Minnesota Biological Survey (MBS) Sites of Biodiversity Significance, eight native plant communities, and six Regionally Significant Ecological Areas (RSEA) located within one mile of the site. Existing cover types are shown in Figure 6.

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 (LA-965) 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 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.

Federally Listed Threatened and Endangered Species

Based on a review of the US Department of Fish and Wildlife Service (FWS) data for federally listed threatened and endangered species, there are seven federally listed species within Washington County; Northern long-eared bat (NLEB), Higgins eye (pearlymussel), snuffbox mussel, spectaclecase (mussel), winged mapleleaf, monarch butterfly, and rusty patched bumble bee.

A record for the Northern Long-Eared Bat (*Myotis septentrionalis*) is located within Washington County. Northern long-eared bat was designated a federally threatened species by FWS in April 2015. According to the Minnesota DNR, in the southern part of the state, Northern Long-Eared

Bat 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.

A record for Higgins eye (*Lampsilis higginsii*), a federally endangered species, is located within Washington County. The preferred habitat for this species is larger rivers with deep water and moderate currents.

A record for snuffbox mussel (*Epioblasma triquetra*), a federally endangered species, is located within Washington County. The preferred habitat for this species is small to medium sized creeks with a swift current.

A record for spectaclecase (*Cumberlandia monodonta*), a federally endangered species, is located within Washington County. The preferred habitat for this species is in large rivers where they can shelter from the main force of the current.

A record for winged mapleleaf (*Quadrula fragosa*), a federally endangered species, is located within Washington County. The preferred habitat for this species is in riffles with clean gravel, sand, or rubble bottoms and in clear, high quality water.

A record for monarch butterfly (*Danaus plexippus*), a federal candidate species, is located within Washington County. The preferred habitat for this species is anywhere milkweed is present, including fields, roadside ditches, open areas, or wet areas.

A record for the rusty patched bumble bee (*Bombus affinis*), a federally listed endangered species, is located within Washington County. The preferred habitat for this species includes grasslands and tallgrass prairies. Although the AUAR study area is located within a high potential zone for the rusty patched bumble bee, the site has been previously cultivated for agricultural use and does not contain natural prairie vegetation.

State-Listed Threatened and Endangered Species

Based on a review of the Natural Heritage Information System (NHIS) for state-listed threatened, endangered, and special concern species (per license agreement LA-965), there are no records within the AUAR study area and three records within one mile of the AUAR study area: Red-shouldered hawk, least darter, and rusty-patched bumble bee.

A record for the Red-shouldered Hawk (Buteo lineatus), a state-listed special concern species, is located within a one-mile radius of the project site. The preferred habitat for this species includes large tracts of mature deciduous forest with scattered wetland openings.

A record for the Least Darter (Etheostoma microperca), a state-listed special concern species, is located within a one-mile radius of the project site. The preferred habitat for this species includes freshwater streams and lakes.

A record for the Rusty-patched Bumble Bee (Bombus affinis), a federally listed endangered species, is located within a one-mile radius of the project site. The AUAR study area is also entirely within a High Potential Zone for the rusty-patched bumble bee. Disturbed areas will be reseeded using native seed mixes; therefore, no long-term adverse impacts are anticipated.

Other Sensitive Ecological Resources

There are four areas of Minnesota Biological Survey Sites of Biodiversity Significance and eight native plant communities within a one-mile radius of the project site. Considering none are within the AUAR study area, no adverse impacts in these areas are anticipated.

There are six regionally significant ecological areas (RSEA) within one mile of the project site, one of which is within the AUAR study area, south of 34th Street N. Any project grading or tree removal will occur along the edge of the RSEA, and potential impact will be limited.

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.

Scenario 1, 2, 3, and 4

Effects to Wildlife Habitat

The current site provides several acres of non-native wildlife habitat. It is possible one or more species utilizing the existing site may be relocated as a result of future development.

Effects to Threatened and Endangered Species

The AUAR study area is not located in a township containing documented NLEB maternity roost trees or hibernacula; therefore, adverse impacts are minimal.

Potential suitable habitat for the rusty patched bumble bee may exist within or near the AUAR study area as it is located entirely within a High Potential Zone; however, due to the highly disturbed nature of the site, proposed impacts are minimal.

The Least Darter is sensitive to environmental degradation, especially turbidity and siltation within the waterbodies that it inhabits.

The site does not contain any rivers or creeks; therefore, no adverse impacts to the Higgins eye, snuffbox mussel, spectaclecase, or winged mapleleaf are anticipated.

The site does not contain suitable habitat for the Red-shouldered hawk; therefore, no adverse impacts are anticipated.

Potential suitable habitat for the monarch butterfly may exist within or near the project AUAR study area; however, due to the highly disturbed nature of the site, proposed impacts are minimal.

A request for concurrence was submitted to the DNR and is currently pending (see correspondence in Appendix A).

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.

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

Scenario 1, 2, 3, and 4

Effects to Wildlife Habitat

Tree removal mitigation will be implemented if the maximum allowable amount of tree removal is exceeded as required by City of Lake Elmo's code of ordinances § 154.257. Some green space and native landscaping will be provided within the proposed development scenarios. Pollinator friendly seed mixes will be used to promote pollinator habitat.

Effects to Threatened and Endangered Species
Disturbed areas will be reseeded using native seed mixes to promote pollinator habitat; therefore, no long-term adverse impacts are anticipated to the Rusty-Patched Bumble Bee and Monarch butterfly.

Removal of trees and any potential rusty patched bumble bee habitat will be completed during the inactive season (November 1 – March 31) to minimize impacts to the northern long eared bat and rusty patched bumble bee.

In order to avoid impacts to the Least Darter, proper erosion and sediment control practices will be implemented and maintained during construction near wetlands and will be incorporated into a stormwater management plan.

Invasive Species
Invasive species will be controlled on-site during construction and landscaping will not include any DNR identified invasive species. Additionally, best management practices will be followed when relocating equipment from other sites.

14. 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.

Scenario 1, 2, 3, and 4
A SHPO database review was requested in November 2021. The database review identified no historic sites within proximity to the AUAR study area. Therefore, there are no impacts to nearby archaeological, historical, and/or architectural resources anticipated as part of this development. A letter from the State Historic Preservation Office is provided in Appendix B.

15. Visual

Scenic views or vistas may include spectacular viewing points along lakes, rivers or bluffs; virgin timber tracts; prairie remnants; geological features; waterfalls; specimen trees; or plots of wildflowers. 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. If any non-routine visual impacts would occur from the anticipated development, this should be discussed here along with appropriate mitigation.

Scenario 1, 2, 3, and 4

The AUAR study area includes existing agricultural property that is not near any unique designated scenic views or vistas. Future development will conform with the zoning regulations for building height, building form, landscape screening, and lighting would be in conformance with City ordinances. No visual impacts are anticipated.

16. 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.

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.

Scenario 1, 2, 3, and 4

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. 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 AUAR 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.

Scenario 1, 2, 3, and 4

The proposed development for any scenario may generate temporary fugitive dust emissions during construction. 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.

17. 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. 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.*

Traffic Generated Noise

Scenario 1, 2, 3, and 4

The AUAR study area is predominantly existing agricultural land near state highways and county roads. The Union Pacific railroad passes though the southern portion of the AUAR study area. Existing traffic noise sources at the site are from the surrounding roadways. Traffic volumes in the AUAR study 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.

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 perceived as twice as loud.

Operational Noise

Scenario 1, 2, 3, and 4

The Lake Elmo Code of Ordinances regulates mechanical noise associated with building operation by the standards set by the MPCA and Washington County.[5] All future development of the study area will be required to comply with these requirements.

Construction Noise

Scenario 1, 2, 3, and 4

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 Lake Elmo Code of Ordinances regulates both the hours of operation for construction equipment and allowable noise levels. All construction and development activities in the AUAR study area must comply with these requirements.

18. Transportation

AUAR Guidance: For AUAR reviews a detailed traffic analysis will be needed, conforming to the MnDOT guidance as listed on the EAW form.

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.

Parking

[5] Source: Lake Elmo, Minnesota, Municipal Code § 9.04.050 (h)

There are no existing parking spaces within the AUAR study area. Proposed parking spaces located in the area north of 34th Street N will be determined when a site plan becomes available. There will be approximately 797 parking stalls for the development south of 34th Street N.

Existing Conditions

The primary existing roadway network within the AUAR study area includes 34th Street (CSAH 14), Ideal Avenue (CSAH 13), and Stillwater Boulevard (CSAH 6). The roadway network is described below.

- **34th Street N (CSAH 14)** is an east-west roadway that runs along the northern boundary of the proposed industrial site and on the southern boundary of the proposed mixed-use site. 34th Street N is a 4-lane divided roadway with turn lanes provided at major intersections. 34th Street N is classified an A-Minor Expander in the Washington County 2040 Comprehensive Plan with a posted speed limit of 55 miles per hour (mph) in the AUAR study area. According to the MnDOT Traffic Mapping Application, the existing Annual Average Daily Traffic (AADT) along 34th Street N is approximately 14,600 vehicles per day (vpd) (2018) west of Ideal Avenue N and 10,400 vpd (2018) east of Ideal Avenue N.
- **Ideal Avenue N (CSAH 13)** is a north-south roadway that runs along the western boundary of the proposed site. Ideal Avenue N is a two-lane undivided roadway south of 34th Street N and a four-lane divided roadway between 34th Street N and 36th Street N. Turn lanes or passing lanes are provided at all intersections. Ideal Avenue N is classified as an A-Minor Reliever, north of 34th Street N and a Major Collector south of 34th Street N in the Washington County 2040 Comprehensive Plan with a posted speed limit of 50 mph north of 34th Street N and 40 mph south of 34th Street N. According to the MnDOT Traffic Mapping Application, the existing Annual Average Daily Traffic (AADT) along Ideal Avenue N is approximately 4,250 vpd (2018) north of 34th Street N and 5,200 vpd (2018) south of 34th Street N.
- **Stillwater Boulevard N (CSAH 6)** generally runs east-west, south of the AUAR study area and turns north at the eastern edge of the study network. Stillwater Boulevard N is a two-lane undivided roadway with right turn lanes provided at intersections. Stillwater Boulevard N is classified as a Major Collector west of Inwood Avenue N and an A-Minor Expander east of Inwood Avenue N in the Washington County 2040 Comprehensive Plan with a posted speed limit of 50 mph. According to the MnDOT Traffic Mapping Application, the existing AADT along Stillwater Boulevard N is 5,400 vpd (2018) west of Inwood Avenue N, and 4,900 vpd (2018) east of Inwood Avenue N.

Traffic Generation

Scenario 1, 2, 3 and 4

Trip generation estimates were based on a review of industrial land uses provided in the manual, Land Use Code (LUC) 154 (High-Cube Transload and Short-Term Storage Warehouse), LUC 820 (Shopping Plaza >150ksf), LUC 821 (Shopping Plaza 40ksf-150ksf), LUC 210 (Single Family Detached Housing), LUC 220 (Multifamily Housing Low-Rise), and LUC 221 (Multifamily Housing Mid-Rise) were determined to be the most appropriate fit for the proposed development in the ITE Trip Generation Manual, 11th Edition. The trip generation for the three scenarios is shown in Table 9. The full traffic study conducted for the AUAR can be found in Appendix C.

Table 9: Trip Generation Forecasts

Scenario	AM Peak Hour			PM Peak Hour			Daily
	Total	In	Out	Total	In	Out	
Scenario 1	450	245	205	805	380	425	10,450
Scenario 2	440	235	205	960	460	500	11,105
Scenario 3	380	250	130	750	330	420	9,790
Scenario 4	95	70	25	120	35	85	1,635

Availability of Transit

There are no transit routes currently serving the AUAR study area.

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.

Scenario 1, 2, 3 and 4

A Traffic Impact Analysis (TIA) was completed in November 2021 based on the projected trip generation of the four proposed scenarios. The results of this study can be found in Appendix C. Based on the detailed findings of the NorthPoint Industrial Park TIA, the area's transportation network is expected to support redevelopment within the AUAR study area with mitigation. The TIA identified improvements that could be constructed to mitigate possible future traffic impacts associated with development within the AUAR study area. Metrics for traffic analysis include intersection delay as measured by Level of Service (LOS) and queue lengths.

The traffic analysis report includes intersection capacity analyses for intersections at site access points along Ideal Avenue N & 34th Street N as well as intersection operations within the vicinity of the project (see locations identified on Figure 16). Based on the results of the TIA capacity analysis, a couple intersections operate poorly in Horizon Year (2040) Scenario 2 without mitigation. Table 10 shows the LOS for the AUAR study area intersections in each analysis scenario. The mitigation determined necessary for 2040 No-Build conditions was included in the No Mitigation analysis for all three 2040 Build Scenarios.

Table 10: Existing and Projected Intersection LOS

Intersection	2021	2025		2040						
		No-Build	Scenarios 1-4	No-Build		Scenario 1	Scenario 2		Scenario 3	Scenario 4
		No Miti	No Miti	No Miti	Miti	No Miti	No Miti	Miti	No Miti	No Miti
A.M. Peak Hour Intersection LOS										
Ideal Avenue N & 34th Street N	A	B	B	B	B	C	C	C	B	B
Ideal Avenue N & 32nd Street N/Site Access 2	A	A	A	A	A	A	A	B	A	A
Ideal Avenue N & 31st Street N/Site Access 3	A	A	A	A	A	A	A	A	A	A
Ideal Avenue N & Stillwater Boulevard N	A	A	A	A	A	A	A	A	A	A
34th Street N & Jamaca Avenue N	A	A	A	A	A	A	A	A	A	A
Ideal Avenue N & 36th Street N	A	A	A	A	A	B	B	A	A	A
34th Street N & Site Access 1	--	--	A	--	--	C	C	C	C	B
P.M. Peak Hour Intersection LOS										
Ideal Avenue N & 34th Street N	B	C	C	C	C	C	C	C	C	C
Ideal Avenue N & 32nd Street N/Site Access 2	B	B	C	C	C	D	C	D	C	C
Ideal Avenue N & 31st Street N/Site Access 3	A	A	B	F	B	C	C	C	C	B
Ideal Avenue N & Stillwater Boulevard N	A	B	B	E	B	C	C	C	B	B
34th Street N & Jamaca Avenue N	A	A	A	B	B	C	D	A	C	B
Ideal Avenue N & 36th Street N	A	A	A	C	C	C	C	C	C	C
34th Street N & Site Access 1	--	--	A	--	--	D	F	C	D	A

Miti=Mitigation

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

Existing (2021) Conditions

- No mitigation necessary

Opening Year (2025) No-Build Conditions

- No mitigation necessary

Opening Year (2025) Build Scenarios 1-4 Conditions

- Install eastbound right and westbound left turn lanes on 34th Street N at site access 1
- Side-Street stop control at all accesses

Horizon Year (2040) No-Build Conditions

- Addition of a southbound left-turn lane at the intersection of Ideal Avenue N & Stillwater Boulevard N
- Signal timing modification at the intersection of 34th Street N & Ideal Avenue N

Horizon Year (2040) Build Scenario 1 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Side-Street stop control at all accesses
- Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted

Horizon Year (2040) Build Scenario 2 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Expansion of 34th Street N to a four-lane cross-section at its intersection with Jamaca Avenue N
- Monitor the roundabout at 34th Street N & Jamaca Avenue N and add a second circulating lane for the eastbound and westbound movements if necessary
- Addition of southbound left-turn lane to site access 1 on 34th Street N
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted

Horizon Year (2040) Build Scenario 3 Conditions

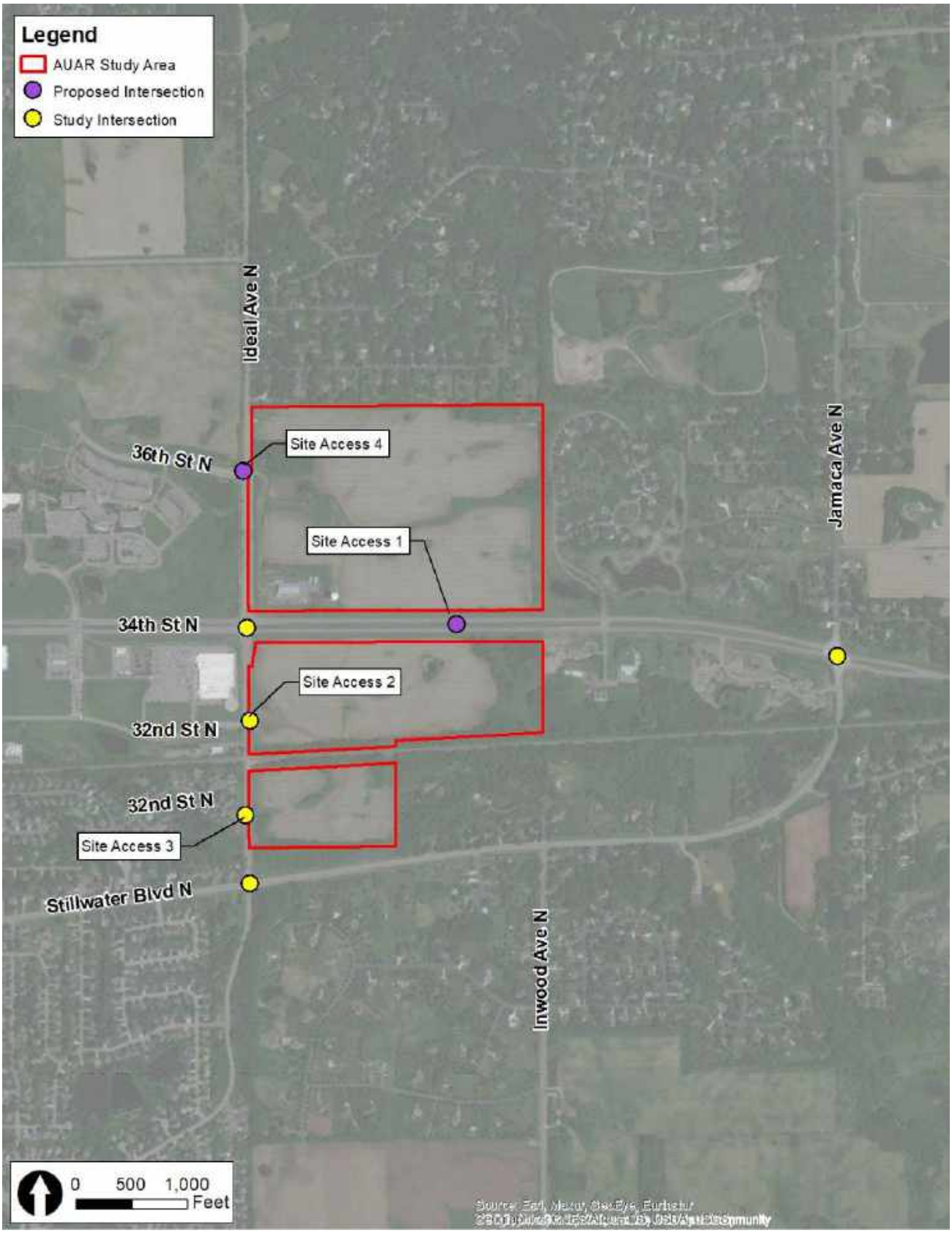
- All Modifications from Horizon Year (2040) No-Build Conditions
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Monitor 34th Street & Site Access 1 as development continues to determine if a signal is warranted

Horizon Year (2040) Build Scenario 4 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions

- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1

Figure 17: Traffic Study Intersections



19. 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."[6] The geographic areas considered for cumulative effects are those areas adjacent to the AUAR study area, and the timeframe considered includes projects that would be constructed in the reasonably foreseeable future.

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.

Washington County is planning to construct road improvements on Ideal Avenue from 34th Street (CSAH 14) to 44th Street in the Cities of Oakdale and Lake Elmo. The project includes improvements to intersection controls, pavement, surface water drainage, and continuing north-south trail segments. The first phase of the project was constructed in 2017 and the second phase of the project is planned for construction in 2022.

The Willowbrook development, located on the northwest corner of the Ideal Avenue N and 36th Street N intersection is anticipated to have a total of 1,410 residential units, composed of single family, townhomes, multifamily apartments and senior housing. Phase 1 is anticipated to be completed by 2025 which includes 114 single family units and 280 townhomes, and all development is anticipated to be completed prior to 2040.

a. 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.

Impacts resulting from the development of the AUAR study area may include wetland impacts and increased traffic to the area. Impacts of the future road project on Ideal Avenue and the Willowbrook residential development may also impact traffic and adjacent water resources;

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

however, the planned future road improvements will result in a cumulative benefit to traffic conditions. All other impacts from these future projects will be addressed via regulatory permitting and approval measures; therefore, they will be individually mitigated to ensure no cumulative impacts occur to environmental and community resources.

20. Other Potential Environmental Impacts

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.

All known environmental effects are addressed in the 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 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.

There were no impacts or mitigation strategies identified in Item 14 and Item 15; therefore, these areas are not included in the Mitigation Plan. The remaining AUAR items have identified regulatory requirements and/or mitigation measures that reduce the level of potential impact of development within the AUAR study area. The following mitigation summary applies to Scenario 1, 2, 3, and 4 unless otherwise specified.

Table 11: Permits and Approvals Required

Unit of Government	Type of Application	Status
Federal		
U.S. Army Corps of Engineers	Section 404	To be applied for, if applicable
State		
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System Stormwater Permit for Construction Activities	To be applied for
	Sanitary Sewer Extension Permit	To be applied for

Unit of Government	Type of Application	Status
	Section 401 Water Quality Certification	To be applied for, if applicable
	Construction Contingency Plan and Response Action Plan approval	To be applied for
Minnesota Department of Natural Resources	Temporary Water Appropriation Permit for Construction Dewatering	To be applied for, if applicable
Regional		
Metropolitan Council	Sewer Extension Permit	To be applied for
Valley Branch Watershed District	Watershed District Permit	To be applied for
	Wetland Conservation Act (WCA) Replacement Plan	To be applied for, if applicable
County		
Washington County	Right-of-Way Permit	To be applied for, if applicable
Local		
City of Lake Elmo	Preliminary/Final Plat	To be applied for
	Building Permit	To be applied for
	Erosion Control, Grading, and Stormwater Permit	To be applied for
	Right-of-Way Permit	To be applied for, if applicable
	Comprehensive Plan Amendment (applies to Scenario 1, 2, and 3)	To be applied for
	Zoning Map Amendment	To be applied for
	Planned Unit Development	To be completed, if applicable
	Conditional Use Permit	To be completed, if applicable
Union Pacific Railroad	Utility Crossing Permit	To be applied for
Xcel Energy	Transmission Line Encroachment Agreement	To be applied for
BP	Gasmain Easement Encroachment Agreement	To be applied for

Table 12: Mitigation Plan

Resource Area	Mitigation
Land Use	Scenario 1, 2, 3, and 4: All four scenarios propose business park and commercial uses in the area south of 34th Street N, which are consistent with the May 2021 Comprehensive Plan Amendment. The area north of 34th Street is guided as Rural Area Development (RAD). Development consistent with Scenarios 1, 2, or 3 will require a Comprehensive Plan Amendment to re-guide the parcels consistent with the proposed development to be included in the MUSA.
	Scenario 1, 2, 3, and 4: Any proposed development in the AUAR study area for Scenario 1, Scenario 2, Scenario 3, or Scenario 4 will require rezoning of the parcels to allow for business park, mixed-use business park, commercial uses and any urban density residential development.
	Scenario 1, 2, 3, and 4: Any future development adjacent to the tributary and wetlands will need to maintain a vegetative buffer to minimize effects to the waterbody and may require watershed district permit approvals if any physical modification of waterbodies is proposed. All proposed development will be required to meet the requirements and standards of the City's adopted Local Surface Water Management Plan that incorporates the VBWD standards by reference.
	Scenario 1, 2, 3, and 4: All development of the parcels south of 34th Street N must follow the standards as established within the adopted Floodplain Ordinance and any standards and regulations, including but not limited to setbacks established by the VBWD rules.
Geology, Soils, and Topography	Scenario 1, 2, 3, and 4: 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 area south of 34th street N, and if needed in the area north of 34th Street N.
	Scenario 1, 2, 3, and 4: During construction, sediment control best management practices such as silt fences, biologs, and silt curtains will be used where appropriate. The proposed development within the AUAR study area will require compliance with the City and watershed district erosion and sediment control standards.
	Scenario 1, 2, 3, and 4: Site specific subsurface investigations should be completed prior to work commencement. If karst conditions are found to be present, follow the Valley Branch Watershed District, City of Lake Elmo, and the Minnesota Pollution Control Agency (MPCA) design guidelines.
	Scenario 1, 2, 3, and 4: Stabilizing vegetation will be established or retained. Placing structures or land alterations near steep slopes will be avoided to the extent practicable. All proper grading permits and site plan approvals will be required.

Resource Area	Mitigation
Water Resources	Scenario 1, 2, 3, and 4: Future infrastructure will be built within the AUAR study area to convey stormwater to stormwater management areas to help achieve the appropriate water quality treatment. As required by the City and VBWD, the quantity and rate of stormwater runoff from the 2-, 10-, and 100-year, 24-hour rainfall events with respective 2.8, 4.2, and 7.3-inch rainfall depths with VBWD-approved time distribution and the 7.2-inch 100-year 10-day snowmelt event.
	Scenario 1, 2, 3, and 4: Stormwater management BMPs will be designed to comply with all City of Lake Elmo and VBWD standards and will comply with all maintenance/monitoring requirements of the City and VBWD.
	Scenario 1, 2, 3, and 4: Best management practices pertaining to stormwater management will be adhered to during construction.
	Scenario 1, 2, 3, and 4: Obtain a permit from the Metropolitan Council and MPCA for a sewer extension and permit to connect.
	Scenario 1, 2, 3, and 4: Obtain a permit from MDH for a watermain installation.
	Scenario 1, 2, 3, and 4: A DNR temporary water appropriation permit will be obtained for any dewatering that will be needed for construction.
	Scenario 1, 2, 3, and 4: Groundwater wells will be properly sealed, if not already sealed, by a licensed well contractor prior to any development within the AUAR study area per MPCA and MDH well sealing requirements.
	Scenario 1, 2, 3, and 4: If any wetland impacts are proposed as part of future development within the AUAR study area, the applicable WCA and/or U.S. Army Corps of Engineers approvals will need to be obtained.
Contamination/ Hazardous Waste	Scenario 1, 2, 3, and 4: Development will 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 in accordance with state regulations and guidelines.
	Scenario 1, 2, 3, and 4: Recycling for residential units and commercial buildings will be conducted in accordance with the 2016 Recycling Law (Minnesota Statutes Chapter 115A, Section 115A.151 and Section 115A.552). Furthermore, Washington County Ordinance 202 (2.83) requires source separation by the generator prior to collection for recycling services.
	Scenario 1, 2, 3, and 4: 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.
	Scenario 1, 2, 3, and 4: A Response Action Plan (RAP) will be developed for any known areas of contamination and a Construction Contingency Plan (CCP) will prepared and implemented during construction.
Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources	Scenario 1, 2, 3, and 4: Tree removal mitigation will be implemented if the maximum allowable amount of tree removal is exceeded as required by City of Lake Elmo's code of ordinances § 154.257.
	Scenario 1, 2, 3, and 4: Removal of trees and any potential rusty patched bumble bee habitat will be completed during the inactive season (November 1 – March 31) to minimize impacts to the northern long eared bat and rusty patched bumble bee.

Resource Area	Mitigation
	Scenario 1, 2, 3, and 4: To avoid impacts to the Least Darter, proper erosion and sediment control practices will be implemented and maintained during construction near wetlands and will be incorporated into a stormwater management plan.
	Scenario 1, 2, 3, and 4: Invasive species will be controlled during site construction.
	Scenario 1, 2, 3, and 4: Pollinator friendly seed mixes will be used to promote pollinator habitat.
Air	Scenario 1, 2, 3, and 4: Construction will generate temporary fugitive dust emissions during construction. These emissions will be controlled by sweeping, watering, sprinkling, as appropriate or as prevailing weather and soil conditions dictate.
Noise	Scenario 1, 2, 3, and 4: Construction activities may result in temporarily elevated noise levels. The Lake Elmo Code of Ordinances regulates both the hours of operation for construction equipment and allowable noise levels. Construction of the proposed project would comply with these requirements.

Resource Area	Mitigation
Transportation	**Opening Year (2025) Build Scenarios 1-4 Conditions** • Install eastbound right and westbound left turn lanes on 34th Street N at site access 1 • Side-Street stop control at all accesses **Horizon Year (2040) No-Build Conditions** • Addition of a southbound left-turn lane at the intersection of Ideal Avenue N & Stillwater Boulevard N • Signal timing modification at the intersection of 34th Street N & Ideal Avenue N **Horizon Year (2040) Build Scenario 1 Conditions** • All Modifications from Horizon Year (2040) No-Build Conditions • Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1 • Side-Street stop control at all accesses • Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted **Horizon Year (2040) Build Scenario 2 Conditions** • All Modifications from Horizon Year (2040) No-Build Conditions • Expansion of 34th Street N to a four-lane cross-section at its intersection with Jamaca Avenue N • Monitor the roundabout at 34th Street N & Jamaca Avenue N and add a second circulating lane for the eastbound and westbound movements if necessary • Addition of southbound left-turn lane to site access 1 on 34th Street N • Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1 • Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted **Horizon Year (2040) Build Scenario 3 Conditions** • All Modifications from Horizon Year (2040) No-Build Conditions • Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1 • Monitor 34th Street & Site Access 1 as development continues to determine if a signal is warranted **Horizon Year (2040) Build Scenario 4 Conditions** • All Modifications from Horizon Year (2040) No-Build Conditions • Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1

Appendix A

NHIS Correspondence (pending)

From:	Peterson, Kestra
To:	Review.NHIS@state.mn.us
Subject:	NHIS Review Request for Cyphers Logistic Park in Lake Elmo, MN
Date:	Thursday, November 18, 2021 1:43:00 PM
Attachments:	StudyArea.pdf

Hello,

Kimley-Horn has been contracted to prepare an AUAR for Cyphers Logistic Park located north and south of 34th Street N and east of Ideal Avenue N on an approximately 190-acre site in Lake Elmo, Washington County, Minnesota. A project location map is attached.

A review of the DNR Natural Heritage Inventory System (LA-965) database was conducted for the AUAR study area and the area within one mile of the project site. This review identified three records within one mile of the project site but no records within the project site itself.

A record for the Red-shouldered Hawk (Buteo lineatus), a state-listed special concern species, is located within a one-mile radius of the project site. The preferred habitat for this species includes large tracts of mature deciduous forest with scattered wetland openings. The site does not contain suitable habitat for the species; therefore, no adverse impacts to the Red-shouldered Hawk are anticipated.

A record for the Least Darter (Etheostoma microperca), a state-listed special concern species, is located within a one-mile radius of the project site. The preferred habitat for this species includes freshwater streams and lakes. The site does not contain suitable habitat for the species; therefore, no adverse impacts to the Least Darter are anticipated.

A record for the Rusty-patched Bumble Bee (Bombus affinis), a federally listed endangered species, is located within a one-mile radius of the project site. The AUAR study area is also entirely within a High Potential Zone for the rusty-patched bumble bee.

There are four areas of Minnesota Biological Survey Sites of Biodiversity Significance and eight native plant communities within a one-mile radius of the project site. Considering none are within the AUAR study area, no adverse impacts in these areas are anticipated.

There are six regionally significant ecological areas (RSEA) within one mile of the project site, one of which is within the AUAR study area, south of 34th Street N. This RSEA is associated with an unnamed DNR stream and unnamed DNR waterbody, which are adjacent to the site. Due to the small amount of overlap between the RSEA and the study area, impacts will be minimal.

Please confirm our conclusions and let us know if you have any questions or need additional information.

Thank you,

Kestra Peterson
Kimley-Horn | 767 Eustis Street, Suite 100, St. Paul, MN 55114
Main: 651-645-4197 | Direct: 651-456-8167

Appendix B

Historic Resources Correspondence

From:	MN_MNIT_Data Request SHPO
To:	Peterson, Kestra
Subject:	RE: Database Search Request
Date:	Wednesday, November 17, 2021 5:58:50 PM
Attachments:	image001.png image005.png image006.png image007.png History.xls

---

Hello Kestra,

Please see attached. Our database has no archaeological records for the given project area.

BTW, I assumed you meant Township 29N, Range 21W for both sections?

Jim

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

SHPO Data Requests
Minnesota State Historic Preservation Office
50 Sherburne Avenue, Suite 203
Saint Paul, MN 55155
(651) 201-3299
datarequestshpo@state.mn.us

purposes of the review a property is considered not eligible for listing in the National Register. These properties may need to be reassessed for eligibility under additional or alternate contexts.
Properties without NR, CEF, SEF, DOE, or CNEF designations in the reports may not have been evaluated and therefore no assumption to their eligibility can be made. Integrity and contexts change over time, therefore any eligibility determination made ten (10) or more years from the date of the current survey are considered out of date and the property will need to be reassessed.
If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic/architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson, Environmental Review Specialist @ 651-201-3285 or by email at kelly.graggjohnson@state.mn.us.
The Minnesota SHPO Archaeology and Historic/Architectural Survey Manuals can be found at https://mn.gov/admin/shpo/identification-evaluation/.

Given the Governor's implementation of Stay Safe MN, SHPO staff will continue to work remotely and be available via phone and email, and the SHPO office will be closed to visitors and unable to accommodate in-person research and deliveries. Mail is being delivered to the office via USPS, FedEx and UPS, however, staff have limited weekly access to sort and process mail. Our office will continue to take file search requests via DataRequestSHPO@state.mn.us. Check SHPO's webpage for the latest updates and we thank you for your continued patience.

From: Peterson, Kestra <Kestra.Peterson@kimley-horn.com>
Sent: Monday, November 15, 2021 2:47 PM
To: MN_MNIT_Data Request SHPO <DataRequestSHPO@state.mn.us>
Subject: Database Search Request

Hello,

I would like to request a database search for a proposed project located in the northeast and southeast quadrants of the 34th Street N/Ideal Avenue N intersection in Lake Elmo (NE ¼ and SE ¼ of Section 16, Township 21N, Range 29W and NW ¼ of Section 21, Township 29N, Range 21W). The location is shown on the attached USGS and existing conditions maps. Please let me know if you need any additional information.

Thank you,
Kestra

Kestra Peterson
Kimley-Horn | 767 Eustis Street, Suite 100, St. Paul, MN 55114
Main: 651-645-4197 | Direct: 651-456-8167

COUNTY	CITYTWP	PROPNAME	ADDRESS	TOWN	RANGE	SECTI	QUARTER	USGS	REPORTNUM	NRHP CE	DOE INVENTNUM
Washington											
	Baytown Twp.										
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SE-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SW-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NE-NW		XX-2020-1H		WA-XXX-001
	Lake Elmo										
		Kern House	11912 Stillwater Blvd N	29	21	21	NE-SE-SE	Stillwater	WA-2018-3H		WA-LEC-020
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SE-SE		XX-2020-1H		WA-XXX-001
Washington											
	Lake Elmo										
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SW-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NE-NW		XX-2020-1H		WA-XXX-001
	Oak Park Heights										
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SE-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SW-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NE-NW		XX-2020-1H		WA-XXX-001
	Oakdale										
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SW-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SE-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NE-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NW		XX-2020-1H		WA-XXX-001
Washington											
	Oakdale										
	Stillwater										
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SW-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	16	SE-SE		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NE-NW		XX-2020-1H		WA-XXX-001
		Trunk Highway 212: Stillwater to the Washington/ Ramsey County Line		29	21	21	NW-NE		XX-2020-1H		WA-XXX-001

Appendix C

Traffic Study

Appendix C
Traffic Impact Analysis

NorthPoint Industrial Park

AUAR

LAKE ELMO, MINNESOTA

JANUARY 2022

Prepared For:

NorthPoint DEVELOPMENT

Prepared By:

Kimley»Horn

Contents

1.0 INTRODUCTION

NorthPoint Development is proposing to develop an approximately 84-acre industrial park located on the southeast corner of the intersection of 34th Street N & Ideal Avenue N and an approximately 96-acre mixed use development on the northeast corner of the intersection of 34th Street N & Ideal Avenue N, in Lake Elmo, MN. The existing site is currently undeveloped. **Exhibit 1** in **Appendix A** shows the project location and study intersections.

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections.

2.0 EXISTING CONDITIONS

2.1 PHYSICAL CHARACTERISTICS

Following provides a description of the public roadways within the study area:

34th Street N (CSAH 14) is an east-west roadway that runs along the northern boundary of the proposed industrial site and on the southern boundary of the proposed mixed-use site. 34th Street N is a 4-lane divided roadway with turn lanes provided at major intersections. 34th Street N is classified an A-Minor Expander in the Washington County 2040 Comprehensive Plan with a posted speed limit of 55 miles per hour (mph) in the study area. According to the MnDOT Traffic Mapping Application, the existing Annual Average Daily Traffic (AADT) along 34th Street N is approximately 14,600 vehicles per day (vpd) (2018) west of Ideal Avenue N and 10,400 vpd (2018) east of Ideal Avenue N.

Ideal Avenue N (CSAH 13) is a north-south roadway that runs along the western boundary of the proposed site. Ideal Avenue is a two-lane undivided roadway south of 34th Street N and a four-lane divided roadway between 34th Street N & 36th Street N. Turn lanes or passing lanes are provided at all intersections. Ideal Avenue is classified as an A-Minor Reliever, north of 34th Street N and a Major Collector south of 34th Street N in the Washington County 2040 Comprehensive Plan with a posted speed limit of 50 mph north of 34th Street N and 40 mph south of 34th Street N. According to the MnDOT Traffic Mapping Application, the existing Annual Average Daily Traffic (AADT) along Ideal Avenue N is approximately 4,250 vpd (2018) north of 34th Street N and 5,200 vpd (2018) south of 34th Street N.

Stillwater Boulevard N (CSAH 6) generally runs east-west, south of the proposed development area and turns north at the eastern edge of the study network. Stillwater Boulevard N is a two-lane undivided roadway with right turn lanes provided at intersections. Stillwater Boulevard N is classified as a Major Collector west of Inwood Avenue N and an A-Minor Expander east of Inwood Avenue N in the Washington County 2040 Comprehensive Plan with a posted speed limit of 50 mph. According to the MnDOT Traffic Mapping Application, the existing AADT along Stillwater Boulevard N is 5,400 vpd (2018) west of Inwood Avenue N, and 4,900 vpd (2018) east of Inwood Avenue N.

Jamaca Avenue N runs north-south, east of the proposed development. Jamaca Avenue N is a two-lane undivided roadway; no turn lanes are provided along Jamaca Avenue N. Jamaca Avenue N is classified as a local roadway in the Lake Elmo 2040 Comprehensive Plan with a posted speed limit of 45 mph. According to the MnDOT Traffic Mapping Application, the existing AADT along Jamaca Avenue N is 1,950 vpd (2019).

36th Street N runs east-west, north of the proposed development. 36th Street N is a two-lane divided roadway; turn lanes are provided at accesses along 36th Street N. 36th Street N is classified as a local roadway in the Lake Elmo 2040 Comprehensive Plan with no posted speed limit. There is no reported AADT along 36th Street N.

32nd Street N runs east-west, west of the proposed development. 32nd Street N is a two-lane undivided roadway that provides access to businesses south of 34th Street N; turn lanes are provided at major accesses along 32nd Street N. 32nd Street N is classified as a local roadway in the Lake Elmo 2040 Comprehensive Plan with no posted speed limit. There is no reported AADT along 32nd Street N.

31st Street N runs east-west, west of the proposed development. 31st Street N is a two-lane undivided roadway; no turn lanes are provided along 31st Street N. 31st Street N is classified as a local roadway in the Lake Elmo 2040 Comprehensive Plan with no posted speed limit. There is no reported AADT along 36th Street N.

Interstate 694 (I-694) is a highway that runs north-south in the study area, west of the of the proposed development. While I-694 will not be analyzed in the study network it is expected that many site trips will utilize I-694 to connect the site with the regional roadway network. I-694 is a four-lane divided highway with grade separated interchanges at intersections with major roadways. I-694 is classified as a Principal Arterial in the Lake Elmo 2040 Comprehensive Plan with a posted speed limit of 60 mph. The AADT along I-694 is 61,505 vpd (2020) north of 34th Street N and 63,000 vpd (2020) south of 34th Street N.

The following is a list of the study intersections analyzed in this report and the intersection control type at each intersection:

- Ideal Avenue N & 36th Street N – Side Street Stop Control
- Ideal Avenue N & 34th Street N – Signalized
- Ideal Avenue N & 32nd Street N – Side Street Stop control
- Ideal Avenue N & 31st Street N – Side Street Stop Control
- Ideal Avenue N & Stillwater Boulevard N – All Way Stop Control
- 34th Street N & Jamaca Avenue N / Stillwater Boulevard N – Roundabout

Exhibit 2 provides the existing geometry and intersection control for the study intersections. Washington County is planning to improve pavement and safety conditions on Ideal Avenue, this will result in an updated geometry for the intersection of Ideal Avenue N & 36th Street N by 2022, which is what will be analyzed for opening year and horizon year conditions.

Weekday AM and PM peak period turning movement counts were collected Tuesday August 10th, 2021 at all study intersections in the study area except for the intersection of Ideal Avenue N and 36th Street N which was under construction at the time of data collection. The turning movement counts are provided in **Appendix B**. **Exhibit 3** provides the existing volumes used in the analysis.

2.2 STUDY AREA

The land uses adjacent to the development are generally low-density single family residential to the north, east, and south and commercial and office to the west.

The study area intersections include Ideal Avenue N & 36th Street N, Ideal Avenue N & 34th Street N, Ideal Avenue N & 32nd Street N, Ideal Avenue N & 31st Street N, Ideal Avenue N & Stillwater Boulevard N, and 34th Street N & Jamaca Avenue N / Stillwater Boulevard N.

3.0 FUTURE CONDITIONS

It is assumed that the 84-acre industrial development will be fully built out by the Opening Year (2025). By the Horizon Year (2040), it is assumed the 96-acre parcel to the north will be developed for a mix of residential, commercial, and industrial use. Therefore, intersection turning movement volumes were projected for the Opening Year (2025) and Horizon Year (2040) based on the data collected in August 2021. The future volume forecast accounted for background growth in regional traffic volumes as well as including traffic from the Willowbrooke development which is under construction.

3.1 FUTURE ROADWAY AND INTERSECTION IMPROVEMENTS

Washington County is planning a future roadway improvement that will impact the surrounding transportation network. County Highway 13 (Ideal Avenue) Phase II is a pavement and safety improvement project, which will change the roadway geometry on Ideal Avenue N, between 36th Street N & 44th Street N. The only study intersection that will be affected is the intersection of Ideal Avenue N & 36th Street N. The following describes the proposed changes at the intersection of Ideal Avenue N & 36th Street N:

- Add a northbound right turn lane
- Add a southbound right turn lane
- Buildout the westbound approach to have a shared left-through lane and a shared through-right turn lane.
- The westbound approach will be realigned to be an east-west roadway, with an access point for the Lake Elmo Public Works Driveway

The proposed roadway improvements are planned for construction in 2022, the improvements were included in the Opening Year (2025) and Horizon Year (2040) conditions. No other roadway improvement projects are currently planned in the study area.

3.2 FUTURE TRAFFIC FORECASTING

Background growth was based on a review of historic AADT volumes and projected 2040 AADT volumes provided in the Lake Elmo 2040 Comprehensive Plan. The 2040 Projections are also consistent with projections from the Washington County 2040 Comprehensive Plan. Historic (2015) and projected (2040) AADT volumes for existing roadways within the study area are summarized in **Table 1**. Based on the data, this study assumed an average annual growth rate of 1.0 percent for 34th Street N and 1.5 percent for Ideal Avenue N & Stillwater Boulevard N. No growth rate was applied to the remaining roads in the study area.

TABLE 1: AADT PROJECTION AND RESPECTIVE GROWTH RATE

Count Location	Lake Elmo 2040 Comprehensive Plan		2040 Forecast Growth Rate
	2015 AADT	2040 AADT	
34th Street N – West of Ideal Avenue N	16,200	21,000	1.0%
34th Street N – East of Stillwater Boulevard/Jamaca Avenue N	11,000	13,300	0.8%
Ideal Avenue N – North of 34th Street N	3,850	4,500	0.6%
Ideal Avenue N – 34th Street to Stillwater Boulevard N	5,000	7,100	1.4%
Stillwater Boulevard N – East of Ideal Avenue N	5,400	8,300	1.7%

In addition to the background growth rates, trips were also added to the network to account for the Willowbrooke Residential development, located on the northwest corner of the Ideal Avenue N & 36th Street N intersection. The development is anticipated to have a total 1,410 residential units, composed of single family, townhomes, multifamily apartments, and senior housing. All development is anticipated to be completed prior to the Horizon Year (2040). It was assumed that phase 1 of development (114 single family units and 280 townhomes) was completed by Opening Year (2025). **Table 2** provides the anticipated trip generation of the Willowbrooke development for the Opening Year (2025) and Horizon Year (2040).

TABLE 2: WILLOWBROOKE DEVELOPMENT TRIP GENERATION

Land Use Description	ITE	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Opening Year (2025) Development									
Single-Family Detached Housing	210	114 Dwelling Units	1,076	21	63	84	71	42	113
Multifamily Housing (Low-Rise)	220	280 Dwelling Units	2,050	8	26	34	99	58	157
TOTAL ROUNDED SITETRIPS			3,125	30	90	120	170	100	270
Horizon Year (2040) Development									
Single-Family Detached Housing	210	302 Dwelling Units	2,851	56	167	223	188	111	299
Multifamily Housing (Low-Rise)	220	342 Dwelling Units	2,503	9	32	41	121	71	192
Multifamily Housing (Mid-Rise)	221	656 Dwelling Units	3,569	61	175	236	176	113	289
Senior Adult Housing-Attached	252	110 Dwelling Units	407	8	14	22	16	13	29
TOTAL ROUNDED SITETRIPS			9,330	135	385	520	500	310	810

The Willowbrooke residential development is anticipated to generate 3,125 daily trips, 120 AM peak hour trips, and 270 PM peak hour trips in the Opening Year. In the Horizon Year, Willowbrooke is anticipated to generate 9,330 daily trips, 520 AM peak hour trips, and 810 PM peak hour trips. The trips were then assigned to the study network based on population hubs and the roadway network. The global distribution was assumed to be:

- 65% to/from the west on 34th Street N
- 5% to/from the east on 34th Street N
- 5% to/from the west on Stillwater Boulevard N
- 5% to/from the south on Inwood Avenue N

Exhibit 4 shows the Opening Year (2025) No-Build peak hour traffic volumes based on the turning movement counts, the assumed growth rate, and the addition of Willowbrooke traffic. **Exhibit 5** shows the Horizon Year (2040) No-Build peak hour traffic volumes.

4.0 PROPOSED DEVELOPMENT

4.1 SITE LOCATION

The proposed development is in the City of Lake Elmo, Minnesota, and is adjacent to low density, single family developments to the east, north, and south. The development consists of 2 primary developments, on the southeast corner of 34th Street N & Ideal Avenue N is the proposed 84-acre industrial development that is anticipated to be operational by 2025, and on the northeast corner of 34th Street N & Ideal Avenue N is the proposed 96-acre mixed-use development that is anticipated to be built out by 2040. The proposed site is currently undeveloped and zoned as Rural Residential (RR). The project location is shown in **Exhibit 1**.

4.2 SITE CIRCULATION

In Phase 1, access to the development is proposed to be provided at three full access connections, two along Ideal Avenue N and one located on 34th Street N. In Phase 2, two full access driveways are proposed in addition to the three accesses from phase 1 of development. Of the additional accesses, one will be located on Ideal Avenue N as an extension of 36th Street N and the last access will be on 34th Street N, directly aligned with the access from phases 1 of development. All four build scenarios have the same proposed site accesses. The proposed site plans are attached in **Appendix C.**

The industrial development is separated by railroad tracks owned by Union Pacific, one building is proposed south of the tracks and three buildings are proposed north of the tracks. There will be no facilities on the proposed site to cross the train tracks, vehicles needing to cross the tracks will need to utilize Ideal Avenue N.

4.3 FUTURE LAND USE

There are four potential development plans, Scenario 1 consists of industrial park, commercial, and multifamily residential. Scenario 2 consists of industrial park, commercial, multifamily residential, and single family residential. Scenario 3 consists of industrial park, commercial, and single family residential. Scenario 4 consists of industrial park, and single family residential. The first three development scenarios have similar land uses and levels of density and scenario 4 is lower density north of 34th Street N. **Table 3** provides a summary of the four development scenarios that are considered in this AUAR.

TABLE 3: AUAR DEVELOPMENT SCENARIOS

Full Development Scenario 1	
Land Use	**Size**
Industrial Business Park	1,753,400 Square Feet
Commercial	91,500 Square Feet
Multifamily Residential Units	400 Dwelling Units
Full Development Scenario 2	
Land Use	**Size**
Industrial Business Park	1,557,380 Square Feet
Commercial	178,596 Square Feet
Multifamily Residential Units	334 Dwelling Units
Single Family Residential Units	38 Dwelling Units
Full Development Scenario 3	
Land Use	**Size**
Industrial Business Park	2,200,000 Square Feet
Commercial	91,500 Square Feet
Single Family Residential Units	56 Dwelling Units
Full Development Scenario 4	
Land Use	**Size**
Industrial Business Park	1,100,000 Square Feet
Single Family Residential Units	10 Dwelling Units

For scenarios 1, 2, 3, and 4, the development south of 34th Street N was assumed to be fully built by the Opening Year (2025). All four scenarios are expected to have the same development, 1,100,000 square feet of industrial business park, in the Opening Year. Full development was assumed for all four scenarios by Horizon Year (2040). The access locations are anticipated to be the same in all four scenarios.

4.4 TRIP GENERATION

Proposed development traffic was based on the Institute of Transportation Engineers' (ITE) *Trip Generation*, 11th Edition. The manual provides peak hour trips rates/equations, inbound-outbound percentages, and truck percentages which were used to estimate the number of daily peak hour, and truck trips that can be attributed to the undeveloped site. Based on a review of industrial land uses provided in the manual, Land Use Code (LUC) 154 (High-Cube Transload and Short-Term Storage Warehouse), LUC 820 (Shopping Plaza >150ksf), LUC 821 (Shopping Plaza 40ksf-150ksf), LUC 210 (Single Family Detached Housing), LUC 220 (Multifamily Housing Low-Rise), and LUC 221 (Multifamily Housing Mid-Rise) were determined to be the most appropriate fit for the proposed development.

LUC 154 was determined to most accurately reflect trip generation of typical NorthPoint industrial development based on a study completed by Priority Engineers, Inc. in December 2019. The NorthPoint Development Traffic Trip Generation Analysis is included in **Appendix D.**

Scenarios 1-4 all have the same phase 1 development. **Table 4** provides a summary of trip generation for development phase 1 of Scenarios 1-4. Based on the trip generation calculation, phase 1 development is anticipated to generate 90 total trips during the AM Peak Hour (70 entering and 20 exiting), 110 total trips during the PM Peak Hour (30 entering, 80 exiting), and 1,540 total daily trips.

TABLE 4: BUILD PHASE 1 TRIP GENERATION SUMMARY

Land Use Description	ITE Land Use Code (LUC)	Intensity/ Units	Vehicle Type	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Opening Year (2025)										
High-Cube Transload and Short-Term Storage Warehouse	154	1,100,000 Square Feet	Passenger Vehicles	1,300	60	10	70	25	75	100
			Trucks	240	10	10	20	5	5	10
Total Rounded Trips				1,540	70	20	90	30	80	110

Table 5 provides a summary of trip generation for development phase 2 of Scenario 1, this is a cumulative table, and includes development from phase 1. Based on the trip generation calculation the phase 2 of scenario 1 is anticipated to generate 450 total trips during the AM Peak Hour (245 entering and 205 exiting), 805 total trips during the PM Peak Hour (380 entering, 425 exiting), and 10,450 total daily trips.

TABLE 5: BUILD SCENARIO 1 PHASE 2 TRIP GENERATION SUMMARY

Land Use Description	ITE Land Use Code (LUC)	Intensity/ Units	Vehicle Type	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Horizon Year (2040)										
High-Cube Transload and Short-Term Storage Warehouse	154	1,753,400 Square Feet	Passenger Vehicles	2,070	95	10	105	45	115	160
			Trucks	385	15	20	35	5	10	15
Shopping Plaza (40-150ksf)	821	91,500 Square Feet	Passenger Vehicles	6,180	100	60	160	235	240	475
Multifamily Housing (Mid-Rise)	221	400 Dwelling Units	Passenger Vehicles	1,815	35	115	150	95	60	155
Total Passenger Vehicle Trips				10,065	230	185	415	375	415	790
Total Truck Trips				385	15	20	35	5	10	15
Total Rounded Trips				10,450	245	205	450	380	425	805

Table 6 provides a summary of trip generation for development phase 2 of Scenario 2, this is a cumulative table, and includes development from phase 1. Based on the trip generation calculation the phase 2 of scenario 2 is anticipated to generate 430 total trips during the AM Peak Hour (230 entering and 200 exiting), 925 total trips during the PM Peak Hour (450 entering, 495 exiting), and 10,940 total daily trips.

TABLE 6: BUILD SCENARIO 2 PHASE 2 TRIP GENERATION SUMMARY

Land Use Description	ITE Land Use Code (LUC)	Intensity/ Units	Vehicle Type	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Horizon Year (2040)										
High-Cube Transload and Short-Term Storage Warehouse	154	1,557,380 Square Feet	Passenger Vehicles	1,840	85	15	95	40	105	140
			Trucks	340	15	15	30	5	10	15
Shopping Plaza (>150ksf)	820	178,596 Square Feet	Passenger Vehicles	6,610	95	55	150	290	315	605
Single Family Detached Housing	210	38 Dwelling Units	Passenger Vehicles	360	5	20	25	25	15	40
Multifamily Housing (Low-Rise)	220	124 Dwelling Units	Passenger Vehicles	835	10	40	50	40	25	65
Multifamily Housing (Mid-Rise)	221	210 Dwelling Units	Passenger Vehicles	955	20	60	80	50	30	80
Total Passenger Vehicle Trips				10,600	215	190	400	445	490	925
Total Truck Trips				340	15	15	30	5	10	15
Total Rounded Trips				10,940	230	200	430	450	495	925

Table 7 provides a summary of trip generation for development phase 2 of Scenario 3, this is a cumulative table, and includes development from phase 1. Based on the trip generation calculation, phase 2 of scenario 3 is anticipated to generate 380 total trips during the AM Peak Hour (250 entering and 130 exiting), 750 total trips during the PM Peak Hour (330 entering, 420 exiting), and 9,790 total daily trips.

TABLE 7: BUILD SCENARIO 3 PHASE 2 TRIP GENERATION SUMMARY

Land Use Description	ITE Land Use Code (LUC)	Intensity/ Units	Vehicle Type	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Horizon Year (2040)										
High-Cube Transload and Short-Term Storage Warehouse	154	2,200,000 Square Feet	Passenger Vehicles	2600	120	20	140	50	150	200
			Trucks	480	20	20	40	10	10	20
Shopping Plaza (40-150ksf)	821	91,500 Square Feet	Passenger Vehicles	6,180	100	60	160	235	240	475
Single Family Detached Housing	210	56 Dwelling Units	Passenger Vehicles	530	10	30	40	35	20	55
Total Passenger Vehicle Trips				9,310	230	110	340	320	410	730
Total Truck Trips				480	20	20	40	10	10	20
Total Rounded Trips				9,790	250	130	380	330	420	750

Table 8 provides a summary of trip generation for development phase 2 of Scenario 4, this is a cumulative table, and includes development from phase 1. Based on the trip generation calculation, phase 2 of scenario 4 is anticipated to generate 95 total trips during the AM Peak Hour (70 entering and 25 exiting), 120 total trips during the PM Peak Hour (35 entering, 85 exiting), and 1,635 total daily trips.

TABLE 8: BUILD SCENARIO 3 PHASE 2 TRIP GENERATION SUMMARY

Land Use Description	ITE Land Use Code (LUC)	Intensity/ Units	Vehicle Type	Daily Trips	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Horizon Year (2040)										
High-Cube Transload and Short-Term Storage Warehouse	154	1,100,000 Square Feet	Passenger Vehicles	1,300	60	10	70	25	75	100
			Trucks	240	10	10	20	5	5	10
Single Family Detached Housing	210	10 Dwelling Units	Passenger Vehicles	95	0	5	5	5	5	10
Total Passenger Vehicle Trips				1,395	60	15	75	30	80	110
Total Truck Trips				240	10	10	20	5	5	10
Total Rounded Trips				1,635	70	25	95	35	85	120

4.5 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Based on regional traffic patterns, development locations, and population hubs, the following global distribution was assumed for passenger vehicles utilizing the proposed industrial and residential development in all three build scenarios:

- 80% to/from the west via 34th Street N
- 10% to/from the east via 34th Street N
- 5% to/from the south via Inwood Avenue N
- 5% to/from the southwest via Stillwater Boulevard N

Exhibits 6, 7, & 8 provide the passenger vehicle distributions for the industrial development and for the Residential Development.

The following global distribution was assumed for the commercial passenger vehicles trips:

- 60% to/from the west via 34th Street N
- 30% to/from the east via 34th Street N
- 5% to/from the south via Inwood Avenue N
- 5% to/from the southwest via Stillwater Boulevard N

Exhibit 9 provides the passenger vehicle distribution for the commercial development.

The following global distribution was assumed for industrial truck trips:

- 100% to/from the west via 34th Street N

Exhibits 10 & 11 provide the truck distributions for the industrial development.

Project trips were assigned to the roadway network based on the trip distribution and the likely travel patterns to and from the site. For the purposes of this analysis, the proposed development traffic was distributed to site accesses based on the proposed site layout, particularly the location and size of development buildings in relation to the proposed site accesses as well as the anticipated site circulation. Scenario 1, 2, 3, & 4 have different trip assignments to the site accesses.

The following lists the trip assignment for various development scenarios:

- **Exhibit 12** – Opening Year (2025) Build Scenarios 1-4 total trip assignment
- **Exhibit 13** – Opening Year (2025) Build Scenarios 1-4 truck trip assignment
- **Exhibit 14** – Horizon Year (2040) Build Scenario 1 total trip assignment
- **Exhibit 15** – Horizon Year (2040) Build Scenario 1 truck trip assignment
- **Exhibit 16** – Horizon Year (2040) Build Scenario 2 total trip assignment
- **Exhibit 17** – Horizon Year (2040) Build Scenario 2 truck trip assignment
- **Exhibit 18** – Horizon Year (2040) Build Scenario 3 total trip assignment
- **Exhibit 19** – Horizon Year (2040) Build Scenario 3 truck trip assignment
- **Exhibit 20** – Horizon Year (2040) Build Scenario 4 total trip assignment
- **Exhibit 21** – Horizon Year (2040) Build Scenario 4 truck trip assignment

4.6 TOTAL TRAFFIC FORECAST

Total traffic volumes were developed from a combination of existing turning movement counts, background growth, adjacent development assignment, and the forecasted site traffic. **Exhibit 22** provides the total traffic volumes for Opening Year (2025) Build Scenarios 1-4. **Exhibits 23, 24, 25, & 26** provide the total traffic volumes for the Horizon Year (2040) Build Scenario 1, 2, 3, & 4, respectively.

5.0 INTERSECTION CAPACITY ANALYSIS

5.1 ANALYSIS SCENARIOS

An intersection capacity analysis was performed at the study intersections to quantify the delay and level of service at the study intersections during the AM and PM peak hours. The capacity analysis was performed using Synchro/SimTraffic traffic models and delays and level of service were evaluated for each of the following scenarios:

- Existing Year (2021)
- Opening Year (2025) No-Build
- Opening Year (2025) Build Scenarios 1-4
- Horizon Year (2040) No-Build
- Horizon Year (2040) Build Scenario 1
- Horizon Year (2040) Build Scenario 2
- Horizon Year (2040) Build Scenario 3
- Horizon Year (2040) Build Scenario 4

5.2 LEVEL OF SERVICE OVERVIEW

Synchro/SimTraffic were used for the analysis. Level of Service (LOS) is a quantitative measure used by traffic engineers to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. Although LOS E is defined as at-capacity, LOS D is generally the minimum acceptable level of operation at an intersection. **Table 9** provides the LOS grading criteria for unsignalized and signalized intersections.

TABLE 9: LEVEL OF SERVICE GRADING CRITERIA

Level of Service	Description	Average Control Delay (seconds/vehicle)	
		Unsignalized	Signalized
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.	0 – 10	0 – 10
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.	> 10 – 15	> 10 – 20
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.	> 15 – 25	> 20 – 35
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.	> 25 – 35	> 35 – 55
E	High control delay; average travel speed no more than 33 percent of free flow speed.	> 35 – 50	> 55 – 80
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.	> 50	> 80

For the purposes of this study, the worst individual movement delay was reported as the overall intersection delay at side street stop control intersections.

5.3 EXISTING YEAR (2021) INTERSECTION ANALYSIS

The Existing Year (2021) Condition analysis was completed to develop an understanding of the baseline operating conditions for the study area. The traffic volumes shown in **Exhibit 3** were used in the Existing Year (2021) analysis. As previously discussed, these volumes were developed based on turning movement counts recorded in August 2021.

Tables 10 – 11 provide a summary of the average delay (seconds per vehicle) and LOS under Existing Year (2021) Conditions for each movement at the study intersections during the AM peak hour and PM peak hour, respectively. The full SimTraffic reports are included in **Appendix E.**

TABLE 10: EXISTING YEAR (2021) AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	19.8	B	8.4	A	2.2	A	9.7	A
		WB	20.3	C	9.2	A	2.6	A		
		NB	11.0	B	6.7	A	2.1	A		
		SB	12.9	B	15.8	B	6.8	A		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	6.4	A	-	-	2.6	A	6.4	A
		WB	-	-	-	-	-	-		
		NB	2.0	A	0.2	A	-	-		
		SB	-	-	4.1	A	3.7	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	6.4	A	-	-	3.3	A	6.4	A
		WB	-	-	-	-	-	-		
		NB	3.0	A	1.6	A	-	-		
		SB	-	-	0.3	A	0.3	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	4.7	A	9.6	A	2.2	A	5.8	A
		WB	4.4	A	9.4	A	3.0	A		
		NB	4.5	A	8.6	A	2.0	A		
		SB	4.8	A	8.1	A	1.9	A		
34th Street N & Jamaca Avenue N	Round-about	EB	2.7	A	5.5	A	2.7	A	5.5	A
		WB	4.5	A	9.3	A	4.6	A		
		NB	2.2	A	4.8	A	1.7	A		
		SB	2.3	A	5.4	A	1.5	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	5.1	A	-	-	1.8	A	5.5	A
		WB	5.5	A	-	-	-	-		
		NB	2.0	A	1.6	A	1.0	A		
		SB	-	-	0.5	A	0.1	A		

TABLE 11: EXISTING YEAR (2021) PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	45.0	D	13.1	B	3.8	A	17.8	B
		WB	45.6	D	11.0	B	1.8	A		
		NB	31.5	C	31.8	C	6.2	A		
		SB	26.3	C	38.3	D	8.8	A		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	11.1	B	-	-	4.6	A	11.1	B
		WB	-	-	-	-	-	-		
		NB	3.8	A	0.3	A	-	-		
		SB	-	-	6.0	A	5.1	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	9.5	A	-	-	3.8	A	9.5	A
		WB	-	-	-	-	-	-		
		NB	4.6	A	1.8	A	-	-		
		SB	-	-	0.8	A	0.6	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	8.5	A	13.0	B	3.5	A	9.5	A
		WB	8.0	A	13.1	B	5.0	A		
		NB	7.0	A	11.2	B	3.9	A		
		SB	10.6	B	13.5	B	3.6	A		
34th Street N & Jamaca Avenue N	Round-about	EB	8.5	A	12.4	B	8.7	A	8.5	A
		WB	6.5	A	11.1	B	5.7	A		
		NB	3.7	A	7.7	A	3.3	A		
		SB	3.6	A	6.0	A	1.4	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	4.9	A	-	-	2.1	A	5.2	A
		WB	5.2	A	-	-	-	-		
		NB	2.5	A	1.5	A	1.9	A		
		SB	-	-	0.6	A	0.1	A		

Based on the analysis, all study intersections are expected to operate at LOS B or better during the AM & PM peak hours. Under Existing Year (2021) Conditions, all intersection movements are anticipated to operate at LOS D or better.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues are anticipated to be accommodated within their respective storage bays.

5.4 OPENING YEAR (2025) NO-BUILD INTERSECTION ANALYSIS

The Opening Year (2025) No-Build Condition analysis was completed to develop an understanding of the baseline operating conditions for the study area without the addition of the development traffic. The traffic volumes shown in **Exhibit 4** were used in the Opening Year (2025) No-Build analysis. As previously discussed, these volumes were developed based on turning movement counts collected in August 2021, traffic projections from the Lake Elmo Comprehensive Plan and the Willowbrooke development. Signal timings were not changed from existing year (2021) conditions.

Tables 12 – 13 provide a summary of the average delay (seconds per vehicle) and LOS under Opening Year (2025) No-Build Conditions for each movement at the study intersections during the AM peak hour and PM peak hour, respectively. The full SimTraffic reports are included in **Appendix F.**

TABLE 12: OPENING YEAR (2025) NO-BUILD AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	20.1	C	10.7	B	2.4	A	11.3	B
		WB	24.9	C	11.9	B	1.8	A		
		NB	11.0	B	8.9	A	3.1	A		
		SB	14.0	B	17.1	B	7.8	A		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	7.4	A	-	-	2.6	A	7.4	A
		WB	-	-	-	-	-	-		
		NB	2.1	A	0.2	A	-	-		
		SB	-	-	4.2	A	4.0	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	6.3	A	-	-	3.6	A	6.3	A
		WB	-	-	-	-	-	-		
		NB	2.9	A	1.6	A	-	-		
		SB	-	-	0.4	A	0.3	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	5.1	A	9.7	A	1.6	A	6.1	A
		WB	4.5	A	10.3	B	3.3	A		
		NB	4.0	A	8.6	A	2.4	A		
		SB	5.2	A	8.5	A	1.8	A		
34th Street N & Jamaca Avenue N	Round-about	EB	2.9	A	5.4	A	2.1	A	5.5	A
		WB	4.7	A	9.3	A	4.2	A		
		NB	1.8	A	4.9	A	1.8	A		
		SB	1.8	A	5.4	A	1.6	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	5.3	A	-	-	2.0	A	5.8	A
		WB	5.8	A	-	-	-	-		
		NB	1.9	A	1.8	A	1.3	A		
		SB	-	-	0.4	A	0.1	A		

TABLE 13: OPENING YEAR (2025) NO-BUILD PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	42.4	D	15.2	B	3.9	A	21.8	C
		WB	47.9	D	16.2	B	2.4	A		
		NB	34.7	C	34.0	C	10.5	B		
		SB	27.3	C	42.3	D	11.1	B		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	11.3	B	-	-	4.5	A	11.3	B
		WB	-	-	-	-	-	-		
		NB	4.1	A	0.4	A	-	-		
		SB	-	-	6.0	A	5.7	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	8.2	A	-	-	3.6	A	8.2	A
		WB	-	-	-	-	-	-		
		NB	4.2	A	1.8	A	-	-		
		SB	-	-	0.9	A	0.6	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	9.4	A	14.1	B	4.1	A	10.6	B
		WB	9.3	A	14.4	B	5.7	A		
		NB	7.6	A	11.3	B	4.2	A		
		SB	12.6	B	15.0	B	3.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	8.9	A	13.4	B	9.3	A	9.0	A
		WB	7.1	A	11.7	B	7.2	A		
		NB	4.3	A	7.6	A	3.2	A		
		SB	3.2	A	6.3	A	1.5	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	7.1	A	-	-	2.3	A	7.1	A
		WB	5.0	A	-	-	-	-		
		NB	3.8	A	1.5	A	1.6	A		
		SB	-	-	0.6	A	0.1	A		

Based on the analysis, all study intersections are expected to operate at LOS C or better during the AM & PM peak hours. Under Opening Year (2025) No-Build Conditions, all intersection movements are anticipated to operate at LOS D or better.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays.

5.5 OPENING YEAR (2025) BUILD SCENARIOS 1-4 INTERSECTION ANALYSIS

The Opening Year (2025) Build Scenarios 1-3 analysis was completed to develop an understanding of the impact of site traffic on the operating conditions for the study area. Scenarios 1-3 have the same anticipated phase 1 development. The traffic volumes shown in **Exhibit 22** were used in the Opening Year (2025) Build Scenarios 1-3 analysis. As previously discussed, these volumes were calculated by adding the Phase 1 trips generated by the site to the Opening Year (2025) No-Build volumes. All site accesses were modeled as side street stop, with one exiting lane. Per conversations with Washington County, site access 1 was assumed to have a 300-foot eastbound right turn lane and a 300-foot westbound left turn lane along 34th Street N. Signal timings were not changed from existing year (2021) conditions.

Tables 14 – 15 provide a summary of the average delay (seconds per vehicle) and LOS under Opening Year (2025) Build Scenarios 1-3 for each movement at the study intersections during the AM peak hour and PM peak hour. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix G**.

TABLE 14: OPENING YEAR (2025) BUILD SCENARIOS 1-3 AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	23.1	C	10.2	B	2.6	A	11.5	B
		WB	27.2	C	11.9	B	2.0	A		
		NB	12.8	B	8.0	A	2.6	A		
		SB	14.8	B	17.9	B	8.1	A		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	6.3	A	-	-	2.5	A	6.3	A
		WB	-	-	-	-	3.3	A		
		NB	1.6	A	0.3	A	0.1	A		
		SB	6.2	A	4.8	A	4.4	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	6.8	A	-	-	2.6	A	6.8	A
		WB	-	-	-	-	-	-		
		NB	3.7	A	1.6	A	1.4	A		
		SB	1.5	A	0.5	A	0.2	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	5.1	A	10.1	B	2.8	A	6.0	A
		WB	4.1	A	9.8	A	3.0	A		
		NB	5.4	A	8.7	A	2.3	A		
		SB	4.9	A	8.4	A	1.9	A		
34th Street N & Jamaca Avenue N	Round-about	EB	3.0	A	5.6	A	3.2	A	5.7	A
		WB	5.1	A	9.4	A	4.1	A		
		NB	1.7	A	5.1	A	1.9	A		
		SB	2.6	A	5.2	A	1.5	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	5.4	A	-	-	2.0	A	5.8	A
		WB	5.8	A	-	-	-	-		
		NB	2.2	A	1.8	A	1.1	A		
		SB	-	-	0.4	A	0.1	A		
34th Street N & Site Access 1	Side Street Stop	EB	-	-	3.0	A	2.2	A	6.9	A
		WB	3.2	A	0.4	A	-	-		
		NB	6.9	A	-	-	-	-		
		SB	-	-	-	-	-	-		

TABLE 15: OPENING YEAR (2025) BUILD SCENARIOS 1-3 PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	44.2	D	18.2	B	4.4	A	23.4	C
		WB	52.1	D	17.9	B	2.6	A		
		NB	35.5	D	29.5	C	8.1	A		
		SB	29.6	C	46.9	D	10.7	B		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	17.3	C	-	-	5.2	A	17.3	C
		WB	-	-	-	-	14.6	B		
		NB	7.3	A	4.2	A	0.7	A		
		SB	10.9	B	6.6	A	5.8	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	12.5	B	-	-	4.3	A	12.5	B
		WB	8.7	A	-	-	7.0	A		
		NB	5.0	A	1.8	A	1.8	A		
		SB	6.4	A	1.1	A	0.8	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	9.6	A	14.3	B	3.9	A	11.1	B
		WB	9.2	A	14.3	B	5.8	A		
		NB	8.2	A	11.7	B	4.6	A		
		SB	14.0	B	16.7	C	4.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	9.7	A	13.9	B	10.4	B	9.0	A
		WB	6.7	A	11.5	B	6.5	A		
		NB	4.0	A	7.8	A	3.5	A		
		SB	3.3	A	6.1	A	1.5	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	7.7	A	-	-	2.3	A	8.1	A
		WB	8.1	A	-	-	-	-		
		NB	4.0	A	1.5	A	1.8	A		
		SB	-	-	0.7	A	0.1	A		
34th Street N & Site Access 1	Side Street Stop	EB	-	-	2.6	A	2.6	A	9.8	A
		WB	-	-	0.6	A	-	-		
		NB	9.8	A	-	-	6.2	A		
		SB	-	-	-	-	-	-		

Based on the analysis, all study intersections are expected to operate at LOS C or better during the AM & PM peak hours. Under Opening Year (2025) Build Scenarios 1-3, all intersection movements are anticipated to operate at LOS D or better. It is not anticipated that a signal will be required at site access 1 on 34th Street N, due to the anticipated trip generation and because all movements at site access 1 are expected to operate acceptably.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 20 feet past the provided storage bay. The anticipated queue will fit within the existing taper. No mitigation is anticipated for the Opening Year (2025) Build Scenario 1 conditions.

5.6 HORIZON YEAR (2040) NO-BUILD INTERSECTION ANALYSIS

The Horizon Year (2040) No-Build Condition analysis was completed to develop an understanding of the baseline operating conditions for the study area in the Horizon Year without the addition of the development traffic. The traffic volumes shown in **Exhibit 5** were used in the Horizon Year (2040) No-Build analysis. As previously discussed, these volumes were developed based on turning movement count collected in August 2021, traffic projections from the Lake Elmo Comprehensive Plan and the Willowbrooke development. Signal timing was optimized at the intersection of 34th Street N & Ideal Avenue N. Signal timings were optimized at the intersection of Ideal Avenue N & 34th Street N.

Tables 16 – 17 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) No-Build Conditions for each movement at the study intersections during the AM peak hour and PM peak hour, respectively. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix H.**

TABLE 16: HORIZON YEAR (2040) NO-BUILD AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	25.6	C	17.0	B	3.1	A	17.7	B
		WB	31.8	C	22.3	C	3.1	A		
		NB	17.0	B	12.7	B	5.2	A		
		SB	16.6	B	19.9	B	15.7	B		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	9.1	A	-	-	3.1	A	9.1	A
		WB	-	-	-	-	-	-		
		NB	2.8	A	0.4	A	-	-		
		SB	-	-	4.4	A	4.4	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	7.8	A	-	-	2.9	A	7.8	A
		WB	-	-	-	-	-	-		
		NB	3.2	A	1.7	A	-	-		
		SB	-	-	0.5	A	0.4	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.0	A	11.7	B	3.2	A	7.0	A
		WB	5.5	A	10.6	B	4.0	A		
		NB	5.7	A	9.3	A	3.1	A		
		SB	6.4	A	9.6	A	2.3	A		
34th Street N & Jamaca Avenue N	Round-about	EB	4.0	A	6.7	A	4.1	A	6.3	A
		WB	5.7	A	10.4	B	5.3	A		
		NB	2.8	A	6.3	A	2.1	A		
		SB	3.4	A	6.3	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	8.0	A	-	-	3.9	A	8.0	A
		WB	7.1	A	-	-	-	-		
		NB	3.2	A	1.9	A	1.5	A		
		SB	-	-	0.9	A	0.2	A		

TABLE 17: HORIZON YEAR (2040) NO-BUILD PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	41.3	D	21.7	C	5.2	A	26.3	C
		WB	47.6	D	27.9	C	4.8	A		
		NB	33.9	C	28.3	C	12.9	B		
		SB	28.6	C	41.0	D	16.6	B		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	19.6	C	-	-	6.9	A	19.6	C
		WB	-	-	-	-	-	-		
		NB	6.9	A	0.5	A	-	-		
		SB	-	-	6.6	A	5.9	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	47.4	E	-	-	51.1	F	51.1	F
		WB	-	-	-	-	-	-		
		NB	7.1	A	2.0	A	-	-		
		SB	-	-	18.6	C	4.1	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	23.9	C	26.3	D	5.3	A	39.1	E
		WB	17.3	C	21.5	C	11.7	B		
		NB	14.7	B	19.1	C	5.8	A		
		SB	93.7	F	92.5	F	12.5	B		
34th Street N & Jamaca Avenue N	Round-about	EB	16.5	C	20.6	C	14.2	B	14.1	B
		WB	14.4	B	18.7	C	14.0	B		
		NB	4.6	A	9.6	A	4.1	A		
		SB	4.1	A	6.8	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	17.5	C	-	-	3.7	A	17.5	C
		WB	14.9	B	-	-	-	-		
		NB	7.5	A	2.0	A	1.9	A		
		SB	-	-	1.3	A	0.2	A		

Based on the analysis, all study intersections and intersection movements are expected to operate at LOS C or better during the AM peak hour. Under Horizon Year (2040) No-Build PM peak hour conditions, all intersections and movements are anticipated to operate at LOS D or better except the following:

- **Ideal Avenue N & Stillwater Boulevard N** – The overall intersection is anticipated to operate at LOS E and the southbound left and through movements are expected to operate at LOS F. The long southbound delays are caused by the southbound approach, specifically the shared left-through lane being over capacity
- **Ideal Avenue N & 31st Street N** – The overall intersection delay is reported as the worst individual movement. The eastbound left is anticipated to operate at LOS E and the eastbound right is anticipated to operate at LOS F. These delays are caused by southbound queues backing into the intersection from Ideal Avenue N & Stillwater Boulevard N.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except for the following in the PM peak hour:

- **Ideal Avenue N & 34th Street N** – The northbound left 95th percentile queue is anticipated to extend past the provided storage capacity by approximately 25 feet. This anticipated queue can be accommodated within the taper of the turn lane.

- **Ideal Avenue N & 34th Street N** – The southbound approach is anticipated to have excessive queueing, with queues potentially impacting operations at the upstream intersection of Ideal Avenue N & 31st Street N. As previously mentioned, this is a result of the existing geometry being over capacity for the southbound approach.

The southbound approach at Ideal Avenue N & Stillwater Boulevard N was expanded to include a dedicated left turn lane, a dedicated through lane, and a dedicated right turn lane to mitigate operational issues in the Horizon Year (2040) No-Build Conditions. **Tables 18 – 19** provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) No-Build Conditions with mitigation for each movement at the study intersections during the AM & PM peak hour, respectively. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix I.**

TABLE 18: HORIZON YEAR (2040) NO-BUILD MITIGATION AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	26.9	C	16.2	B	2.9	A	18.0	B
		WB	31.2	C	21.7	C	3.0	A		
		NB	18.6	B	14.3	B	4.9	A		
		SB	17.7	B	20.7	C	15.8	B		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	8.8	A	-	-	3.2	A	8.8	A
		WB	-	-	-	-	-	-		
		NB	2.5	A	0.4	A	-	-		
		SB	-	-	4.5	A	4.2	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	6.9	A	-	-	3.4	A	6.9	A
		WB	-	-	-	-	-	-		
		NB	3.1	A	1.6	A	-	-		
		SB	-	-	0.5	A	0.3	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.7	A	11.4	B	2.6	A	6.7	A
		WB	5.9	A	10.3	B	3.7	A		
		NB	6.0	A	9.7	A	3.1	A		
		SB	5.5	A	8.6	A	2.2	A		
34th Street N & Jamaca Avenue N	Round-about	EB	3.9	A	6.9	A	4.0	A	6.8	A
		WB	6.3	A	11.2	B	5.8	A		
		NB	2.7	A	5.9	A	2.0	A		
		SB	4.1	A	6.8	A	1.8	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	9.2	A	-	-	6.1	A	9.2	A
		WB	8.2	A	-	-	-	-		
		NB	3.6	A	1.5	A	1.1	A		
		SB	-	-	0.9	A	0.2	A		

TABLE 19: HORIZON YEAR (2040) NO-BUILD MITIGATION PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	40.9	D	21.5	C	5.1	A	26.4	C
		WB	42.6	D	28.4	C	4.5	A		
		NB	32.3	C	29.0	C	12.4	B		
		SB	28.5	C	41.9	D	18.2	B		
Ideal Avenue N & 32nd Street N	Side Street Stop	EB	22.5	C	-	-	7.0	A	22.5	C
		WB	-	-	-	-	-	-		
		NB	5.4	A	0.5	A	-	-		
		SB	-	-	6.6	A	6.5	A		
Ideal Avenue N & 31st Street N	Side Street Stop	EB	12.4	B	-	-	4.8	A	12.4	B
		WB	-	-	-	-	-	-		
		NB	5.0	A	2.0	A	-	-		
		SB	-	-	1.1	A	0.7	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	16.8	C	20.9	C	5.4	A	14.4	B
		WB	15.8	C	19.9	C	9.6	A		
		NB	12.9	B	18.6	C	6.0	A		
		SB	16.2	C	12.9	B	4.7	A		
34th Street N & Jamaca Avenue N	Round-about	EB	15.7	C	19.9	C	15.6	C	14.1	B
		WB	14.5	B	19.4	C	14.4	B		
		NB	5.7	A	9.1	A	4.2	A		
		SB	4.5	A	6.4	A	1.6	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	15.2	C	-	-	5.3	A	15.2	C
		WB	14.7	B	-	-	-	-		
		NB	7.5	A	1.9	A	1.8	A		
		SB	-	-	1.2	A	0.2	A		

Based on the analysis, all study intersections are expected to operate at LOS C or better during the AM & PM peak hours. Under Horizon Year (2040) No-Build with Mitigation, all intersection movements are anticipated to operate at LOS D or better.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 10 feet past the provided storage bay. The anticipated queue will fit within the existing taper.

5.7 HORIZON YEAR (2040) BUILD SCENARIO 1 INTERSECTION ANALYSIS

The Horizon Year (2040) Build Scenario 1 Condition analysis was completed to develop an understanding of the impact of site traffic on the operating conditions for the study area. The traffic volumes shown in **Exhibit 23** were used in the Horizon Year (2040) Build Scenario 1 analysis. As previously discussed, these volumes were calculated by adding the Phase 2 of Scenario 1 trips generated by the site to the Horizon Year (2040) No-Build volumes. The same geometry and intersection control was used as in the Horizon Year (2040) No-Build model (the southbound approach at the intersection of Ideal Avenue N & Stillwater Boulevard N was expanded to three approach lanes and signal timing was optimized at the intersection of 34th Street N & Ideal Avenue N). All site accesses were modeled as side street stop, with one exiting lane. Site Access 1 was modeled with left and right turn lanes on 34th Street N due to the high speeds along the corridor.

Tables 20 – 21 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) Build Scenario 1 Conditions for each movement at the study intersections during the AM & PM peak hours. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix J**.

TABLE 20: HORIZON YEAR (2040) BUILD SCENARIO 1 AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	31.2	C	20.9	C	3.3	A	21.6	C
		WB	33.8	C	24.9	C	3.6	A		
		NB	21.6	C	17.4	B	6.5	A		
		SB	20.0	B	24.0	C	21.1	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	9.8	A	-	-	3.4	A	9.8	A
		WB	-	-	-	-	3.4	A		
		NB	2.5	A	0.5	A	0.3	A		
		SB	6.5	A	5.4	A	4.7	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	9.3	A	-	-	3.5	A	9.3	A
		WB	-	-	-	-	-	-		
		NB	3.2	A	1.8	A	1.6	A		
		SB	2.7	A	0.7	A	0.4	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	7.2	A	11.1	B	2.9	A	6.8	A
		WB	4.6	A	10.9	B	4.0	A		
		NB	6.6	A	10.0	A	2.8	A		
		SB	5.6	A	8.2	A	2.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	4.4	A	7.4	A	4.1	A	7.0	A
		WB	6.5	A	11.2	B	6.7	A		
		NB	2.7	A	6.4	A	2.2	A		
		SB	2.9	A	6.0	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	8.5	A	-	-	8.1	A	10.5	B
		WB	10.5	B	-	-	-	-		
		NB	3.7	A	1.6	A	1.4	A		
		SB	-	-	1.2	A	0.1	A		
34th Street N & Site Access 1	Side Street Stop	EB	9.5	A	4.4	A	4.0	A	24.1	C
		WB	3.3	A	0.8	A	0.3	A		
		NB	24.1	C	-	-	-	-		
		SB	20.6	C	-	-	5.6	A		

TABLE 21: HORIZON YEAR (2040) BUILD SCENARIO 1 PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	47.1	D	29.3	C	7.0	A	32.6	C
		WB	47.0	D	36.7	D	7.3	A		
		NB	39.4	D	27.2	C	15.4	B		
		SB	29.5	C	45.7	D	25.1	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	27.3	D	-	-	7.4	A	27.3	D
		WB	-	-	-	-	24.0	C		
		NB	8.2	A	5.9	A	0.7	A		
		SB	12.2	B	7.3	A	7.0	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	18.4	C	-	-	5.9	A	18.4	C
		WB	17.4	C	-	-	8.0	A		
		NB	5.5	A	1.9	A	1.9	A		
		SB	7.5	A	1.3	A	1.0	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	24.0	C	27.7	D	6.0	A	17.1	C
		WB	16.3	C	22.4	C	12.1	B		
		NB	18.1	C	20.0	C	5.9	A		
		SB	19.8	C	14.5	B	5.8	A		
34th Street N & Jamaca Avenue N	Round-about	EB	20.2	C	24.0	C	17.9	C	19.4	C
		WB	22.9	C	27.6	D	22.8	C		
		NB	6.7	A	9.5	A	4.4	A		
		SB	4.2	A	8.1	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	14.8	B	-	-	6.5	A	19.3	C
		WB	19.3	C	-	-	-	-		
		NB	7.6	A	2.2	A	2.1	A		
		SB	-	-	1.4	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	10.8	B	4.1	A	4.0	A	27.0	D
		WB	-	-	1.1	A	1.3	A		
		NB	18.1	C	-	-	9.4	A		
		SB	27.0	D	-	-	18.9	C		

Based on the analysis, all study intersections are expected to operate at LOS D or better during the AM & PM peak hours. Under Horizon Year (2040) Build Scenario 1, all intersection movements are anticipated to operate at LOS D or better. 34th Street N & site access 1 has acceptable side street delays in the peak hours but the intersection should be monitored as development occurs on the north side of 34th Street N.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 85 feet past the provided storage bay. The queue is anticipated to fit within the existing taper. No mitigation is anticipated for the Opening Year (2025) Build Scenario 1 conditions.

5.8 HORIZON YEAR (2040) BUILD SCENARIO 2 INTERSECTION ANALYSIS

The Horizon Year (2040) Build Scenario 2 Condition analysis was completed to develop an understanding of the impact of site traffic on the operating conditions for the study area. The traffic volumes shown in **Exhibit 24** were used in the Horizon Year (2040) Build Scenario 2 analysis. As previously discussed, these volumes were calculated by adding the Phase 2 of Scenario 2 trips generated by the site to the Horizon Year (2040) No-Build volumes. The same geometry and intersection control was used as in the Horizon Year (2040) No-Build model (the southbound approach at the intersection of Ideal Avenue N & Stillwater Boulevard N was expanded to three approach lanes and signal timing was optimized at the intersection of 34th Street N & Ideal Avenue N). All site accesses were modeled as side street stop, with one exiting lane. Site Access 1 was modeled with left and right turn lanes on 34th Street N due to the high speeds along the corridor.

Tables 22 – 23 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) Build Scenario 2 Conditions for each movement at the study intersections during the AM & PM peak hours. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix K**.

TABLE 22: HORIZON YEAR (2040) BUILD SCENARIO 2 AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	29.2	C	19.5	B	3.1	A	21.1	C
		WB	35.4	D	23.9	C	4.0	A		
		NB	21.1	C	16.5	B	4.5	A		
		SB	18.8	B	23.3	C	21.7	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	8.4	A	-	-	3.0	A	8.4	A
		WB	-	-	-	-	3.3	A		
		NB	2.7	A	0.4	A	0.4	A		
		SB	6.4	A	5.3	A	4.7	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	8.0	A	-	-	3.5	A	8.0	A
		WB	-	-	-	-	-	-		
		NB	4.3	A	1.7	A	1.3	A		
		SB	2.4	A	0.7	A	0.4	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.3	A	11.2	B	2.4	A	6.5	A
		WB	4.9	A	10.5	B	3.9	A		
		NB	5.8	A	9.5	A	2.9	A		
		SB	5.2	A	7.9	A	2.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	6.2	A	8.0	A	5.5	A	7.2	A
		WB	6.3	A	11.2	B	6.8	A		
		NB	2.5	A	5.6	A	2.2	A		
		SB	3.7	A	6.7	A	1.6	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	9.4	A	-	-	8.1	A	11.2	B
		WB	11.2	B	-	-	-	-		
		NB	3.9	A	1.9	A	1.3	A		
		SB	-	-	1.1	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	8.8	A	4.3	A	3.3	A	18.7	C
		WB	2.1	A	0.8	A	0.4	A		
		NB	15.0	B	-	-	-	-		
		SB	18.7	C	-	-	6.0	A		

TABLE 23: HORIZON YEAR (2040) BUILD SCENARIO 2 PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	48.0	D	29.2	C	6.6	A	33.0	C
		WB	50.4	D	38.6	D	8.4	A		
		NB	38.8	D	33.4	C	14.7	B		
		SB	27.7	C	46.3	D	24.8	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	22.4	C	-	-	7.7	A	22.4	C
		WB	-	-	-	-	17.5	C		
		NB	8.0	A	6.0	A	0.7	A		
		SB	12.1	B	7.4	A	7.0	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	20.5	C	-	-	5.8	A	20.5	C
		WB	15.1	C	-	-	7.7	A		
		NB	6.3	A	2.0	A	1.8	A		
		SB	5.9	A	1.2	A	0.9	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	24.8	C	28.8	D	5.7	A	16.9	C
		WB	15.8	C	22.3	C	11.2	B		
		NB	15.7	C	19.4	C	6.4	A		
		SB	20.0	C	13.4	B	5.6	A		
34th Street N & Jamaca Avenue N	Round-about	EB	40.4	E	45.9	E	43.5	E	32.5	D
		WB	37.2	E	40.6	E	40.0	E		
		NB	6.1	A	10.3	B	4.2	A		
		SB	5.2	A	7.2	A	1.8	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	17.5	C	-	-	6.5	A	18.7	C
		WB	18.7	C	-	-	-	-		
		NB	8.0	A	2.1	A	2.3	A		
		SB	-	-	1.5	A	0.3	A		
34th Street N & Site Access 1	Side Street Stop	EB	11.8	B	4.1	A	3.6	A	61.0	F
		WB	-	-	1.2	A	1.4	A		
		NB	20.7	C	-	-	9.3	A		
		SB	61.0	F	-	-	48.8	E		

Based on the analysis, all study intersections and intersection movements are expected to operate at LOS C or better during the AM peak hour. Under Horizon Year (2040) Build Scenario 2 PM peak hour conditions, all intersections and movements are anticipated to operate at LOS D or better except the following:

- **34th Street N & Jamaca Avenue N** –The eastbound and westbound approaches are expected to operate at LOS E. This is caused by increased east-west volume along 34th Street N nearing capacity of the roundabout.
- **34th Street N & Site Access 1** – The overall intersection delay is reported as the worst individual movement. The southbound left is anticipated to operate at LOS F and the southbound right is anticipated to operate at LOS E. These delays are caused by increased east-west volumes and only one exiting lane at the site access.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 70 feet past the provided storage bay. The queue is anticipated to fit within the existing taper. Required mitigation is consistent with Horizon Year (2040) conditions.

The following mitigation was analyzed to improve operations at intersections with undesirable LOS:

- 34th Street N was expanded to a four-lane cross section through Jamaca Avenue N.
- A second through lane was added to the roundabout at 34th Street N & Jamaca Avenue N to increase capacity.
- The southbound approach at Access 1 was modeled with a dedicated southbound left turn lane and a dedicated southbound right turn lane.

Tables 24 – 25 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) Build Scenario 2 Conditions with mitigation for each movement at the study intersections during the AM & PM peak hour, respectively. The full SimTraffic reports are included in **Appendix L.**

TABLE 24: HORIZON YEAR (2040) BUILD SCENARIO 2 MITIGATED AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	29.8	C	21.2	C	3.3	A	20.8	C
		WB	34.7	C	24.5	C	3.7	A		
		NB	21.6	C	19.5	B	5.6	A		
		SB	20.3	C	22.5	C	18.6	B		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	11.6	B	-	-	3.2	A	11.6	B
		WB	-	-	-	-	3.9	A		
		NB	2.6	A	0.5	A	0.2	A		
		SB	6.8	A	5.3	A	4.7	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	8.1	A	-	-	3.0	A	8.1	A
		WB	-	-	-	-	-	-		
		NB	3.4	A	1.8	A	1.9	A		
		SB	2.3	A	0.8	A	0.3	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.4	A	11.7	B	3.0	A	6.7	A
		WB	5.4	A	11.2	B	4.1	A		
		NB	6.7	A	9.8	A	2.8	A		
		SB	5.5	A	8.4	A	2.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	2.6	A	5.1	A	1.9	A	5.1	A
		WB	4.7	A	8.0	A	2.6	A		
		NB	2.8	A	6.9	A	2.2	A		
		SB	3.6	A	5.7	A	1.9	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	8.8	A	-	-	5.6	A	9.9	A
		WB	9.9	A	-	-	-	-		
		NB	3.8	A	1.8	A	1.5	A		
		SB	-	-	1.1	A	0.1	A		
34th Street N & Site Access 1	Side Street Stop	EB	8.7	A	4.1	A	3.6	A	19.6	C
		WB	2.9	A	0.8	A	0.3	A		
		NB	19.5	C	-	-	-	-		
		SB	19.6	C	-	-	3.8	A		

TABLE 25: HORIZON YEAR (2040) BUILD SCENARIO 2 MITIGATED PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	48.8	D	28.5	C	6.4	A	34.6	C
		WB	49.7	D	39.6	D	8.1	A		
		NB	46.8	D	31.2	C	19.4	B		
		SB	29.6	C	44.6	D	28.4	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	29.2	D	-	-	7.9	A	29.2	D
		WB	-	-	-	-	18.5	C		
		NB	7.8	A	6.2	A	0.8	A		
		SB	11.7	B	7.1	A	6.9	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	16.5	C	-	-	5.9	A	16.5	C
		WB	15.0	B	-	-	8.1	A		
		NB	5.5	A	2.0	A	2.0	A		
		SB	5.5	A	1.2	A	0.9	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	25.5	D	28.9	D	5.8	A	17.3	C
		WB	17.2	C	22.3	C	11.5	B		
		NB	16.0	C	21.2	C	6.2	A		
		SB	20.4	C	12.9	B	5.5	A		
34th Street N & Jamaca Avenue N	Round-about	EB	5.5	A	8.9	A	4.2	A	7.4	A
		WB	6.8	A	9.6	A	3.3	A		
		NB	7.5	A	10.9	B	4.3	A		
		SB	4.5	A	7.6	A	1.9	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	19.5	C	-	-	6.5	A	19.5	C
		WB	17.2	C	-	-	-	-		
		NB	7.8	A	2.3	A	2.2	A		
		SB	-	-	1.4	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	10.0	A	3.6	A	2.9	A	24.7	C
		WB	-	-	1.4	A	1.5	A		
		NB	18.1	C	-	-	9.7	A		
		SB	24.7	C	-	-	9.1	A		

Based on the analysis, all study intersections are expected to operate at LOS D or better during the AM & PM peak hours. Under Opening Year (2025) Build Scenarios 1-3, all intersection movements are anticipated to operate at LOS D or better. 34th Street N & site access 1 has acceptable side street delays with the addition of dedicated turn lanes on the side streets in the peak hours, but the intersection should be monitored as development occurs to determine if a signal is required.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 120 feet past the provided storage bay in the pm peak hour. If these volumes are realized, it may be necessary to restripe the northbound approach to include a longer storage capacity, however it is anticipated this can be done within the existing cross section.

5.9 HORIZON YEAR (2040) BUILD SCENARIO 3 INTERSECTION ANALYSIS

The Horizon Year (2040) Build Scenario 3 Condition analysis was completed to develop an understanding of the impact of site traffic on the operating conditions for the study area. The traffic volumes shown in **Exhibit 25** were used in the Horizon Year (2040) Build Scenario 3 analysis. As previously discussed, these volumes were calculated by adding the Phase 2 of Scenario 3 trips generated by the site to the Horizon Year (2040) No-Build volumes. The same geometry and intersection control was used as in the Horizon Year (2040) No-Build model (the southbound approach at the intersection of Ideal Avenue N & Stillwater Boulevard N was expanded to three approach lanes and signal timing was optimized at the intersection of 34th Street N & Ideal Avenue N). All site accesses were modeled as side street stop, with one exiting lane. Site Access 1 was modeled with left and right turn lanes on 34th Street N due to the high speeds along the corridor.

Tables 26 – 27 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) Build Scenario 3 Conditions for each movement at the study intersections during the AM & PM peak hours. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix M**.

TABLE 26: HORIZON YEAR (2040) BUILD SCENARIO 3 AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	29.5	C	19.5	B	3.2	A	20.0	C
		WB	32.1	C	25.2	C	3.0	A		
		NB	19.8	B	15.1	B	5.6	A		
		SB	19.1	B	22.2	C	17.7	B		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	8.7	A	-	-	3.1	A	8.7	A
		WB	-	-	-	-	3.5	A		
		NB	2.4	A	0.4	A	0.3	A		
		SB	5.9	A	5.1	A	5.3	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	6.9	A	-	-	3.3	A	6.9	A
		WB	-	-	-	-	-	-		
		NB	3.8	A	1.7	A	1.6	A		
		SB	2.3	A	0.8	A	0.3	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.8	A	11.2	B	3.0	A	6.7	A
		WB	5.2	A	11.1	B	3.9	A		
		NB	6.6	A	9.8	A	2.8	A		
		SB	5.5	A	8.3	A	2.4	A		
34th Street N & Jamaca Avenue N	Round-about	EB	4.7	A	8.0	A	4.6	A	7.0	A
		WB	6.5	A	11.0	B	6.0	A		
		NB	2.5	A	6.1	A	2.2	A		
		SB	3.6	A	6.5	A	1.8	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	8.0	A	-	-	3.9	A	8.7	A
		WB	8.7	A	-	-	-	-		
		NB	3.9	A	1.7	A	1.3	A		
		SB	-	-	1.0	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	8.9	A	4.4	A	3.3	A	21.7	C
		WB	1.4	A	0.8	A	0.4	A		
		NB	18.0	C	-	-	-	-		
		SB	21.7	C	-	-	7.8	A		

TABLE 27: HORIZON YEAR (2040) BUILD SCENARIO 3 PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	43.5	D	27.5	C	6.0	A	31.4	C
		WB	43.8	D	36.1	D	8.5	A		
		NB	38.5	D	34.4	C	16.9	B		
		SB	28.7	C	46.3	D	23.5	C		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	23.4	C	-	-	7.2	A	23.4	C
		WB	-	-	-	-	16.4	C		
		NB	7.9	A	5.4	A	0.7	A		
		SB	11.3	B	7.3	A	6.4	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	16.9	C	-	-	6.4	A	16.9	C
		WB	16.1	C	-	-	8.1	A		
		NB	5.6	A	1.9	A	1.6	A		
		SB	7.8	A	1.2	A	1.0	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	16.6	C	21.1	C	4.9	A	13.7	C
		WB	14.2	B	19.7	C	9.1	A		
		NB	11.2	B	16.1	C	6.0	A		
		SB	15.7	C	12.9	B	5.0	A		
34th Street N & Jamaca Avenue N	Round-about	EB	25.4	D	28.6	D	25.4	D	20.2	C
		WB	21.2	C	26.1	D	20.7	C		
		NB	6.4	A	10.0	A	4.4	A		
		SB	3.8	A	7.3	A	1.6	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	16.9	C	-	-	7.0	A	17.6	C
		WB	17.6	C	-	-	-	-		
		NB	7.6	A	2.1	A	1.9	A		
		SB	-	-	1.4	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	9.7	A	3.8	A	2.8	A	28.8	D
		WB	-	-	1.0	A	1.0	A		
		NB	17.3	C	-	-	10.3	B		
		SB	28.8	D	-	-	18.4	C		

Based on the analysis, all study intersections are expected to operate at LOS D or better during the AM & PM peak hours. Under Horizon Year (2040) Build Scenario 3, all intersection movements are anticipated to operate at LOS D or better. 34th Street N & site access 1 has acceptable side street delays in the peak hours but the intersection should be monitored as development occurs on the north side of 34th Street N.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 60 feet past the provided storage bay in the PM peak hour. If these volumes are realized, it may be necessary to restripe the northbound approach to include a longer storage capacity, however it is anticipated this can be done within the existing cross section.

5.10 HORIZON YEAR (2040) BUILD SCENARIO 4 INTERSECTION ANALYSIS

The Horizon Year (2040) Build Scenario 4 Condition analysis was completed to develop an understanding of the impact of site traffic on the operating conditions for the study area. The traffic volumes shown in **Exhibit 26** were used in the Horizon Year (2040) Build Scenario 4 analysis. As previously discussed, these volumes were calculated by adding the Phase 2 of Scenario 4 trips generated by the site to the Horizon Year (2040) No-Build volumes. The same geometry and intersection control was used as in the Horizon Year (2040) No-Build model (the southbound approach at the intersection of Ideal Avenue N & Stillwater Boulevard N was expanded to three approach lanes and signal timing was optimized at the intersection of 34th Street N & Ideal Avenue N). All site accesses were modeled as side street stop, with one exiting lane. Site Access 1 was modeled with left and right turn lanes on 34th Street N due to the high speeds along the corridor.

Tables 28 – 29 provide a summary of the average delay (seconds per vehicle) and LOS under Horizon Year (2040) Build Scenario 4 Conditions for each movement at the study intersections during the AM & PM peak hours. The movements that are anticipated to operate at LOS E are shown in yellow and the movements that are anticipated to operate at LOS F are shown in red. The full SimTraffic reports are included in **Appendix N**.

TABLE 28: HORIZON YEAR (2040) BUILD SCENARIO 4 AM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	24.9	C	16.5	B	3.1	A	17.3	B
		WB	35.3	D	21.1	C	2.8	A		
		NB	17.5	B	13.5	B	4.4	A		
		SB	17.6	B	20.4	C	15.6	B		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	8.7	A	-	-	3.0	A	8.7	A
		WB	-	-	-	-	4.0	A		
		NB	2.6	A	0.5	A	0.2	A		
		SB	6.4	A	5.3	A	5.0	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	7.4	A	-	-	3.0	A	7.4	A
		WB	-	-	-	-	-	-		
		NB	4.0	A	1.7	A	1.7	A		
		SB	2.3	A	0.6	A	0.5	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	6.7	A	11.4	B	2.5	A	6.6	A
		WB	5.4	A	10.4	B	4.0	A		
		NB	5.6	A	9.3	A	2.8	A		
		SB	5.2	A	8.5	A	2.2	A		
34th Street N & Jamaca Avenue N	Round-about	EB	4.8	A	6.9	A	4.9	A	6.3	A
		WB	5.5	A	10.4	B	6.1	A		
		NB	1.6	A	5.0	A	2.0	A		
		SB	2.7	A	5.7	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	9.6	A	-	-	4.2	A	9.6	A
		WB	8.0	A	-	-	-	-		
		NB	3.3	A	1.8	A	1.2	A		
		SB	-	-	0.9	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	-	-	3.6	A	2.8	A	10.9	B
		WB	2.9	A	0.4	A	-	-		
		NB	10.9	B	-	-	-	-		
		SB	-	-	-	-	-	-		

TABLE 29: HORIZON YEAR (2040) BUILD SCENARIO 3 PM LOS SUMMARY

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Ideal Avenue N & 34th Street N	Signal	EB	42.7	D	23.8	C	6.1	A	28.8	C
		WB	48.9	D	30.1	C	4.3	A		
		NB	39.0	D	29.1	C	14.0	B		
		SB	30.2	C	45.8	D	19.2	B		
Ideal Avenue N & 32nd Street N/Site Access 2	Side Street Stop	EB	20.2	C	-	-	7.1	A	20.6	C
		WB	-	-	-	-	20.6	C		
		NB	9.2	A	5.5	A	0.7	A		
		SB	10.9	B	7.1	A	6.7	A		
Ideal Avenue N & 31st Street N/Site Access 3	Side Street Stop	EB	14.9	B	-	-	5.0	A	14.9	B
		WB	14.6	B	-	-	9.2	A		
		NB	5.2	A	1.9	A	1.6	A		
		SB	6.8	A	1.2	A	0.7	A		
Ideal Avenue N & Stillwater Boulevard N	All-Way Stop	EB	16.9	C	20.5	C	5.2	A	13.9	B
		WB	12.4	B	19.4	C	9.2	A		
		NB	14.9	B	17.7	C	5.7	A		
		SB	16.6	C	12.4	B	5.0	A		
34th Street N & Jamaca Avenue N	Round-about	EB	16.9	C	20.7	C	18.1	C	13.7	B
		WB	12.4	B	17.4	C	10.9	B		
		NB	5.6	A	9.1	A	4.1	A		
		SB	4.1	A	7.1	A	1.7	A		
Ideal Avenue N & 36th Street N	Side Street Stop	EB	17.6	C	-	-	5.3	A	17.6	C
		WB	16.0	C	-	-	-	-		
		NB	8.1	A	2.0	A	1.6	A		
		SB	-	-	1.4	A	0.2	A		
34th Street N & Site Access 1	Side Street Stop	EB	-	-	3.1	A	2.9	A	10.0	A
		WB	-	-	0.8	A	-	-		
		NB	10.0	A	-	-	7.1	A		
		SB	-	-	-	-	-	-		

Based on the analysis, all study intersections are expected to operate at LOS C or better during the AM & PM peak hours. Under Horizon Year (2040) Build Scenario 4, all intersection movements are anticipated to operate at LOS D or better. 34th Street N & site access 1 has acceptable side street delays in the peak hours but the intersection should be monitored as development occurs on the north side of 34th Street N.

The 95th percentile queues were reviewed at the study intersections. All 95th percentile queues for the movements are anticipated to be accommodated within their respective storage bays, except the 95th percentile queue of the northbound left turn at the intersection of 34th Street N & Ideal Avenue N which extends approximately 75 feet past the provided storage bay in the PM peak hour. If these volumes are realized, it may be necessary to restripe the northbound approach to include a longer storage capacity, however it is anticipated this can be done within the existing cross section.

6.0 CONCLUSIONS AND RECOMMENDATIONS

A traffic analysis was performed to quantify the impacts of the proposed development on the adjacent roadway network and intersections. The proposed site is located on the northeast and southeast corner of the intersection of 34th Street N & Ideal Avenue N, in Lake Elmo, MN. No-Build, Build Scenario 1, Build Scenario 2, Build Scenario 3, and Build Scenario 4 were analyzed in the Opening Year (2025) and Horizon Year (2040)

6.1 PROJECT TRAFFIC DEVELOPMENT & STUDY AREA

Four development buildout scenarios were considered; Scenario 1 is anticipated to have 1,753,400 square feet of industrial development, 91,500 square feet of commercial development, and 400 multifamily dwelling units. Scenario 2 is anticipated to have 1,557,380 square feet of industrial development, 178,596 square feet of commercial development, 38 single family dwelling units, and 334 multifamily dwelling units. Scenario 3 is anticipated to have 1,750,000 square feet of industrial development, 91,500 square feet of commercial development, and 56 single family dwelling units. Scenario 4 is anticipated to have 1,100,000 square feet of industrial development and 10 single family dwelling units. All four scenarios are not expected to be fully built out until the Horizon Year (2040); in the Opening Year (2025) all build scenarios are anticipated to have 1,100,000 square feet of industrial development.

The Opening Year (2025) Scenarios 1-4 are anticipated to generate 90 trips during the AM peak hour and 110 trips during the PM peak hour. In the Horizon Year (2040), Scenario 1 is anticipated to generate 450 trips during the AM peak hour and 805 trips during the PM peak hour. Scenario 2 is anticipated to generate 430 AM peak hour trips and 940 PM peak hour trips in the Horizon Year (2040). Scenario 3 is anticipated to generate 380 AM peak hour trips and 750 PM peak hour trips in the Horizon Year (2040). Lastly, Scenario 4 is anticipated to generate 95 AM peak hour trips and 120 PM peak hour trips in the Horizon Year (2040).

The study area intersections include Ideal Avenue N & 34th Street N, Ideal Avenue & 32nd Street N/Site Access 2, Ideal Avenue N & 31st Street N/Site Access 3, Ideal Avenue N & Stillwater Boulevard N, 34th Street N & Jamaca Avenue N, and Ideal Avenue N & 36th Street N/Site Access 4. A capacity analysis was performed for each of the following conditions to quantify background operations in the study area, as well as operating conditions with Scenario 1, Scenario 2, Scenario 3, and Scenario 4 development:

- Existing Year (2021)
- Opening Year (2025) No-Build
- Opening Year (2025) Build Scenarios 1-4
- Horizon Year (2040) No-Build
- Horizon Year (2040) Build Scenario 1
- Horizon Year (2040) Build Scenario 2
- Horizon Year (2040) Build Scenario 3
- Horizon Year (2040) Build Scenario 4

6.2 EXISTING YEAR (2021) LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was conducted for Existing Year (2021) traffic conditions at the study intersections to determine baseline existing conditions. No improvements were incorporated into the traffic model. Based

on the analysis, all intersections are anticipated to operate at acceptable LOS and there are no queuing issues at the study intersections.

6.3 OPENING YEAR (2025) NO-BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was conducted for Opening Year (2025) No-Build traffic conditions at the study intersections to determine baseline conditions for the 2025 analysis year. The only modification to the traffic model was an update to the geometry at Ideal Avenue N & 36th Street N according to the Washington County Highway 13 (Ideal Avenue) Phase II pavement and safety improvement project.

Based on the analysis, all intersections are anticipated to operate at acceptable LOS and there are no queuing issues at the study intersections.

6.4 OPENING YEAR (2025) BUILD SCENARIOS 1-3 LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was conducted for Opening Year (2025) Build Scenarios 1-3 at the study intersections to determine baseline conditions for the 2025 analysis year. The geometry and signal timings are the same as Opening Year (2025) No-Build conditions. Based on the analysis, all intersections are anticipated to operate at acceptable LOS and there are no queuing issues at the study intersections. Side-street stop control is adequate at all site accesses. It is not anticipated that a signal will be required at site access 1 on 34th Street N due to the anticipated trip generation and because all movements at site access 1 are expected to operate acceptably.

6.5 HORIZON YEAR (2040) NO-BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

Horizon Year (2040) No-Build traffic conditions were studied with and without mitigation at the study intersections to determine baseline mitigation needed to maintain acceptable LOS as the background traffic volumes grow. The first analysis assumed the base geometry and the mitigated analysis was similar to the base geometry, with the exception of Ideal Avenue N & Stillwater Boulevard N, where the southbound approach was expanded to have dedicated left, through, and right turn lanes.

Based on the unmitigated analysis, the following intersections have movements that are anticipated to operate at unacceptable LOS with background growth

- Ideal Avenue N & Stillwater Boulevard N (PM peak hour)
- Ideal Avenue N & 31st Street N (PM peak hour)

Additionally, the southbound left turn movement at the intersection of Ideal Avenue N & Stillwater Boulevard N has a 95th percentile queue that extend past the provided storage capacity and impacts the upstream intersection of Ideal Avenue N & 31st Street N.

In the mitigated analysis, all intersections and movements operate at LOS D or better. Additionally, there are no queuing issues in the study network.

6.6 HORIZON YEAR (2040) BUILD SCENARIO 1 LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Horizon Year (2040) Build Scenario 1 at the study intersections to determine the impact of site traffic. The mitigated geometry from Opening Year (2040) No-Build analysis was utilized for this analysis.

All intersections operate at an acceptable LOS during the AM and PM peak hours. Additionally, all 95th percentile queues are expected to be within their respective storage capacity, except for the northbound left at 34th Street N & Ideal Avenue N, which is anticipated to fit within the existing taper.

6.7 HORIZON YEAR (2040) BUILD SCENARIO 2 LEVEL OF SERVICE ANALYSIS SUMMARY

Horizon Year (2040) Build Scenario 2 traffic conditions were studied with and without mitigation at the study intersections to determine mitigation needed to maintain acceptable LOS with the development traffic. The mitigated geometry from Opening Year (2040) No-Build analysis was originally used for this analysis, then additional mitigation was applied to movements and intersection operating at unacceptable LOS.

Based on the unmitigated analysis, the following intersections have movements that are anticipated to operate at unacceptable LOS with background growth

- 34th Street N & Jamaca Avenue N (PM peak hour)
- 34th Street N & Site Access 1 (PM peak hour)

To alleviate operational issues, 34th Street was expanded to a four-lane cross section through the intersection with Jamaca Avenue, and a second through lane was added to the roundabout to increase capacity. At the intersection of 34th Street N & Site Access 1 the southbound approach was expanded to include dedicated left and right turn lanes.

In the mitigated analysis, all intersections and movements operate at LOS D or better. Additionally, there are no queuing issues in the study network, except for the northbound left at the intersection of 34th Street N & Ideal Avenue N, which could extend out of the turn lane taper. This movement should be monitored and if projected volumes are realized, restriping may be necessary to provide adequate storage. Pavement expansion is not expected.

6.8 HORIZON YEAR (2040) BUILD SCENARIO 3 LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Horizon Year (2040) Build Scenario 3 at the study intersections to determine the impact of site traffic. The mitigated geometry from Opening Year (2040) No-Build analysis was utilized for this analysis.

All intersections operate at an acceptable LOS during the AM and PM peak hours. Additionally, there are no queuing issues in the study network, except for the northbound left at the intersection of 34th Street N & Ideal Avenue N, which could extend out of the turn lane taper. This movement should be monitored and if projected volumes are realized, restriping may be necessary to provide adequate storage. Pavement expansion is not expected.

6.8 HORIZON YEAR (2040) BUILD SCENARIO 4 LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Horizon Year (2040) Build Scenario 4 at the study intersections to determine the impact of site traffic. The mitigated geometry from Opening Year (2040) No-Build analysis was utilized for this analysis.

All intersections operate at an acceptable LOS during the AM and PM peak hours. Additionally, there are no queuing issues in the study network, except for the northbound left at the intersection of 34th Street N & Ideal Avenue N, which could extend out of the turn lane taper. This movement should be monitored and if projected volumes are realized, restriping may be necessary to provide adequate storage. Pavement expansion is not expected.

6.9 MITIGATION PLAN

The following provides a summary of mitigation improvements that were identified as part of the traffic analysis for the NorthPoint Industrial Park.

Existing (2021) Conditions

- No Mitigation Necessary

Opening Year (2025) No-Build Conditions

- No Mitigation Necessary

Opening Year (2025) Build Scenarios 1-3 Conditions

- Install eastbound right and westbound left turn lanes on 34th Street N at site access 1.
- Side-Street stop control at all accesses.

Horizon Year (2040) No-Build Conditions

- Addition of a southbound left-turn lane at the intersection of Ideal Avenue N & Stillwater Boulevard N
- Signal timing modification at the intersection of 34th Street N & Ideal Avenue N

Horizon Year (2040) Build Scenario 1 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1.
- Side-Street stop control at all accesses.
- Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted.

Horizon Year (2040) Build Scenario 2 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Expansion of 34th Street N to a four-lane cross-section at its intersection with Jamaca Avenue N
- Monitor the roundabout at 34th Street N & Jamaca Avenue N and add a second through lane for the eastbound and westbound movements if necessary.
- Addition of southbound left-turn lane to site access 1 on 34th Street N

- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Monitor 34th Street & site access 1 as development continues to determine if a signal is warranted.

Horizon Year (2040) Build Scenario 3 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Monitor 34th Street & Site Access 1 as development continues to determine if a signal is warranted.

Horizon Year (2040) Build Scenario 4 Conditions

- All Modifications from Horizon Year (2040) No-Build Conditions
- Install eastbound left, eastbound right, westbound left, and westbound right turn lanes on 34th Street N at site access 1
- Side-Street stop control at all accesses.
- Monitor 34th Street & Site Access 1 as development continues to determine if a signal is warranted.

APPENDICES

APPENDIX A: EXHIBITS

APPENDIX B: TURNING MOVEMENT COUNTS

APPENDIX C: SITE PLAN

APPENDIX D: NORTHPOINT DEVELOPMENT TRIP GENERATION STUDY

APPENDIX E: EXISTING YEAR (2021) SIMTRAFFIC REPORT

APPENDIX F: OPENING YEAR (2025) NO-BUILD SIMTRAFFIC REPORT

APPENDIX G: OPENING YEAR (2025) BUILD SCENARIO 1-4 SIMTRAFFIC REPORT

APPENDIX H: HORIZON YEAR (2040) NO-BUILD SIMTRAFFIC REPORT

APPENDIX I: HORIZON YEAR (2040) NO-BUILD MITIGATED SIMTRAFFIC REPORT

APPENDIX J: HORIZON YEAR (2040) BUILD SCENARIO 1 SIMTRAFFIC REPORT

APPENDIX K: HORIZON YEAR (2040) BUILD SCENARIO 2 SIMTRAFFIC REPORT

APPENDIX L: HORIZON YEAR (2040) BUILD SCENARIO 2 MITIGATED SIMTRAFFIC REPORT

APPENDIX M: HORIZON YEAR (2040) BUILD SCENARIO 3 SIMTRAFFIC REPORT

APPENDIX N: HORIZON YEAR (2040) BUILD SCENARIO 4 SIMTRAFFIC REPORT

Appendix A:

Exhibits

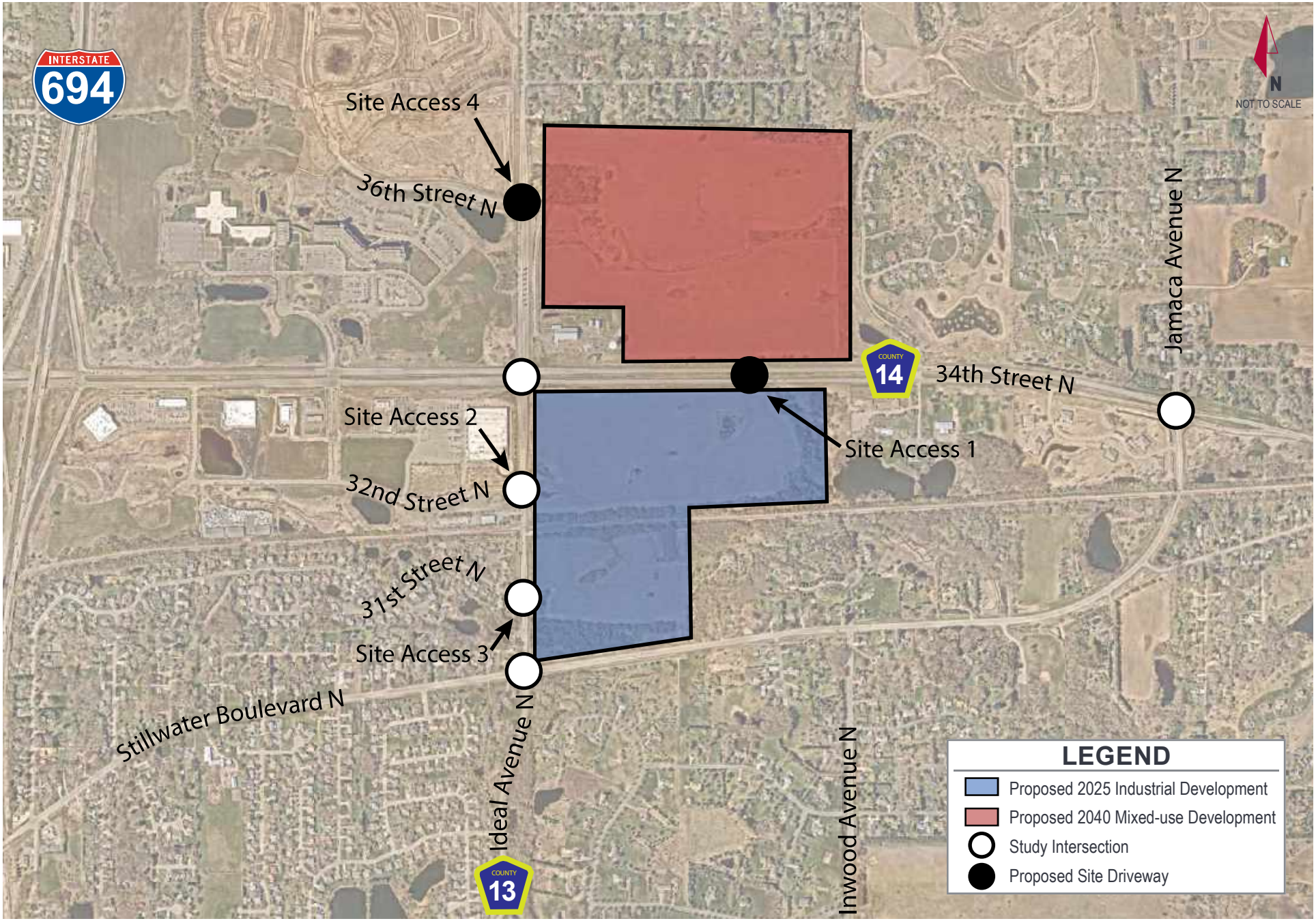


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EXHIBIT 1

PROJECT SITE LOCATION AND STUDY AREA

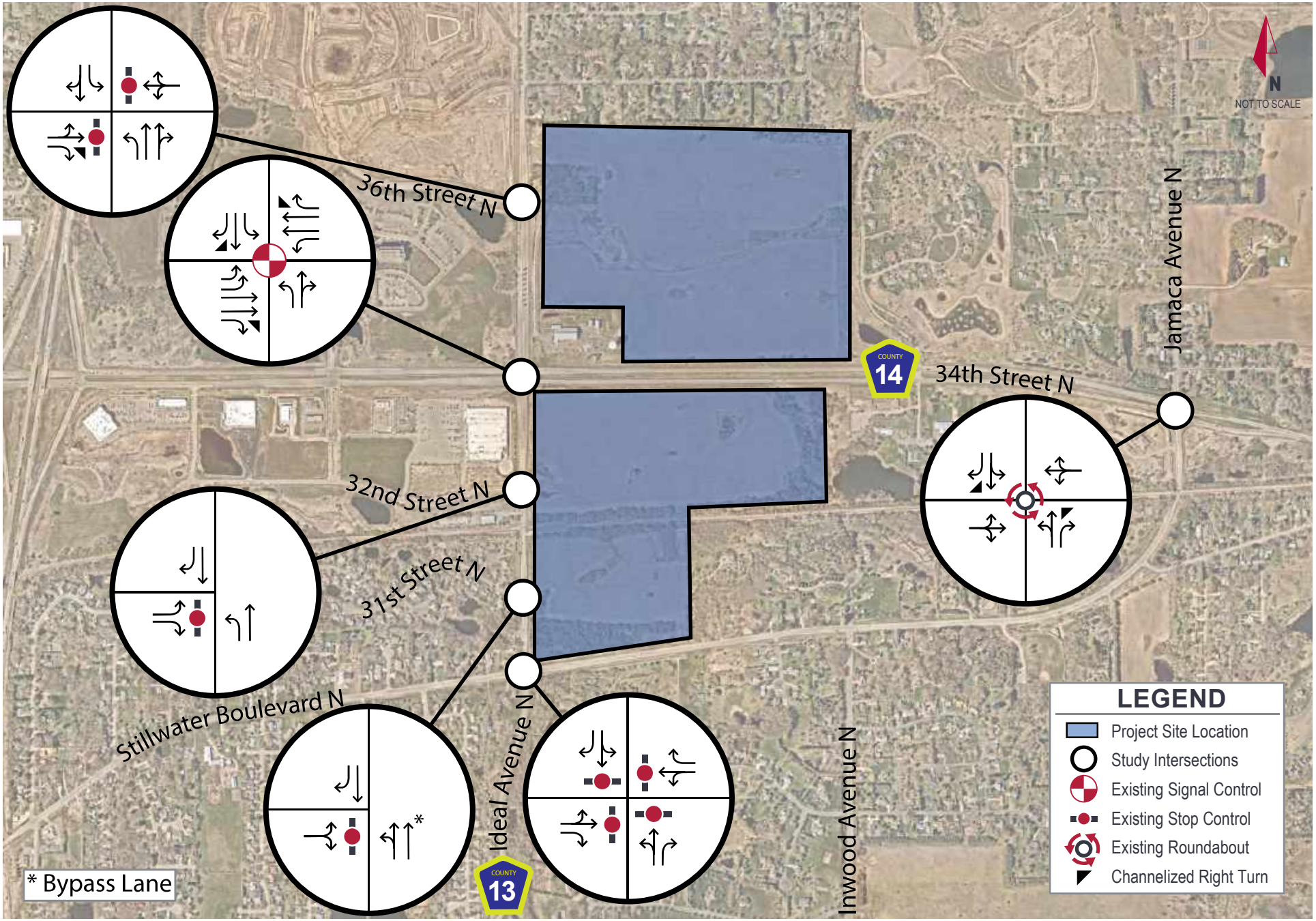

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EXHIBIT 2

EXISTING GEOMETRY AND INTERSECTION CONTROL

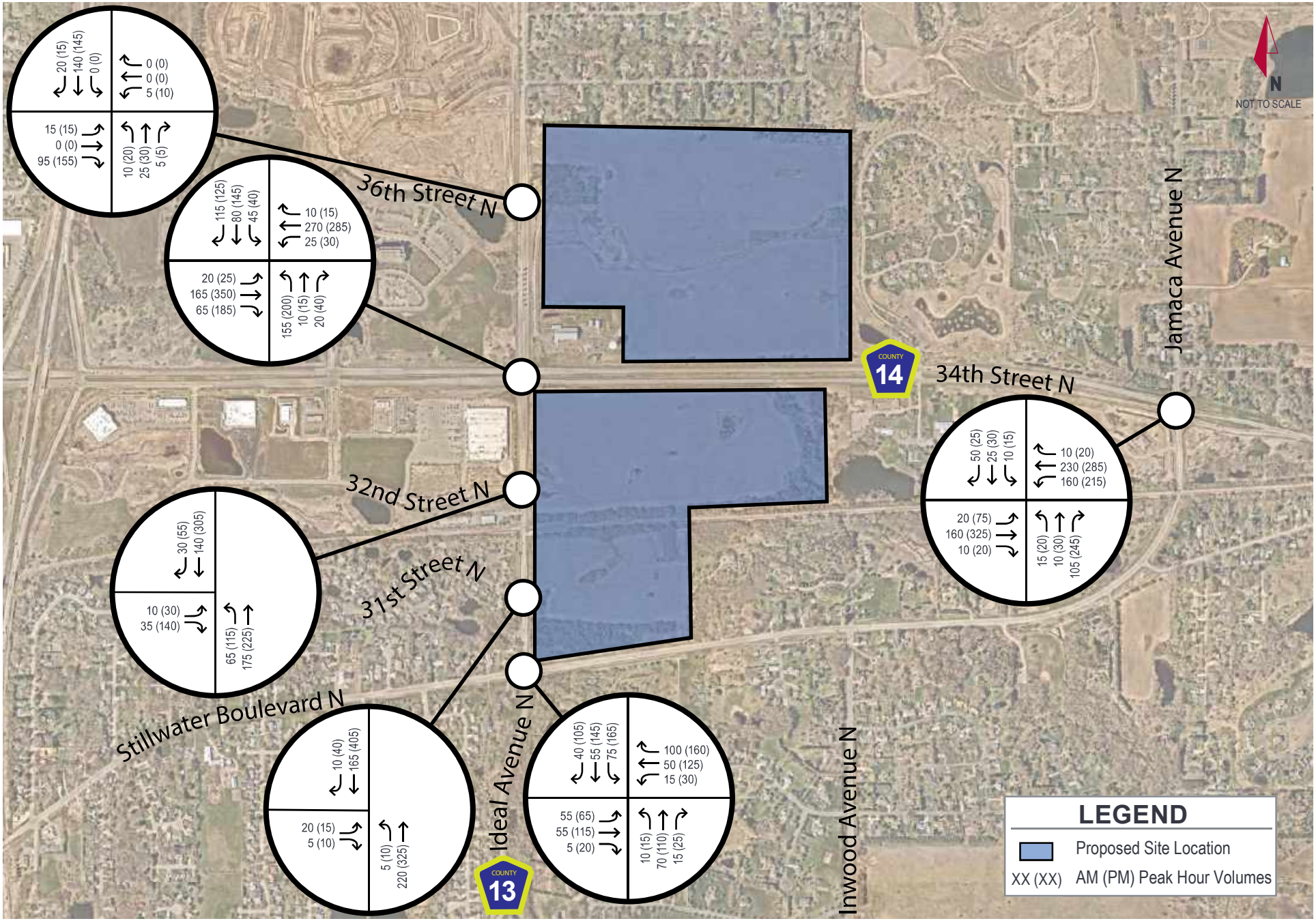

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EXHIBIT 3

EXISTING YEAR (2021)
PEAK HOUR TRAFFIC VOLUMES

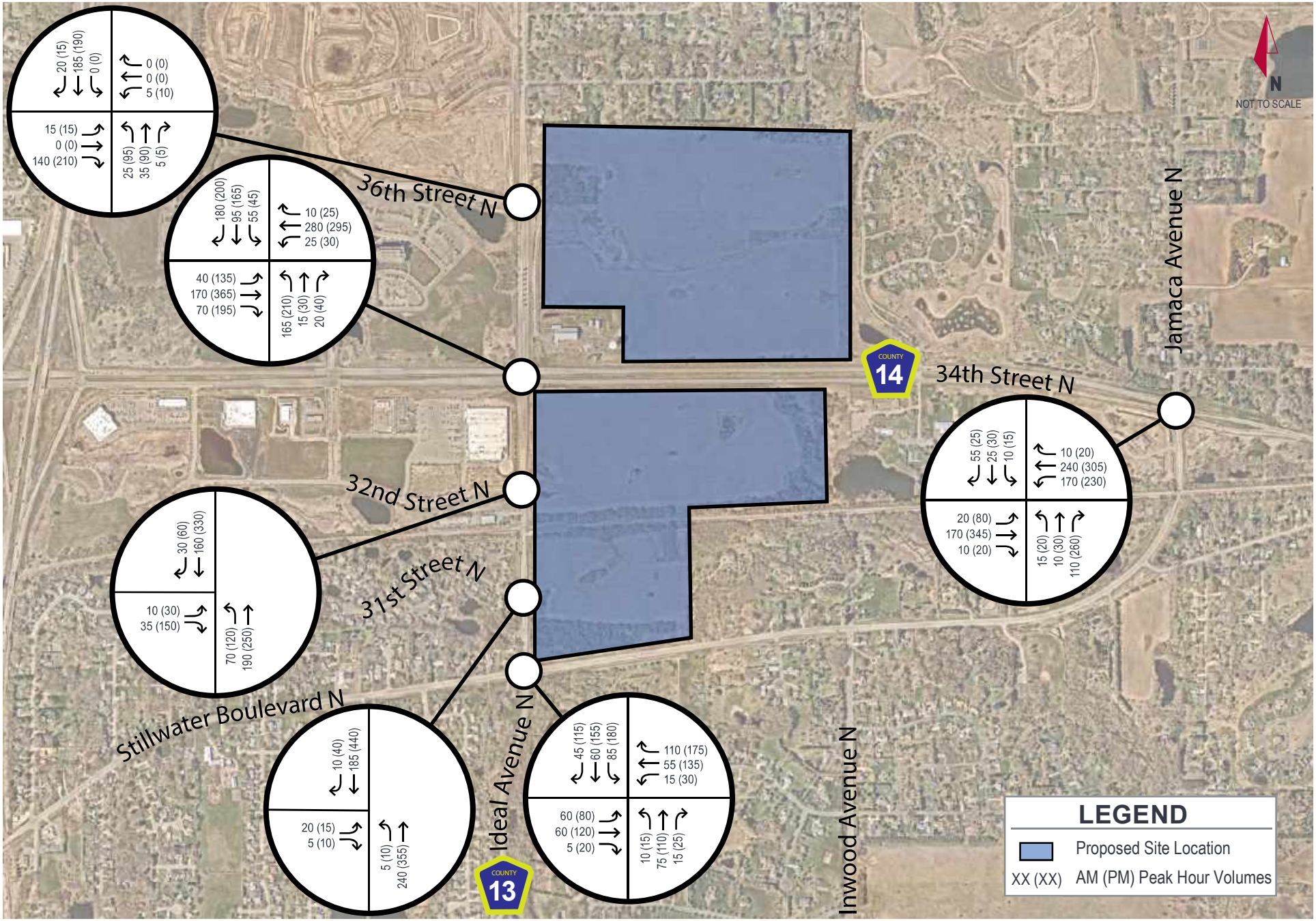

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EXHIBIT 4

OPENING YEAR (2025) NO-BUILD PEAK HOUR TRAFFIC PROJECTIONS

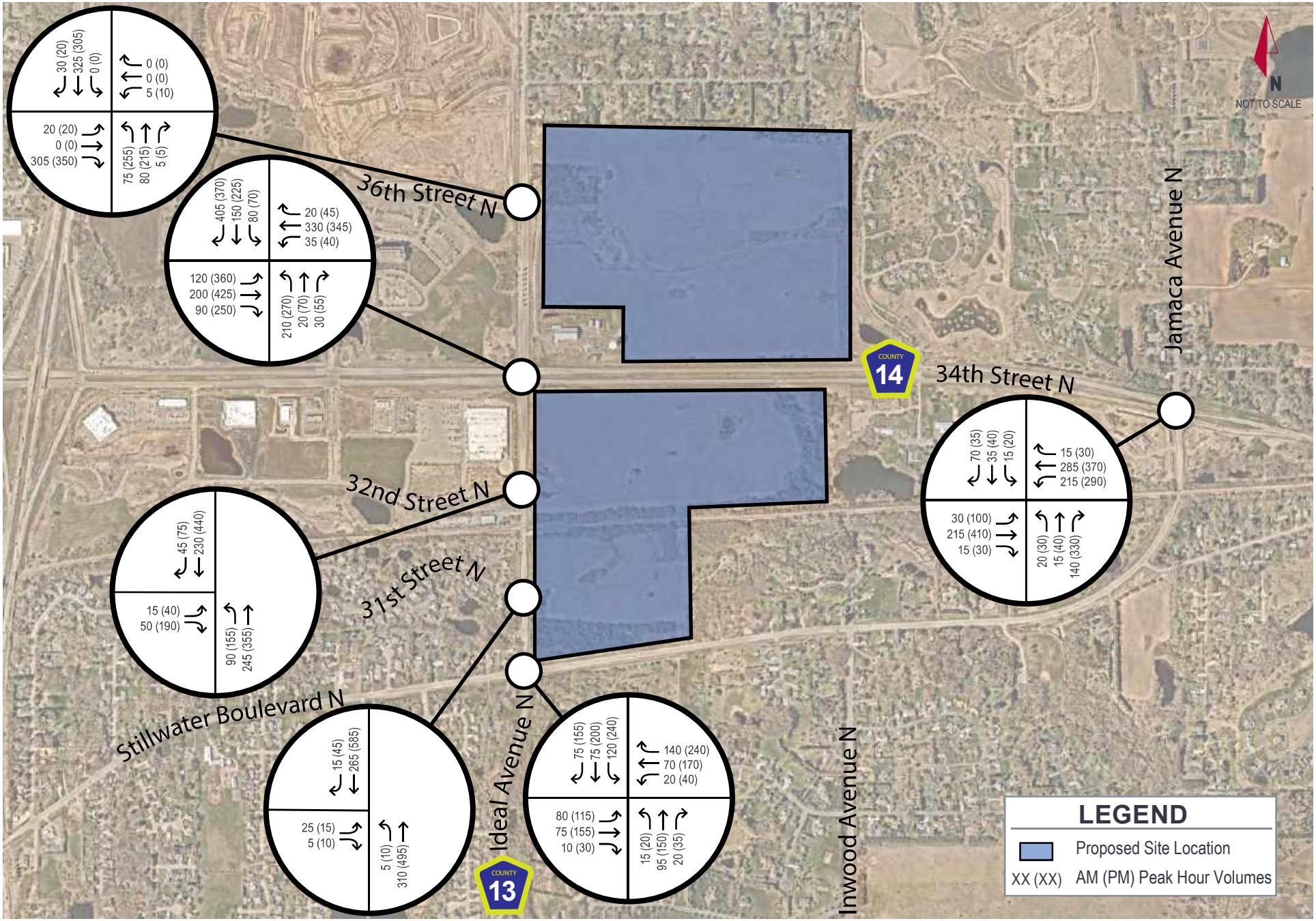

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EXHIBIT 5

HORIZON YEAR (2040) NO-BUILD PEAK HOUR TRAFFIC PROJECTIONS

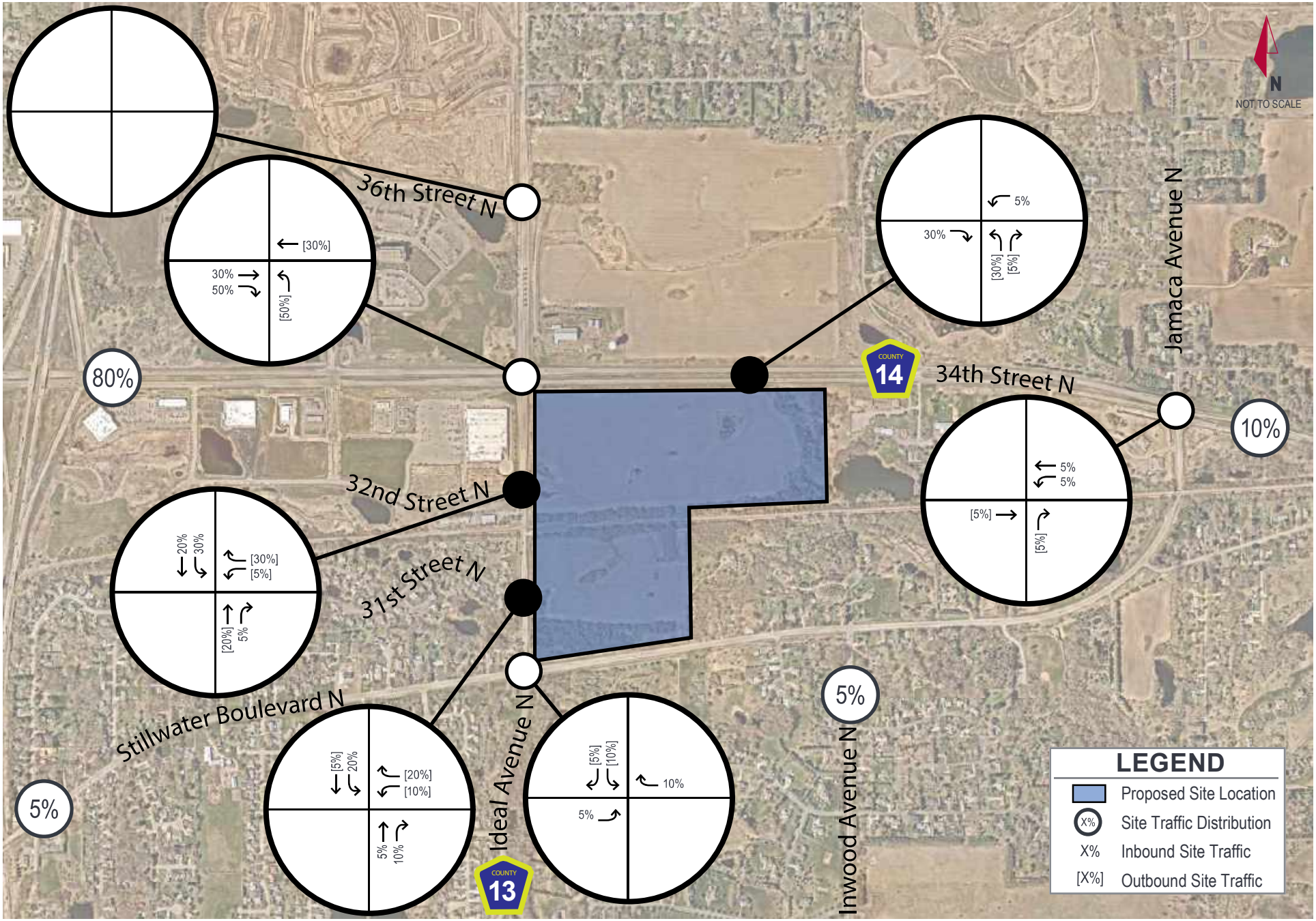

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EXHIBIT 6

SOUTHERN BUSINESS PARK

PASSENGER VEHICLE TRIP DISTRIBUTION

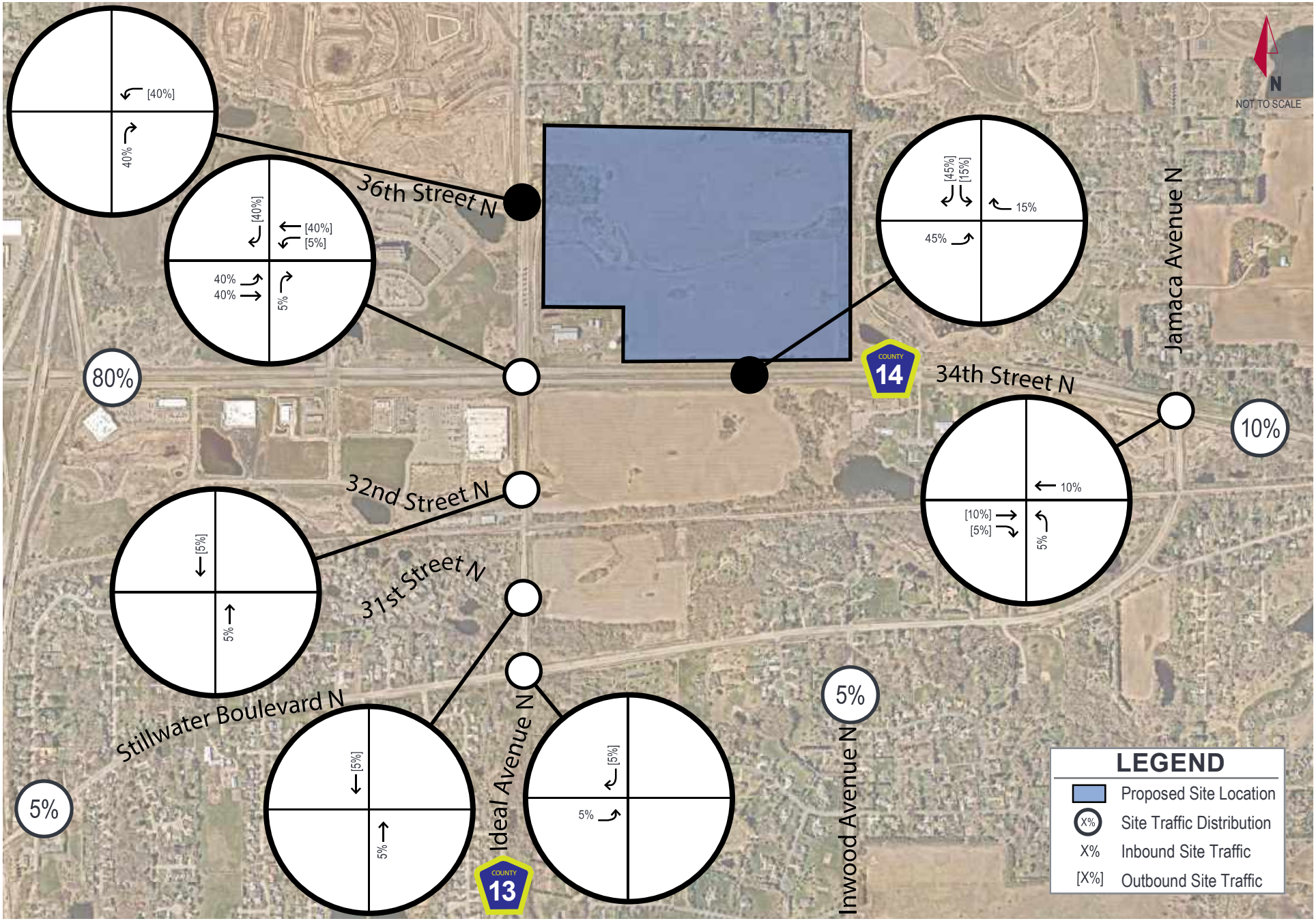

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EXHIBIT 7

NORTHERN BUSINESS PARK

PASSENGER VEHICLE TRIP DISTRIBUTION

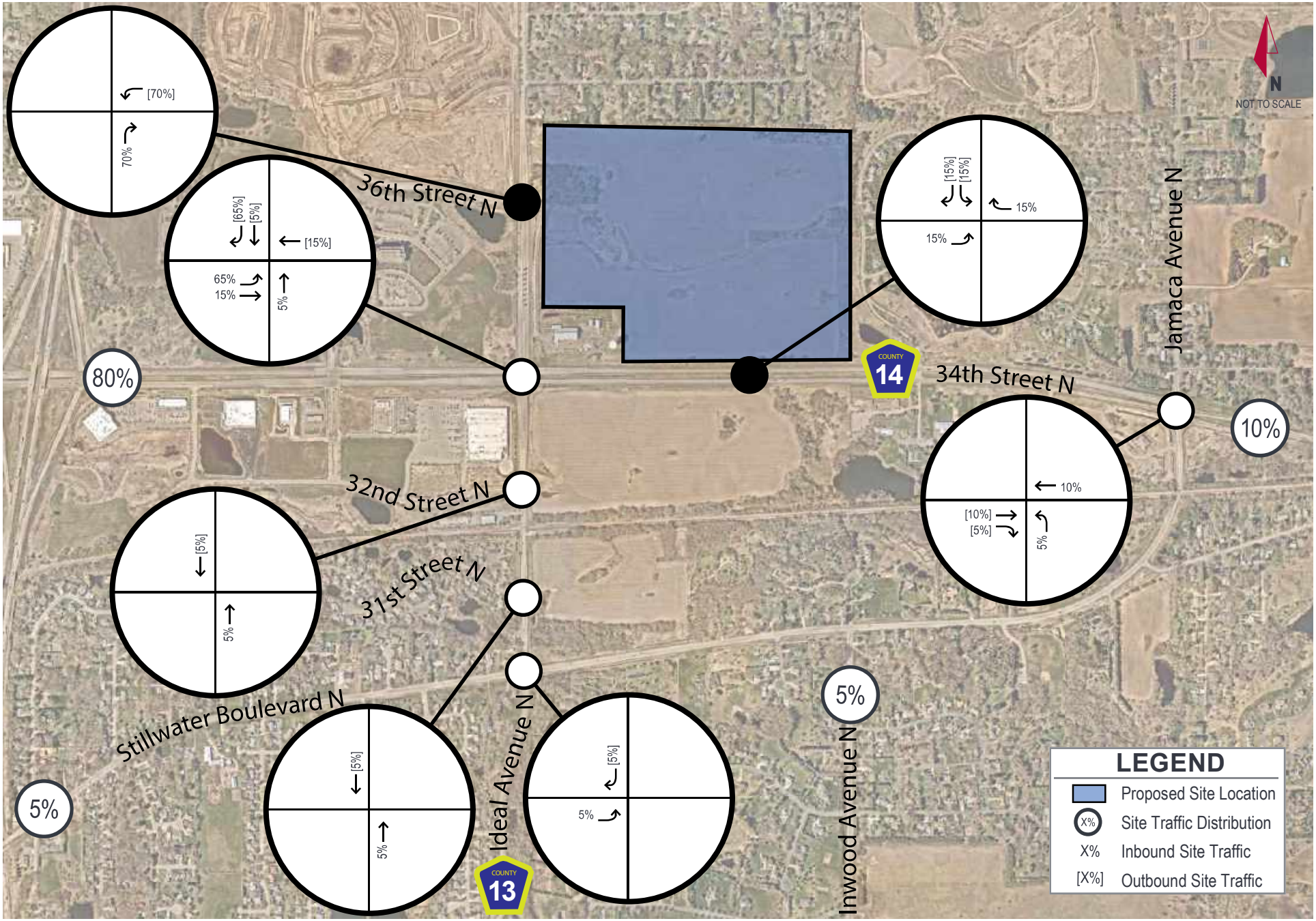

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EXHIBIT 8

RESIDENTIAL DEVELOPMENT

PASSENGER VEHICLE TRIP DISTRIBUTION

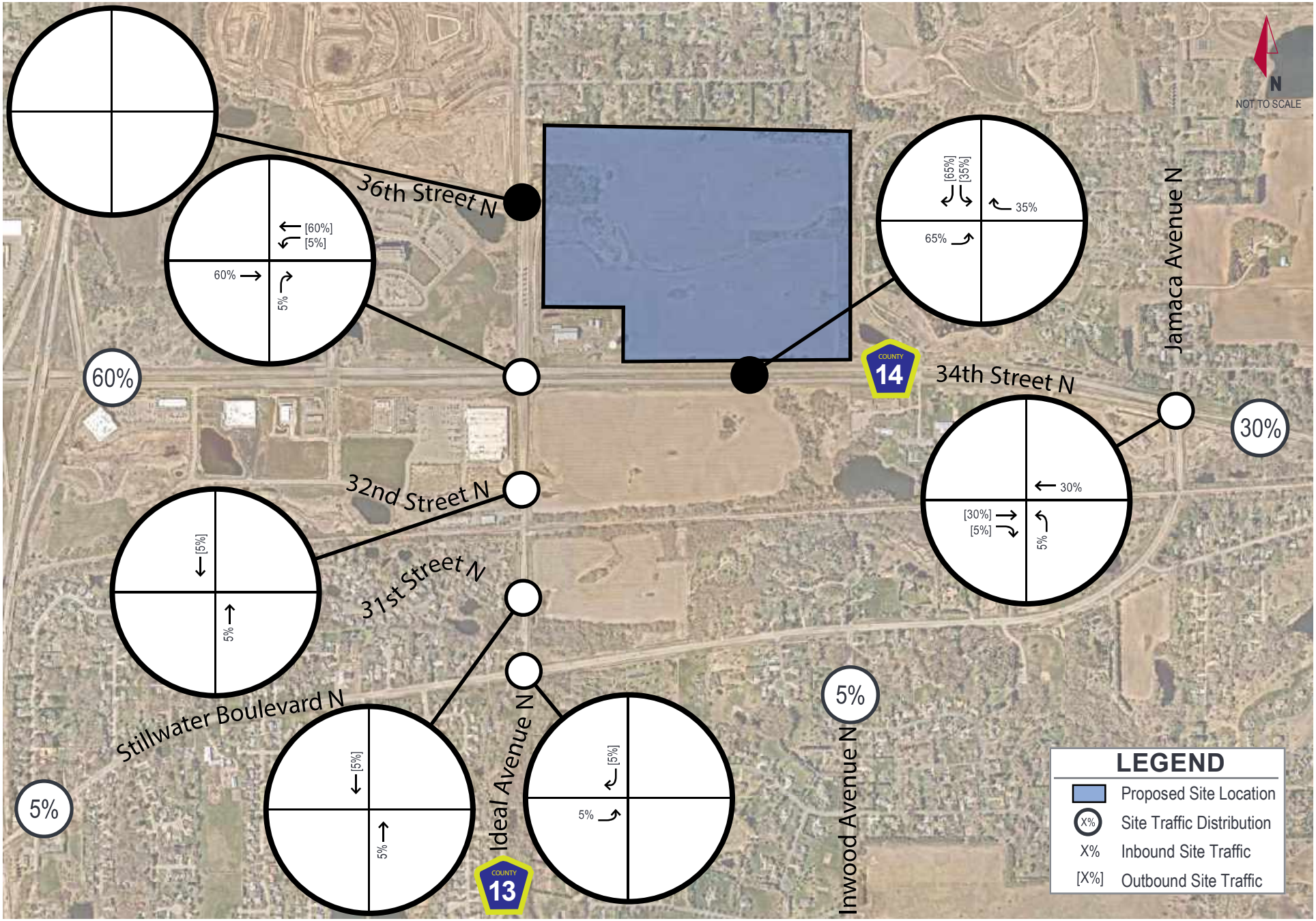

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EXHIBIT 9

COMMERCIAL/SHOPPING PLAZA DEVELOPMENT
PASSENGER VEHICLE TRIP DISTRIBUTION

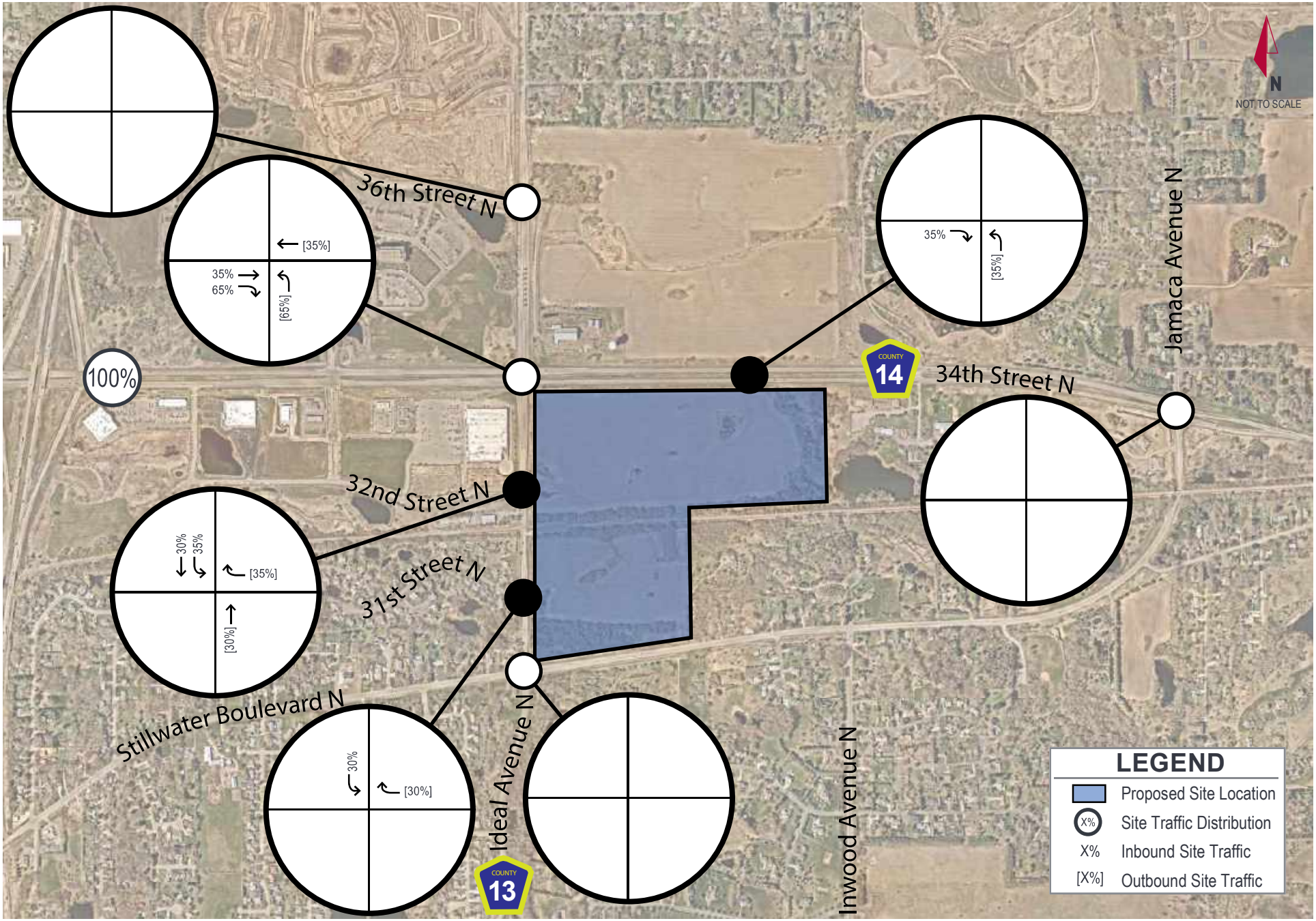

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EXHIBIT 10

SOUTHERN BUSINESS PARK
TRUCK TRIP DISTRIBUTION

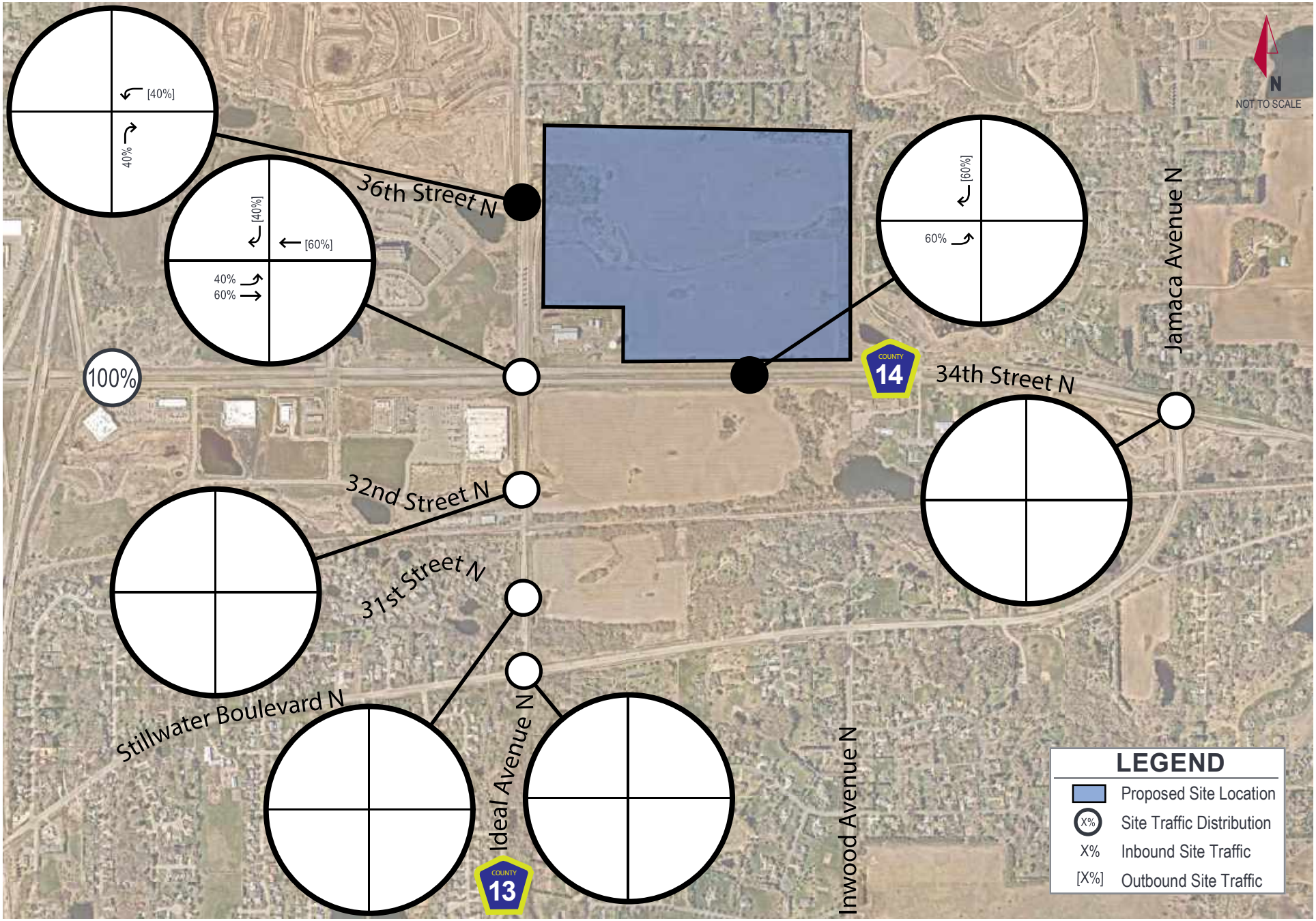

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EXHIBIT 11

NORTHERN BUSINESS PARK
TRUCK TRIP DISTRIBUTION

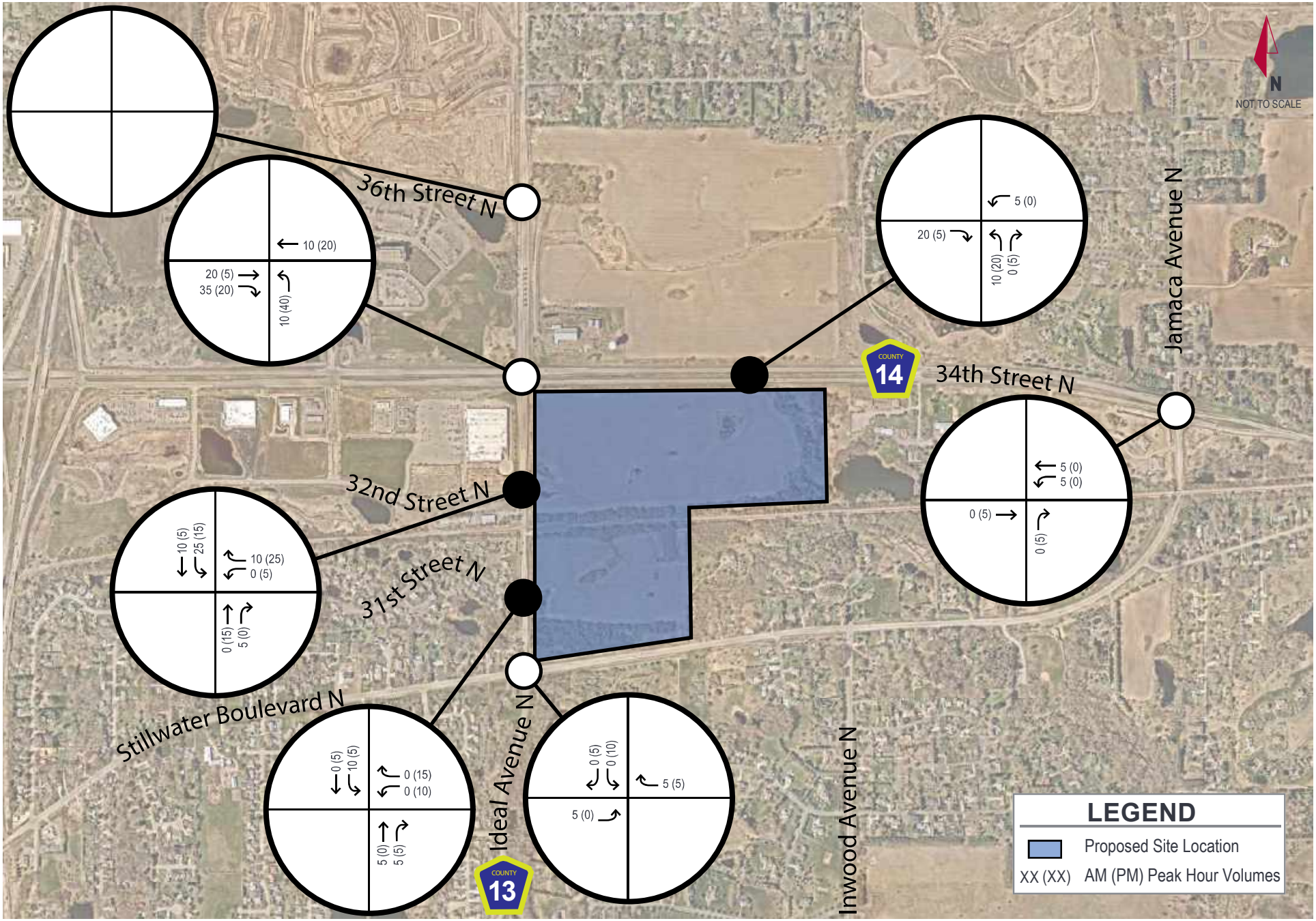

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EXHIBIT 12

OPENING YEAR (2025) BUILD SCENARIO 1, 2, 3, & 4
TOTAL PROJECT TRAFFIC

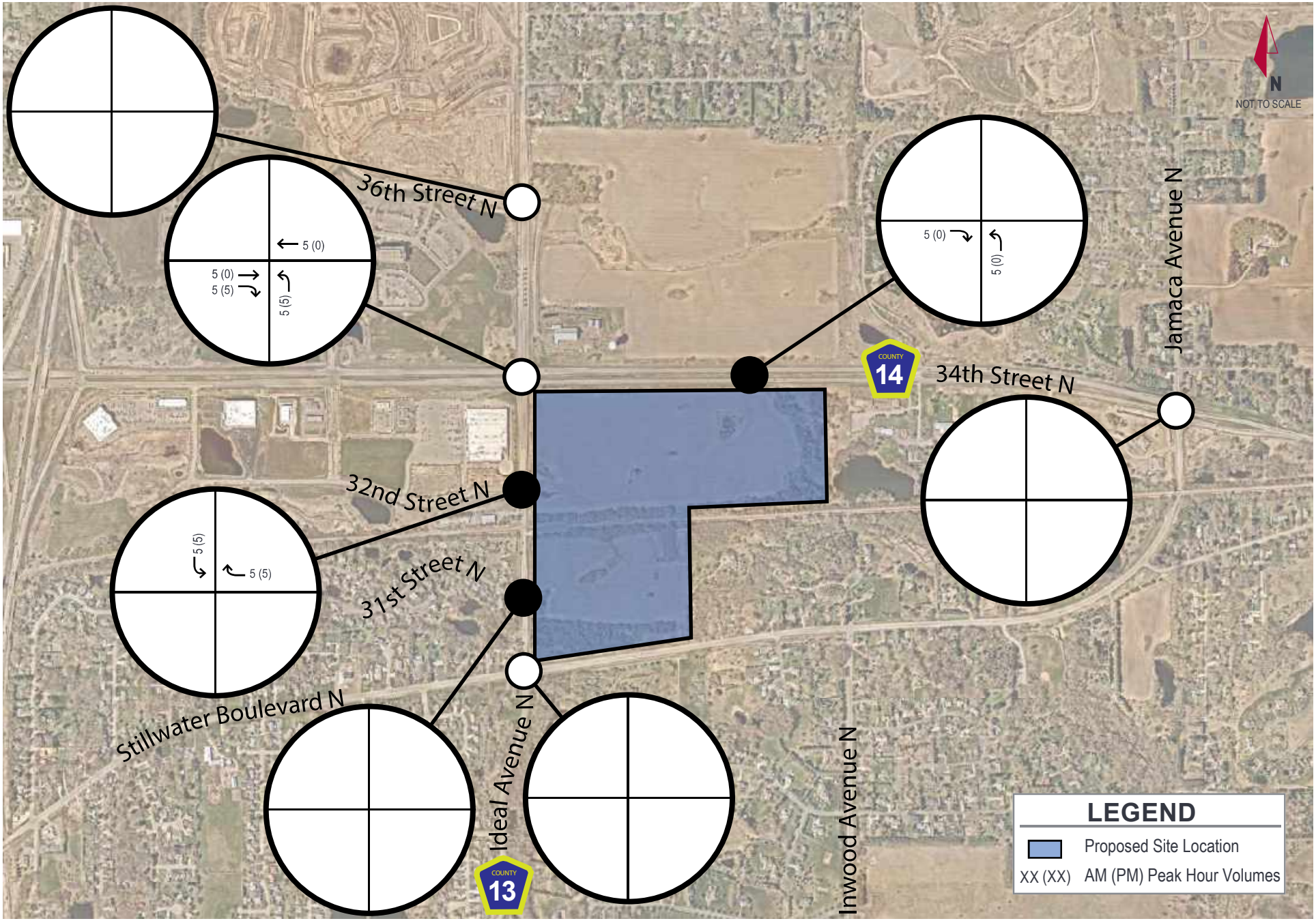

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EXHIBIT 13

OPENING YEAR (2025) BUILD SCENARIO 1, 2, 3, & 4
TRUCK TRAFFIC

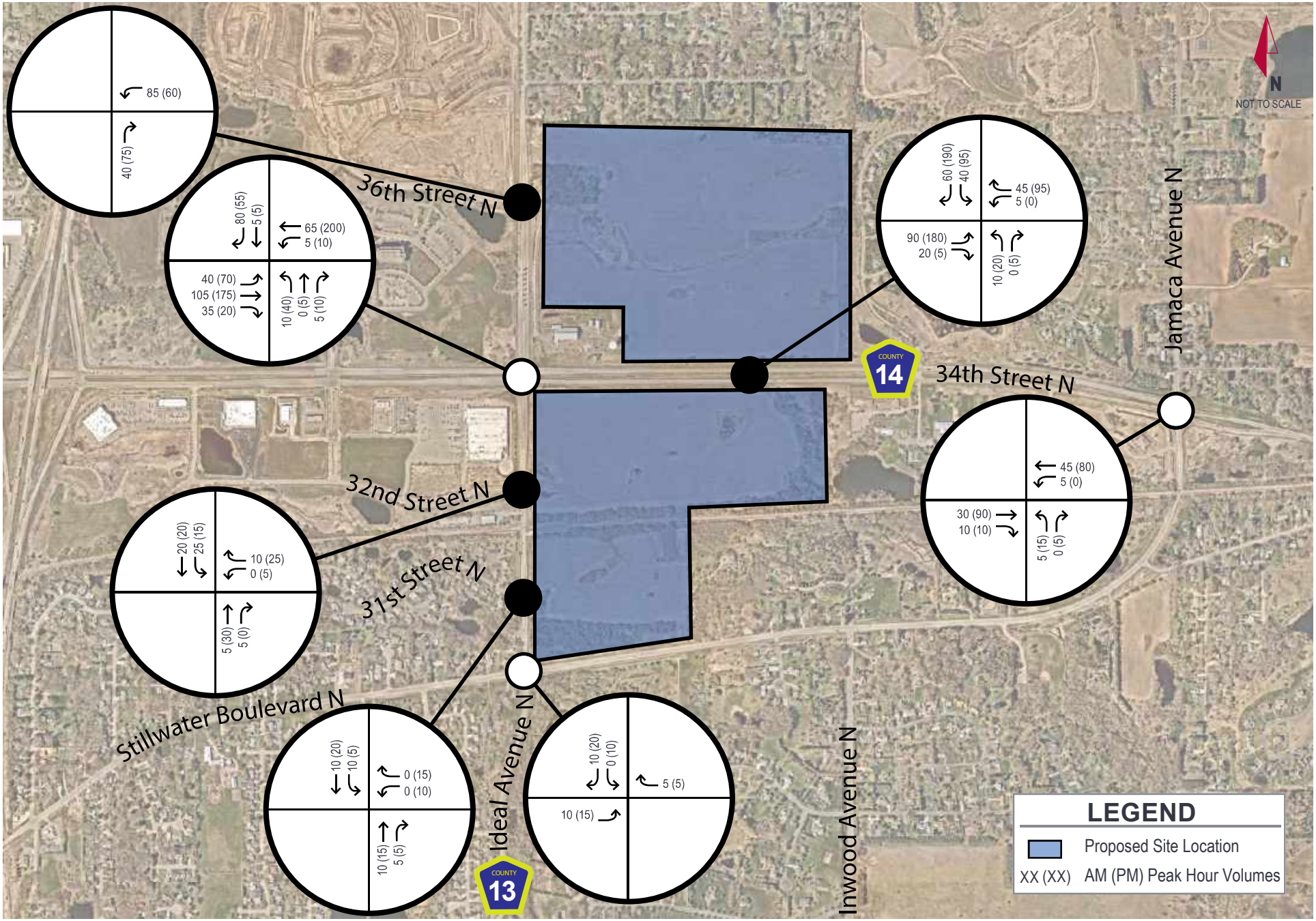

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EXHIBIT 14

HORIZON YEAR (2040) BUILD SCENARIO 1
TOTAL PROJECT TRAFFIC

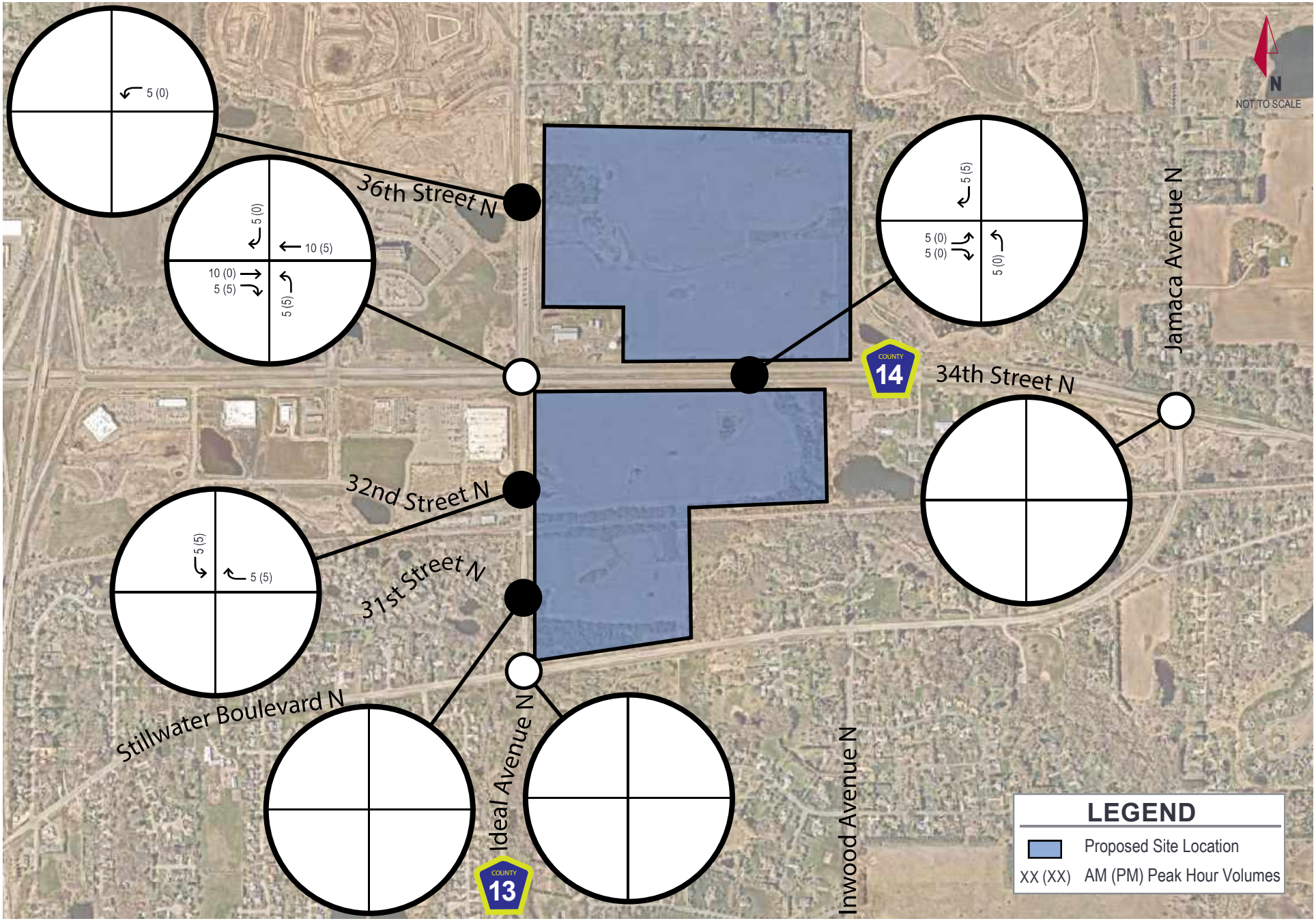

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EXHIBIT 15

HORIZON YEAR (2040) BUILD SCENARIO 1
TRUCK TRAFFIC

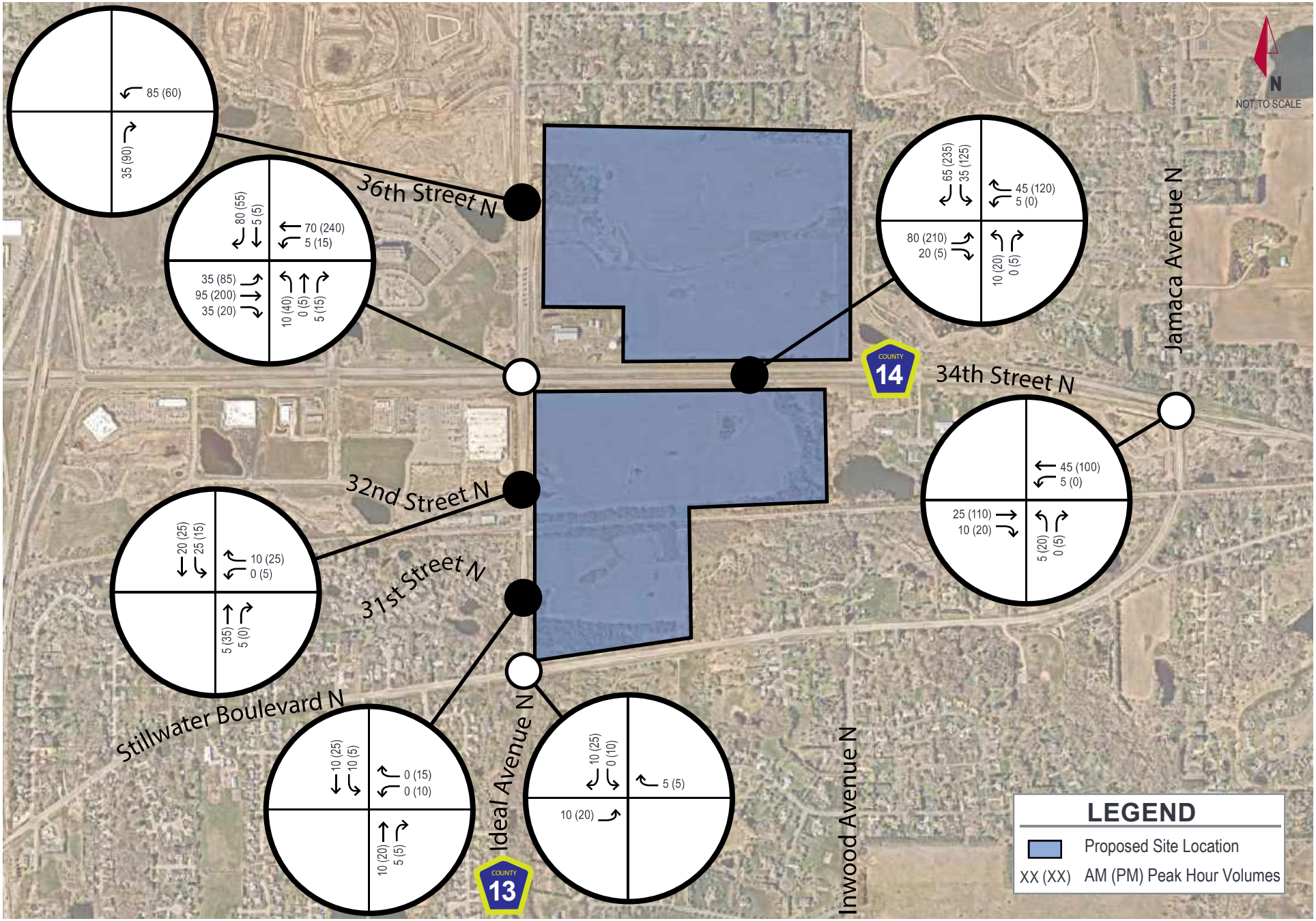

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EXHIBIT 16

HORIZON YEAR (2040) BUILD SCENARIO 2
TOTAL PROJECT TRAFFIC

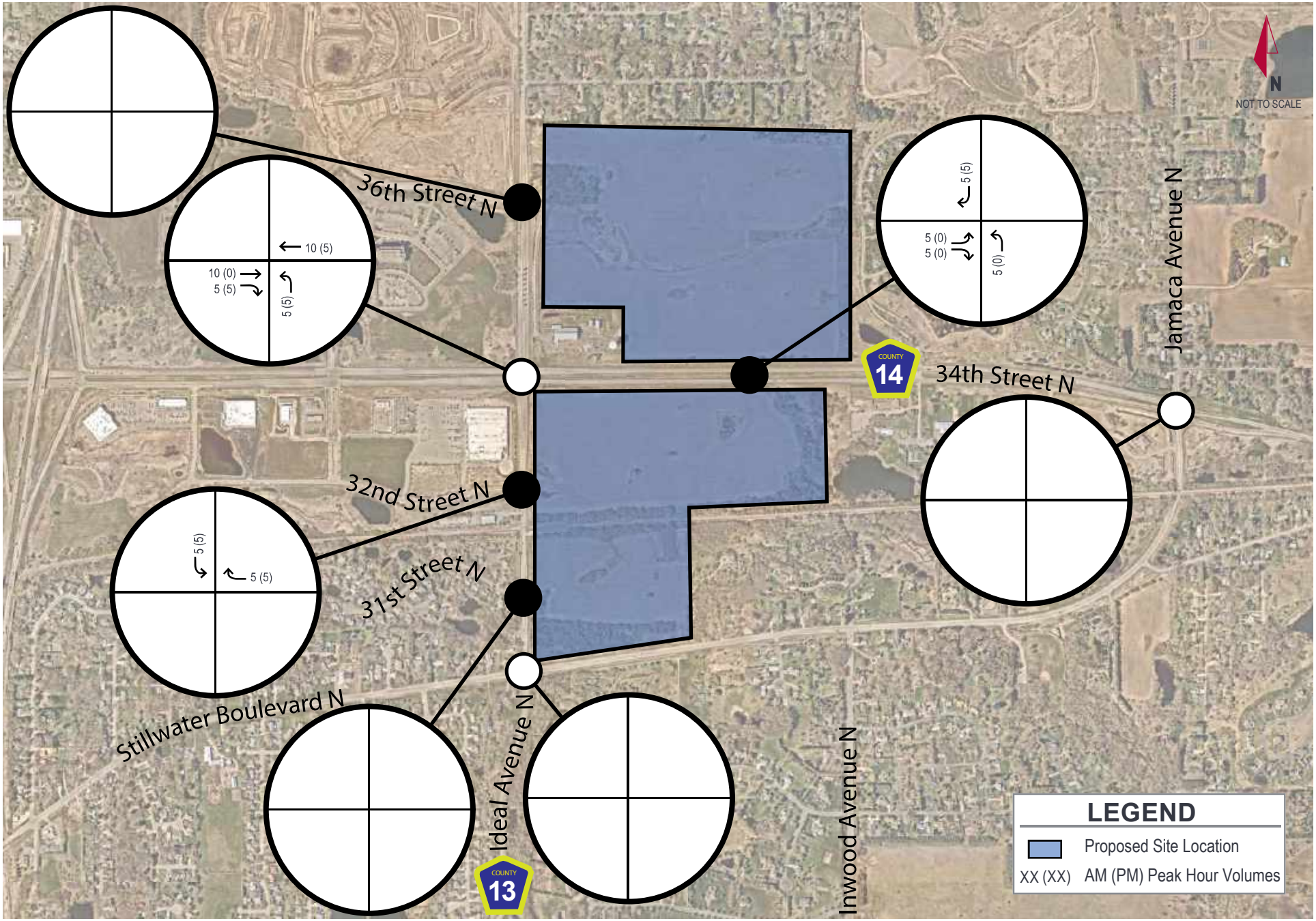

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EXHIBIT 17

HORIZON YEAR (2040) BUILD SCENARIO 2
TRUCK TRAFFIC

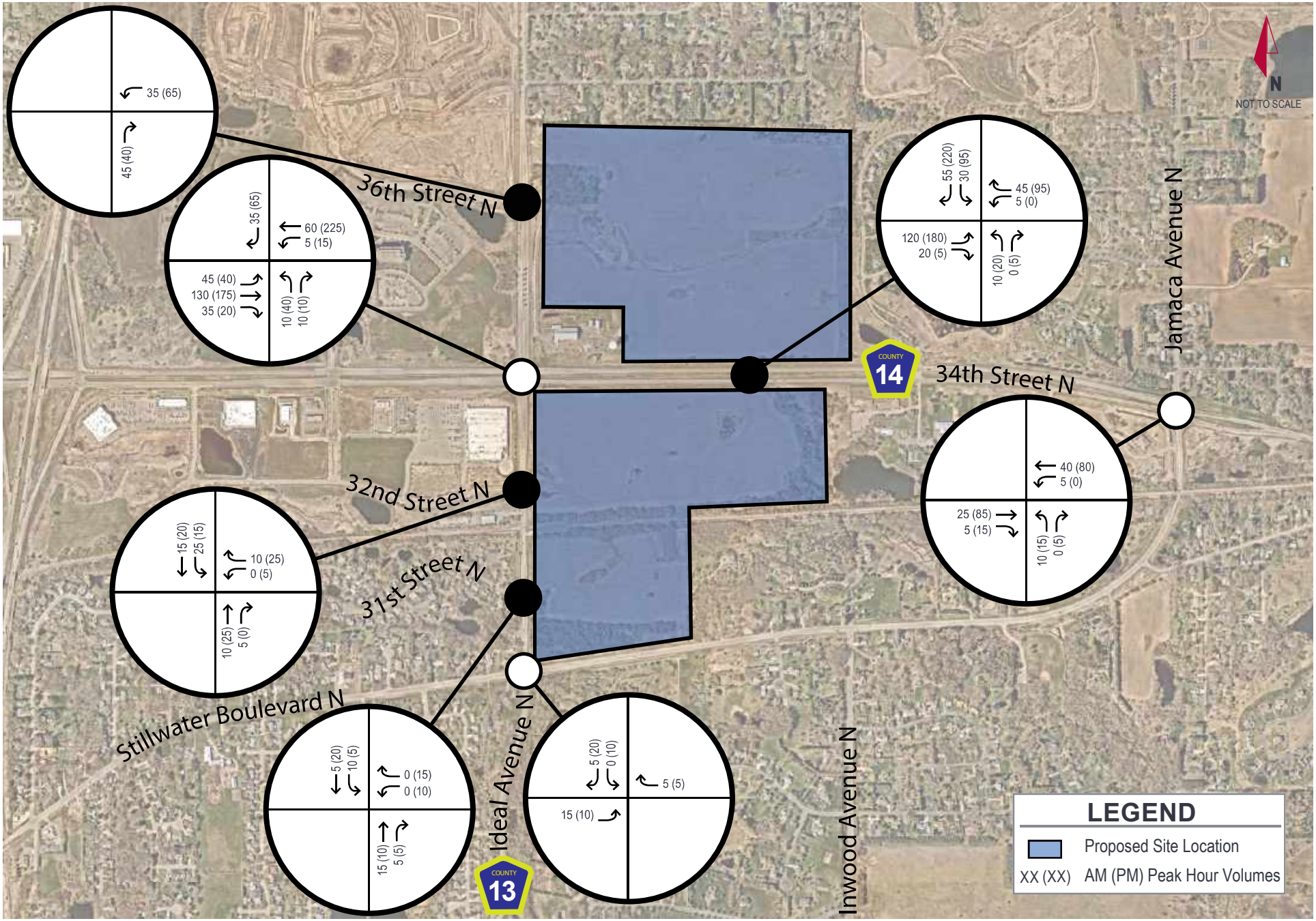

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EXHIBIT 18

HORIZON YEAR (2040) BUILD SCENARIO 3
TOTAL PROJECT TRAFFIC

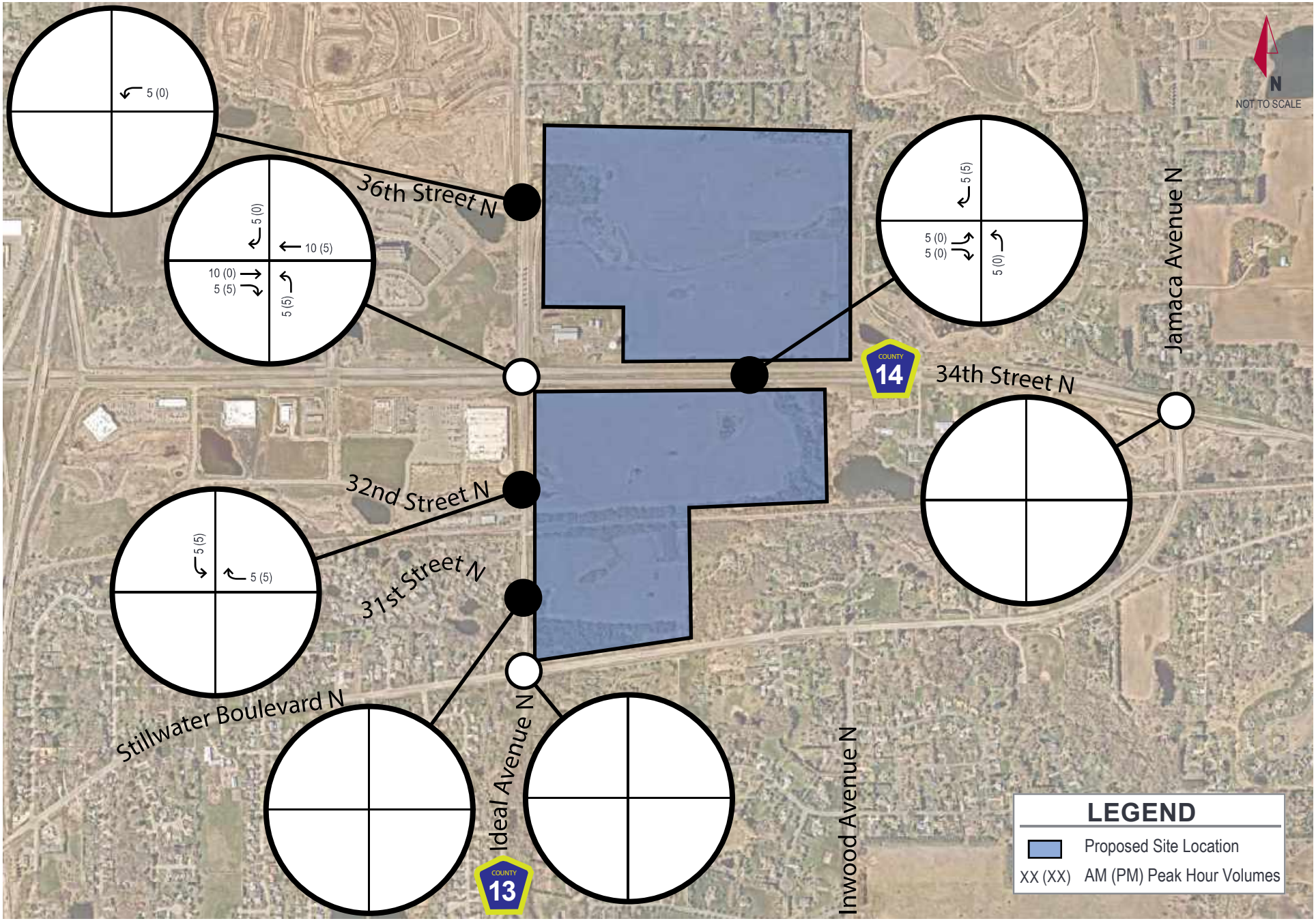

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EXHIBIT 19

HORIZON YEAR (2040) BUILD SCENARIO 3
TRUCK TRAFFIC

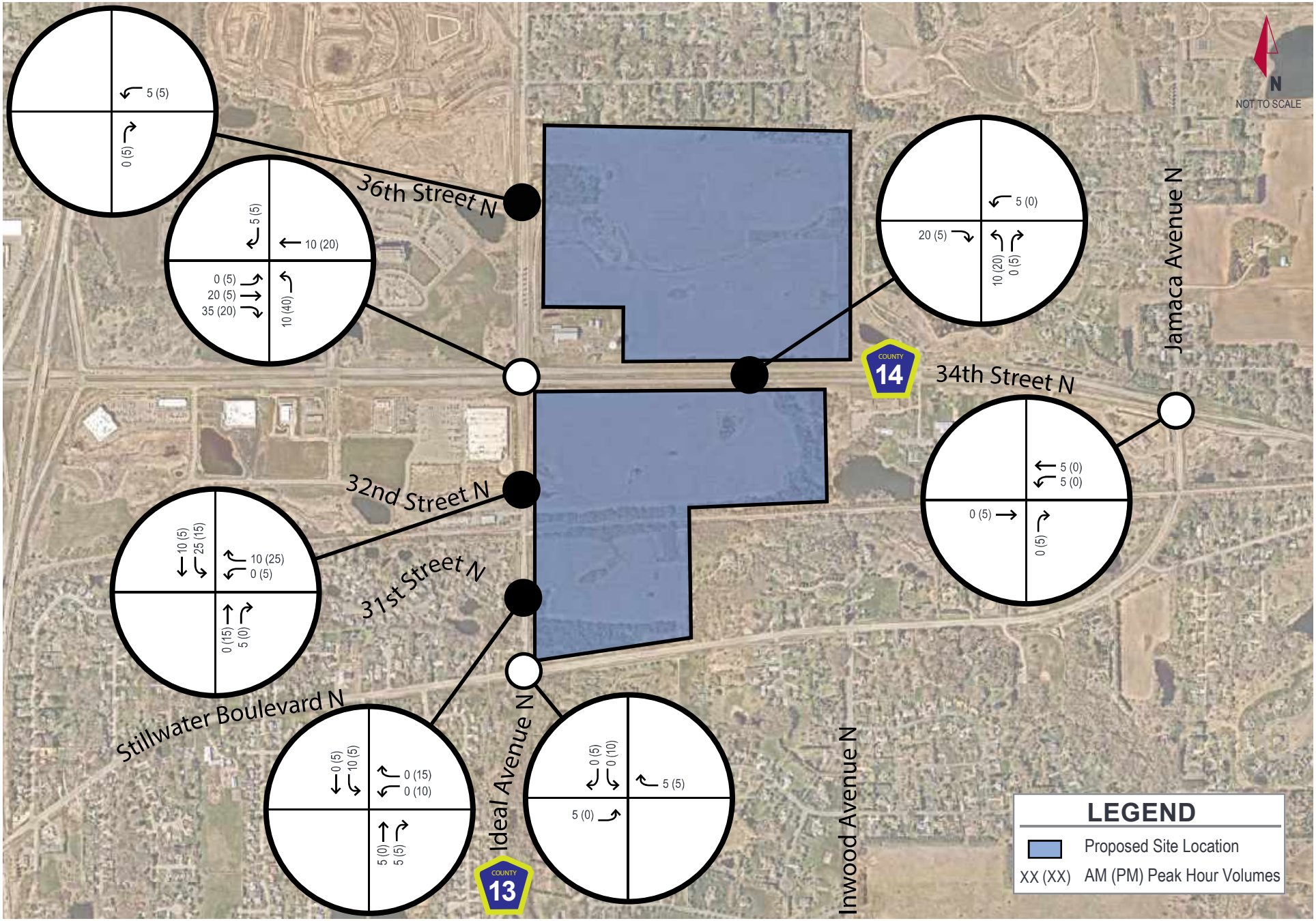

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EXHIBIT 20

HORIZON YEAR (2040) BUILD SCENARIO 4
TOTAL PROJECT TRAFFIC

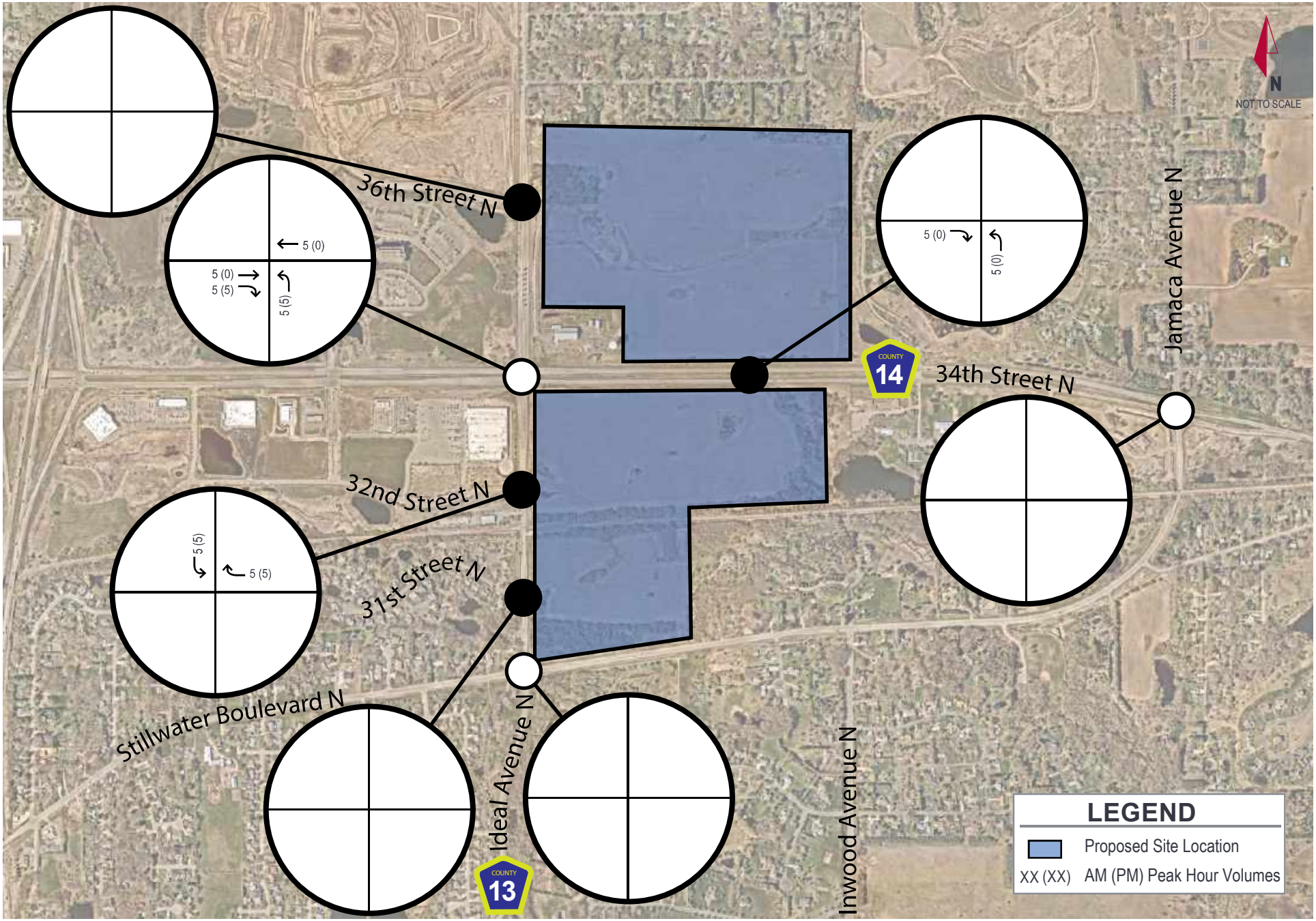

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EXHIBIT 21

HORIZON YEAR (2040) BUILD SCENARIO 4
TRUCK TRAFFIC

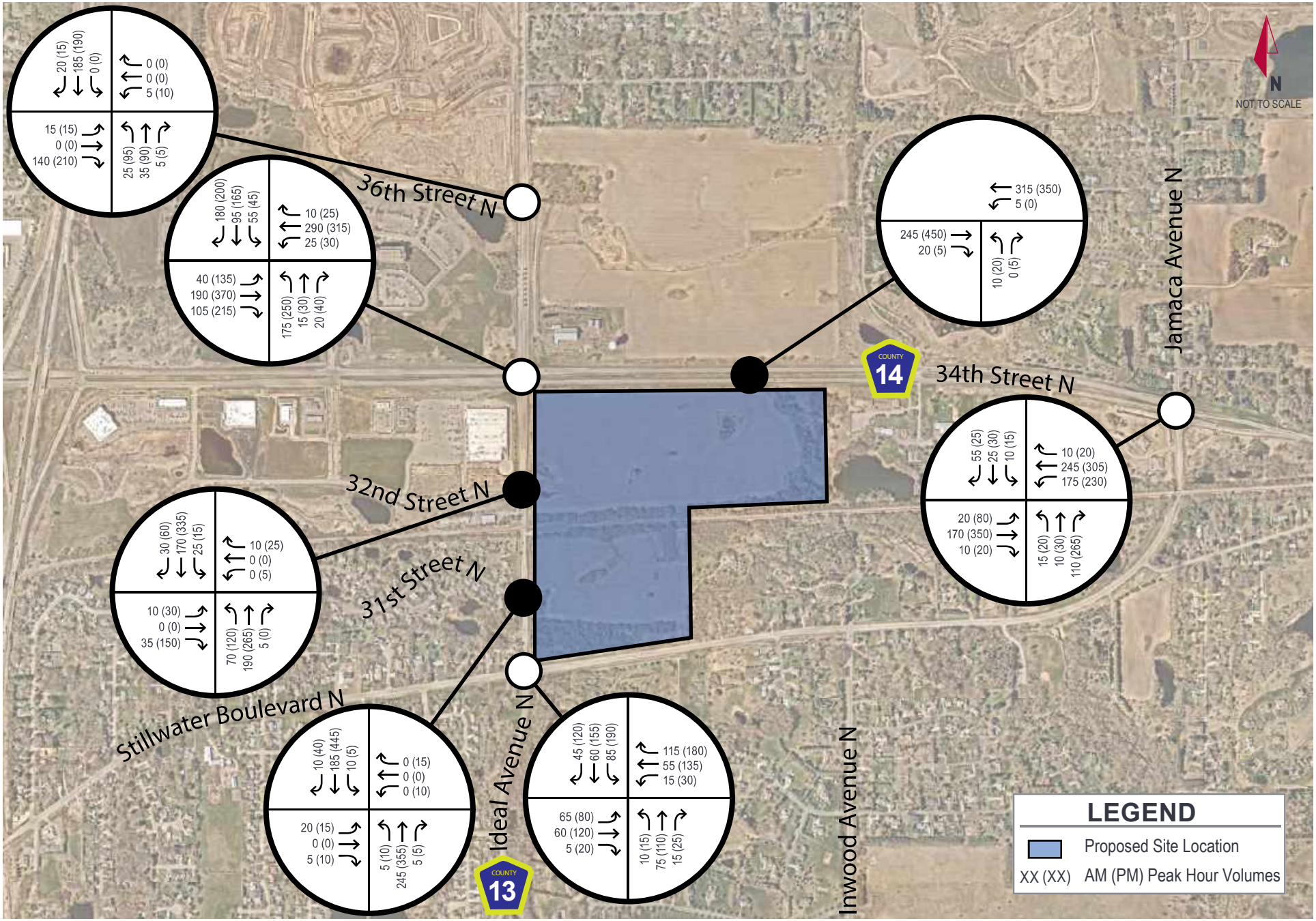

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EXHIBIT 22

OPENING YEAR (2025) BUILD SCENARIOS 1, 2, 3, & 4
PEAK HOUR TRAFFIC PROJECTIONS

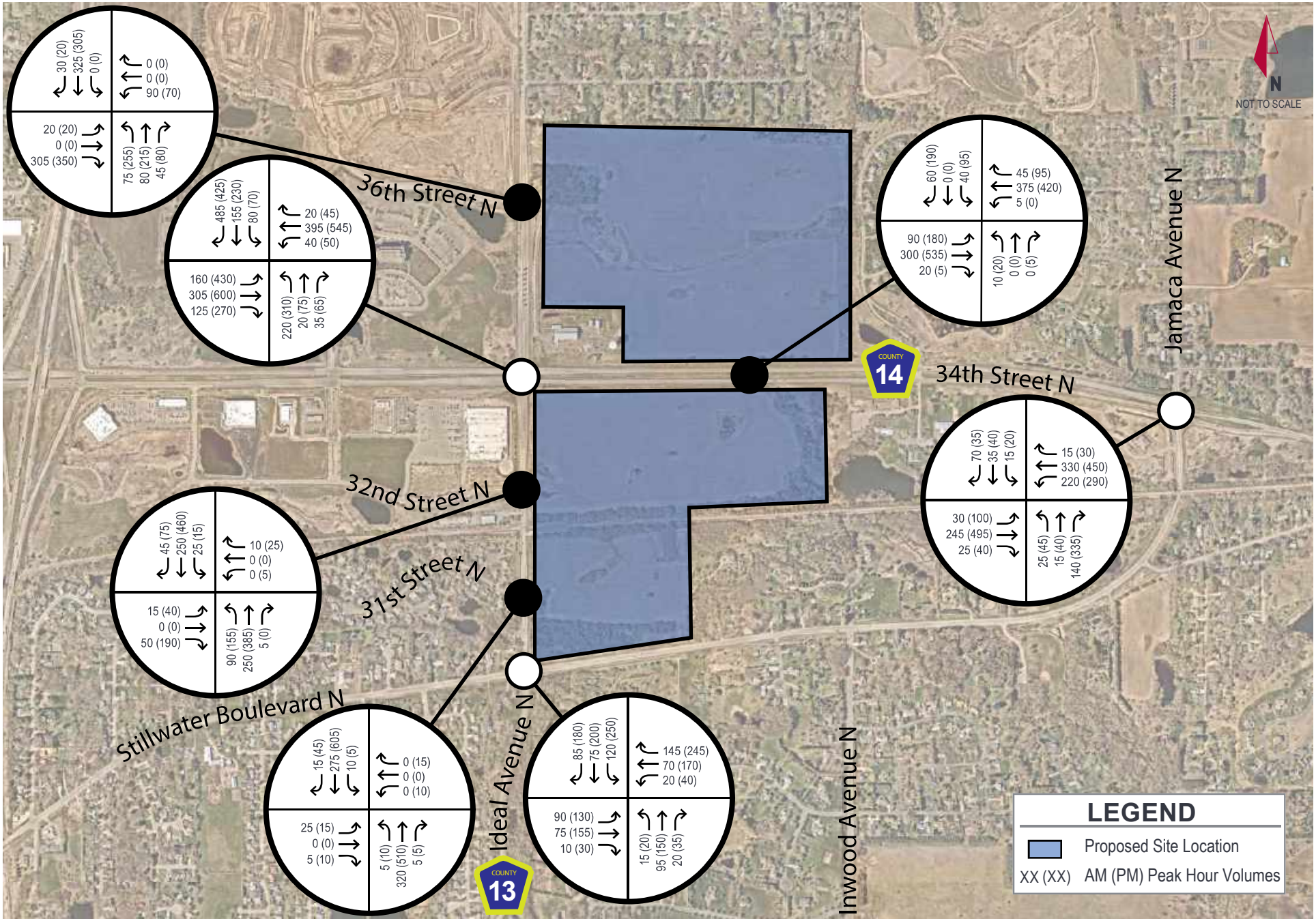

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EXHIBIT 23

HORIZON YEAR (2040) BUILD SCENARIO 1 PEAK HOUR TRAFFIC PROJECTIONS

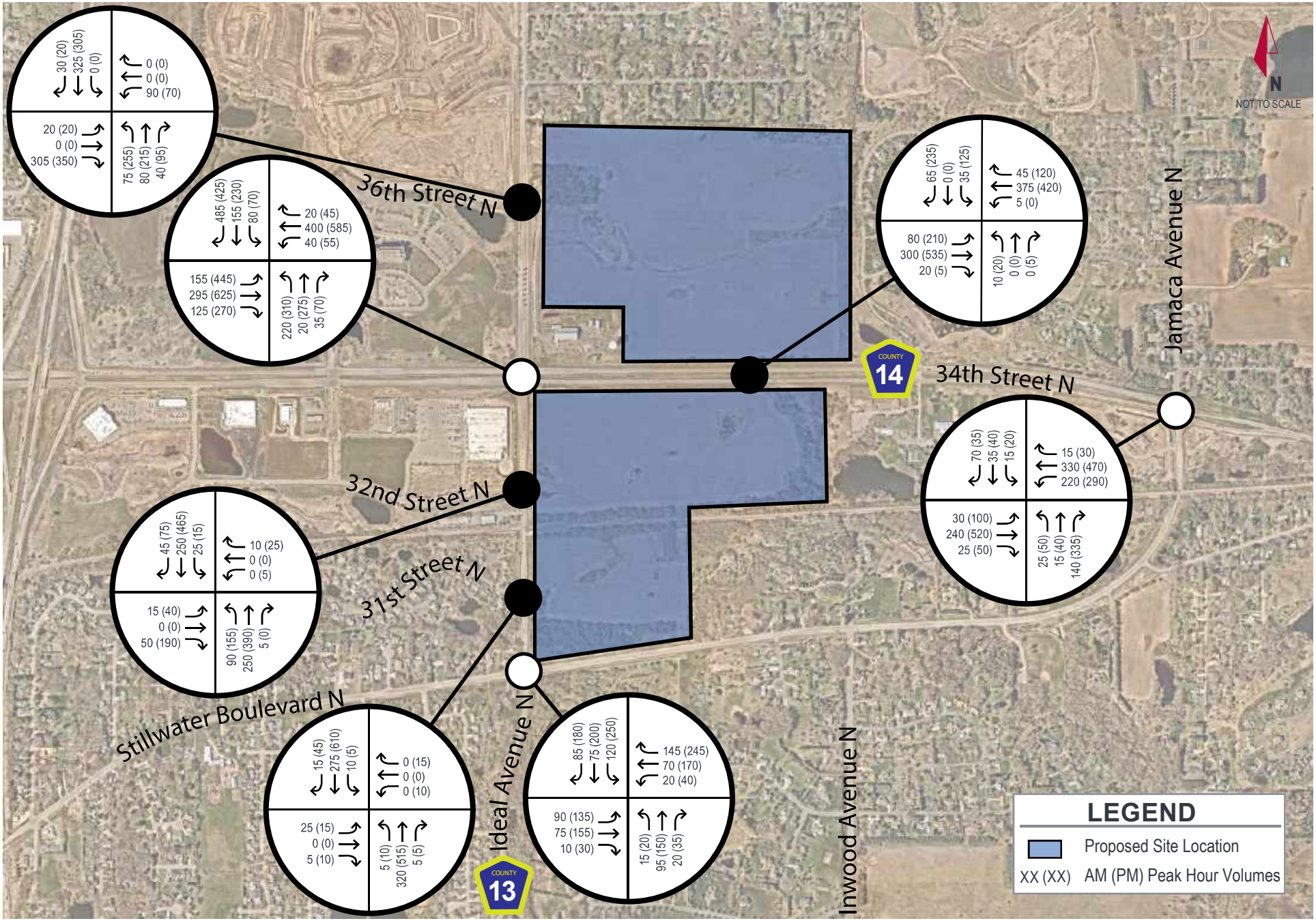

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EXHIBIT 24

HORIZON YEAR (2040) BUILD SCENARIO 2 PEAK HOUR TRAFFIC PROJECTIONS

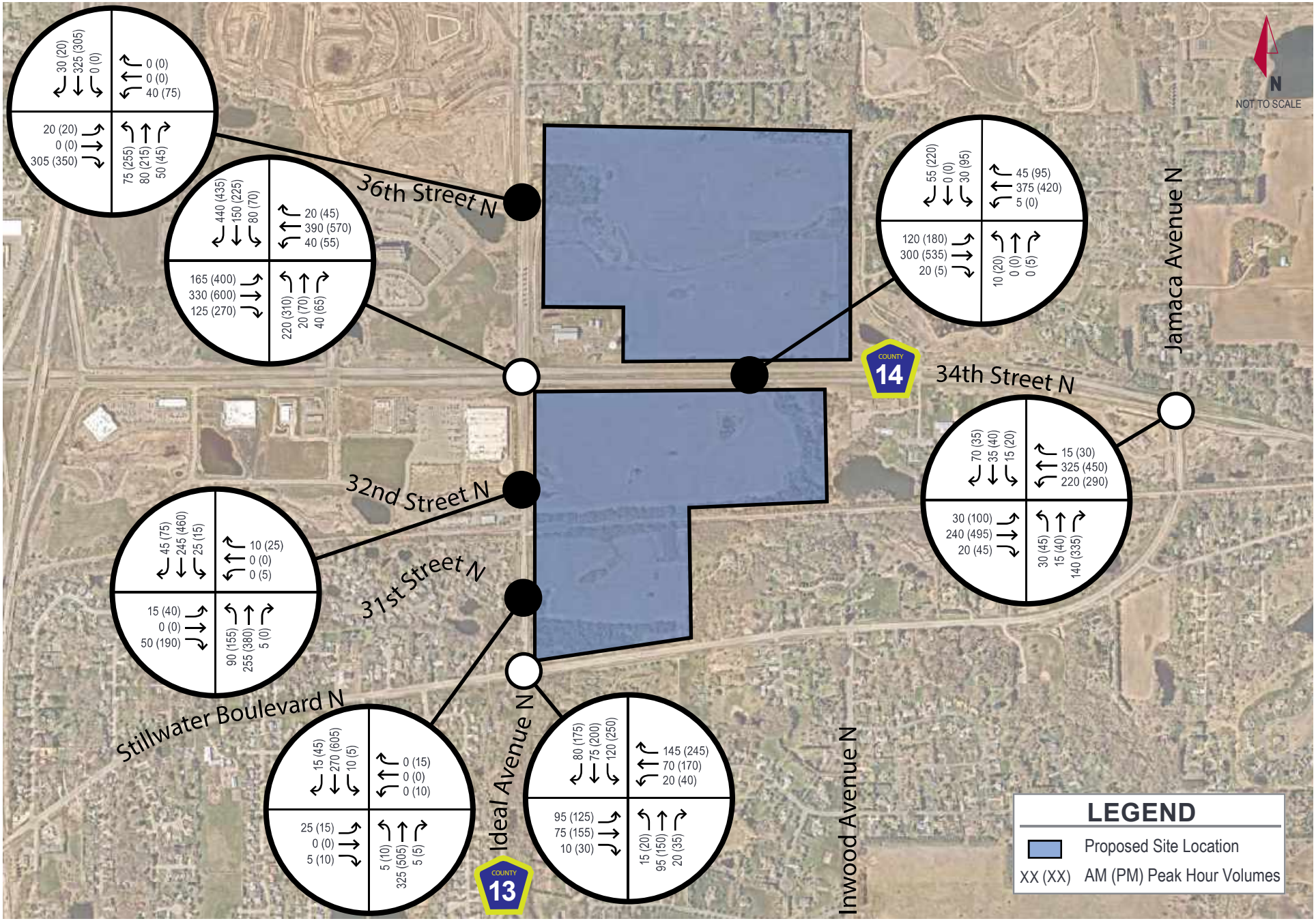

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EXHIBIT 25

HORIZON YEAR (2040) BUILD SCENARIO 3 PEAK HOUR TRAFFIC PROJECTIONS

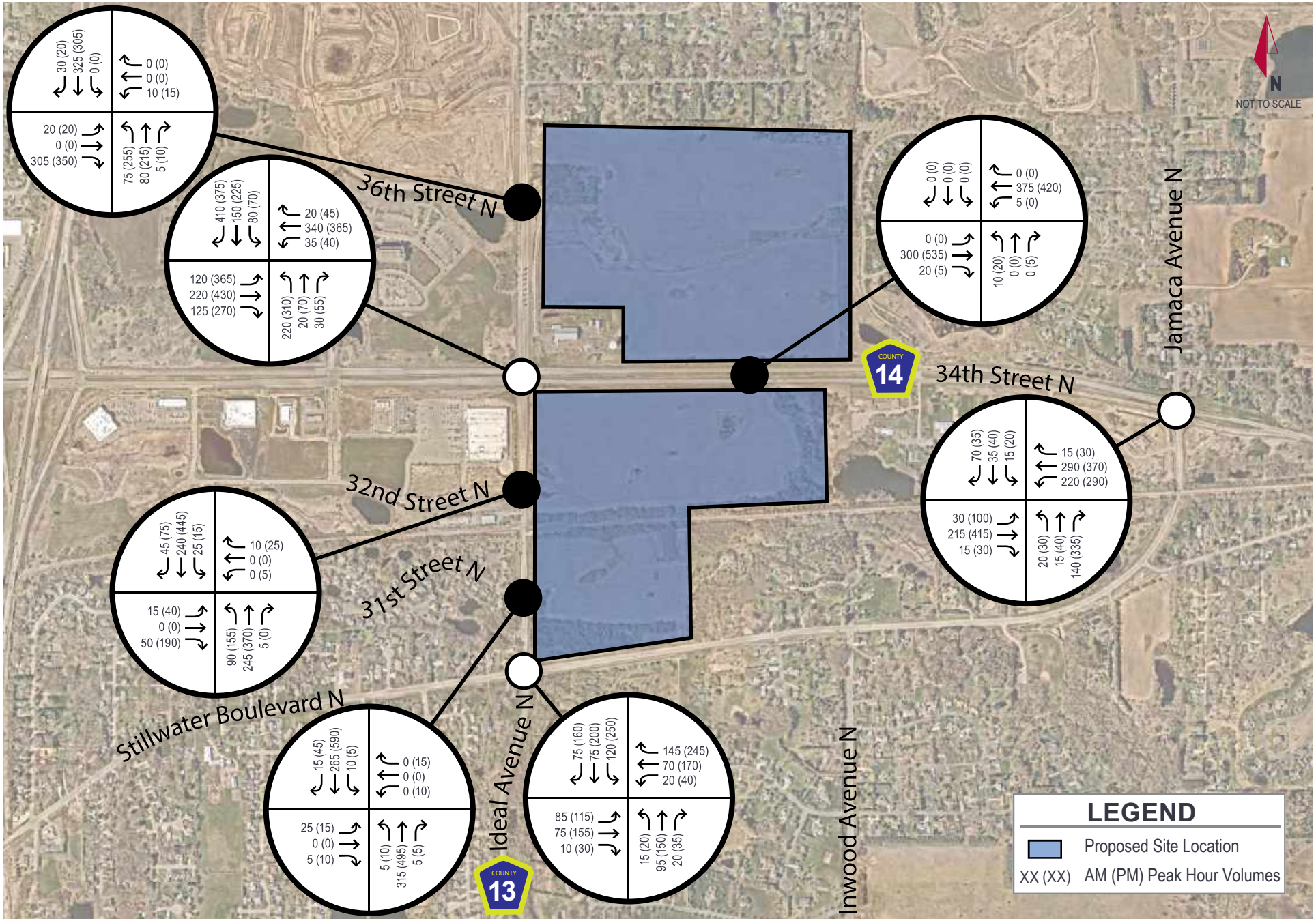

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EXHIBIT 26

HORIZON YEAR (2040) BUILD SCENARIO 4
PEAK HOUR TRAFFIC PROJECTIONS

Appendix B:

Turning Movement Counts

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 34th St N
Site Code:
Start Date: 08/10/2021

Turning Movement Data

Start Time	Eastbound 34th Street Eastbound						Westbound 34th Street Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 AM	1	2	1	1	0	5	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	0	0	3	9
12:15 AM	1	2	3	0	0	6	0	0	0	0	0	0	1	1	0	0	0	2	0	1	0	0	0	1	9
12:30 AM	0	2	0	2	0	4	0	2	0	0	0	2	4	0	0	0	0	4	0	0	0	0	0	0	10
12:45 AM	0	1	7	0	0	8	0	2	0	0	0	2	2	0	0	0	0	2	0	2	1	0	0	3	15
Hourly Total	2	7	11	3	0	23	0	4	0	0	0	4	8	1	0	0	0	9	0	3	4	0	0	7	43
1:00 AM	0	1	2	0	0	3	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	7
1:15 AM	0	1	3	0	0	4	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	1	7
1:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	3
1:45 AM	1	0	1	1	0	3	0	0	0	0	0	0	1	1	0	0	0	2	0	0	2	0	0	2	7
Hourly Total	1	3	6	1	0	11	0	0	0	0	0	0	7	2	0	0	0	9	1	0	3	0	0	4	24
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	1	1	0	0	2	4
2:15 AM	1	0	2	0	0	3	1	1	0	0	0	2	0	1	0	0	0	1	0	0	1	0	0	1	7
2:30 AM	0	1	1	1	0	3	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	0	0	1	6
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	2
Hourly Total	1	1	3	1	0	6	1	1	0	0	0	2	3	3	0	0	0	6	0	1	4	0	0	5	19
3:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	2
3:15 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	4
3:30 AM	0	1	0	0	0	1	0	4	0	0	0	4	4	0	0	0	0	4	0	0	2	0	0	2	11
3:45 AM	0	2	1	0	0	3	0	2	1	0	0	3	3	0	0	0	0	3	1	1	0	0	0	2	11
Hourly Total	0	3	2	0	0	5	0	8	1	0	0	9	7	0	0	0	0	7	1	3	3	0	0	7	28
4:00 AM	0	1	1	0	0	2	0	1	0	0	0	1	2	0	0	0	0	2	0	0	0	0	0	0	5
4:15 AM	0	4	0	0	0	4	0	3	0	0	0	3	4	0	0	0	0	4	0	0	2	0	0	2	13
4:30 AM	0	3	0	0	0	3	0	7	0	0	0	7	10	0	0	0	0	10	0	1	0	0	0	1	21
4:45 AM	0	2	2	0	0	4	0	6	0	0	0	6	7	0	0	0	0	7	0	0	1	0	0	1	18
Hourly Total	0	10	3	0	0	13	0	17	0	0	0	17	23	0	0	0	0	23	0	1	3	0	0	4	57
5:00 AM	0	6	0	0	0	6	0	16	0	0	0	16	12	0	0	0	0	12	0	0	1	0	0	1	35
5:15 AM	0	6	1	0	0	7	1	22	0	0	0	23	9	0	0	0	0	9	0	0	3	0	0	3	42
5:30 AM	0	16	1	0	0	17	4	33	0	0	0	37	20	1	0	0	0	21	1	5	6	0	0	12	87
5:45 AM	1	9	3	0	0	13	2	24	0	0	0	26	17	0	2	0	0	19	2	3	8	0	0	13	71
Hourly Total	1	37	5	0	0	43	7	95	0	0	0	102	58	1	2	0	0	61	3	8	18	0	0	29	235
6:00 AM	1	7	2	1	0	11	4	36	1	0	0	41	14	0	1	0	0	15	3	1	7	0	0	11	78
6:15 AM	4	13	5	1	0	23	2	32	1	0	0	35	24	2	0	0	0	26	3	2	12	0	0	17	101
6:30 AM	4	32	8	0	0	44	1	31	11	0	0	43	28	0	1	0	0	29	2	5	13	0	0	20	136
6:45 AM	2	45	7	1	0	55	7	45	6	0	0	58	39	3	2	0	0	44	6	7	10	0	0	23	180
Hourly Total	11	97	22	3	0	133	14	144	19	0	0	177	105	5	4	0	0	114	14	15	42	0	0	71	495
7:00 AM	1	32	9	2	0	44	2	40	3	0	0	45	19	1	2	0	0	22	2	10	9	0	0	21	132
7:15 AM	1	34	10	1	1	46	2	62	0	0	0	64	21	0	1	0	0	22	2	4	6	0	0	12	144
7:30 AM	3	42	14	0	0	59	4	74	1	0	0	79	41	1	2	0	0	44	4	8	11	0	0	23	205

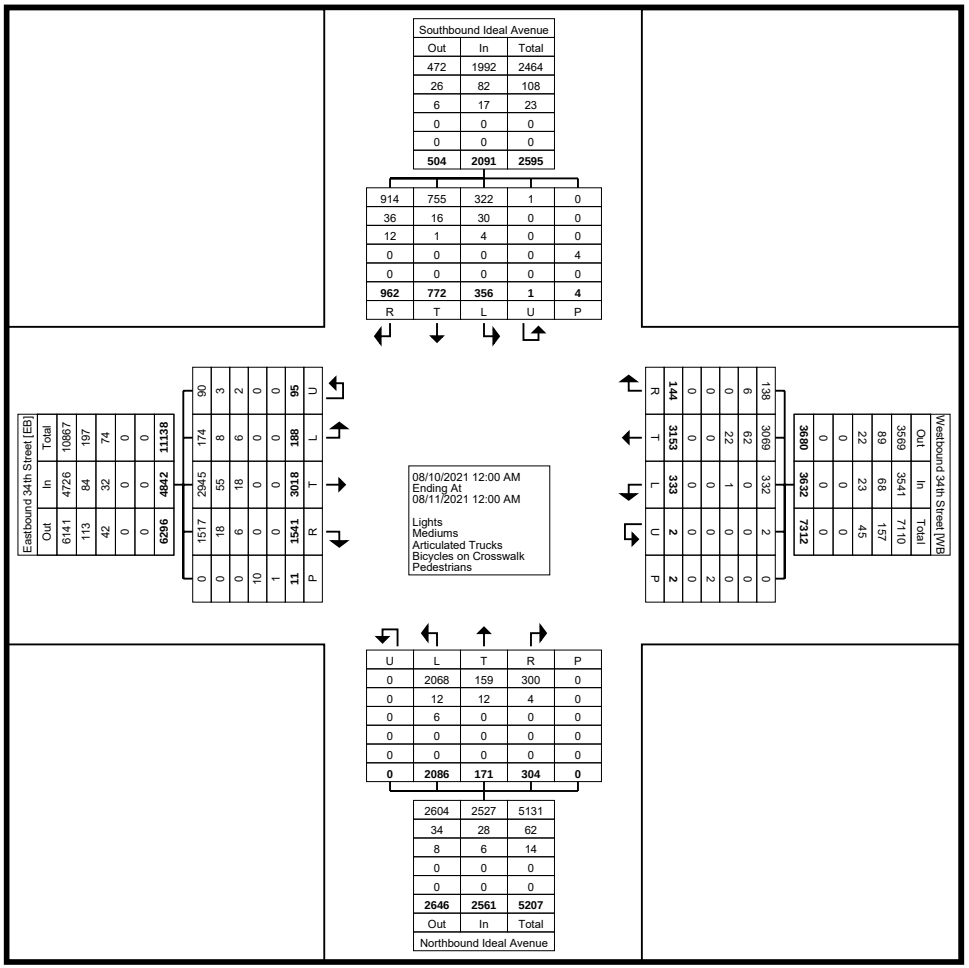
7:45 AM	3	42	18	3	0	66	6	65	3	0	0	74	49	1	7	0	0	57	9	15	23	0	0	47	244
Hourly Total	8	150	51	6	1	215	14	241	7	0	0	262	130	3	12	0	0	145	17	37	49	0	0	103	725
8:00 AM	2	47	17	2	0	68	5	67	0	0	0	72	29	3	8	0	0	40	4	14	19	0	0	37	217
8:15 AM	4	32	16	1	0	53	8	61	2	0	0	71	33	0	3	0	0	36	10	11	15	0	0	36	196
8:30 AM	0	46	17	0	0	63	10	56	2	0	0	68	34	1	1	0	0	36	8	6	17	0	0	31	198
8:45 AM	5	44	19	0	0	68	3	54	2	0	0	59	39	1	3	0	0	43	5	6	9	0	0	20	190
Hourly Total	11	169	69	3	0	252	26	238	6	0	0	270	135	5	15	0	0	155	27	37	60	0	0	124	801
9:00 AM	1	42	13	1	0	57	3	41	3	0	0	47	28	0	2	0	0	30	4	13	11	1	0	29	163
9:15 AM	1	42	15	1	0	59	3	62	0	0	0	65	23	3	2	0	0	28	6	7	11	0	0	24	176
9:30 AM	4	48	15	2	0	69	1	55	1	0	0	57	19	1	5	0	0	25	4	12	15	0	0	31	182
9:45 AM	6	42	8	0	0	56	4	46	4	0	0	54	12	2	5	0	0	19	4	9	17	0	0	30	159
Hourly Total	12	174	51	4	0	241	11	204	8	0	0	223	82	6	14	0	0	102	18	41	54	1	0	114	680
10:00 AM	0	42	16	1	2	59	5	39	2	0	0	46	17	1	0	0	0	18	2	10	12	0	0	24	147
10:15 AM	1	35	12	4	0	52	2	48	1	0	0	51	31	2	5	0	0	38	2	15	18	0	0	35	176
10:30 AM	5	48	12	1	0	66	3	53	4	0	0	60	29	1	1	0	0	31	4	12	16	0	0	32	189
10:45 AM	0	41	21	3	0	65	3	46	2	0	0	51	30	7	6	0	0	43	4	7	19	0	0	30	189
Hourly Total	6	166	61	9	2	242	13	186	9	0	0	208	107	11	12	0	0	130	12	44	65	0	0	121	701
11:00 AM	3	44	22	0	0	69	7	57	4	0	0	68	20	4	3	0	0	27	11	9	18	0	0	38	202
11:15 AM	4	43	15	1	0	63	14	43	4	0	0	61	31	4	5	0	0	40	4	15	18	0	0	37	201
11:30 AM	4	39	24	3	0	70	11	58	2	0	0	71	30	1	6	0	0	37	11	13	17	0	0	41	219
11:45 AM	4	45	14	1	0	64	6	45	10	0	0	61	19	2	5	0	0	26	8	18	25	0	0	51	202
Hourly Total	15	171	75	5	0	266	38	203	20	0	0	261	100	11	19	0	0	130	34	55	78	0	0	167	824
12:00 PM	1	49	26	1	0	77	5	53	4	0	0	62	31	2	4	0	0	37	6	16	18	0	0	40	216
12:15 PM	4	59	24	0	0	87	6	60	1	0	0	67	31	7	6	0	0	44	10	17	23	0	0	50	248
12:30 PM	5	45	31	0	0	81	7	53	0	0	0	60	33	0	6	0	0	39	5	12	16	0	0	33	213
12:45 PM	4	50	19	1	0	74	6	37	1	0	0	44	33	3	6	0	0	42	6	5	15	0	0	26	186
Hourly Total	14	203	100	2	0	319	24	203	6	0	0	233	128	12	22	0	0	162	27	50	72	0	0	149	863
1:00 PM	2	31	26	2	1	61	5	41	3	0	0	49	30	1	4	0	0	35	5	10	12	0	0	27	172
1:15 PM	1	51	18	1	0	71	5	38	4	0	0	47	23	3	5	0	0	31	4	10	15	0	0	29	178
1:30 PM	4	44	24	0	0	72	5	49	1	0	0	55	30	2	7	0	0	39	6	14	11	0	0	31	197
1:45 PM	3	43	23	2	0	71	6	45	3	0	0	54	38	4	6	0	0	48	2	16	9	0	0	27	200
Hourly Total	10	169	91	5	1	275	21	173	11	0	0	205	121	10	22	0	0	153	17	50	47	0	0	114	747
2:00 PM	5	44	25	1	0	75	7	26	3	0	0	36	24	4	7	0	0	35	8	15	15	0	0	38	184
2:15 PM	2	48	30	1	0	81	3	42	0	0	0	45	32	6	5	0	0	43	6	14	12	0	0	32	201
2:30 PM	1	66	27	2	0	96	5	56	2	0	1	63	28	1	5	0	0	34	5	20	12	0	0	37	230
2:45 PM	3	54	29	1	0	87	10	63	5	0	0	78	32	2	4	0	0	38	7	14	12	0	0	33	236
Hourly Total	11	212	111	5	0	339	25	187	10	0	1	222	116	13	21	0	0	150	26	63	51	0	0	140	851
3:00 PM	2	67	36	3	4	108	12	48	4	0	0	64	37	3	4	0	0	44	5	18	29	0	4	52	268
3:15 PM	2	61	31	3	0	97	6	74	0	0	0	80	29	3	7	0	0	39	7	18	8	0	0	33	249
3:30 PM	6	66	27	1	0	100	6	62	0	0	0	68	39	5	3	0	0	47	16	12	16	0	0	44	259
3:45 PM	5	81	49	5	0	140	5	58	3	0	0	66	43	2	10	0	0	55	10	21	17	0	0	48	309
Hourly Total	15	275	143	12	4	445	29	242	7	0	0	278	148	13	24	0	0	185	38	69	70	0	4	177	1085
4:00 PM	4	73	45	3	0	125	2	64	4	0	0	70	41	2	7	0	0	50	9	16	19	0	0	44	289
4:15 PM	1	100	54	2	0	157	7	67	0	1	0	75	48	2	10	0	0	60	4	24	18	0	0	46	338
4:30 PM	5	82	49	2	0	138	8	78	0	0	0	86	43	3	8	0	0	54	5	23	20	0	0	48	326
4:45 PM	3	91	42	2	0	138	5	80	3	0	0	88	60	1	11	0	0	72	9	11	15	0	0	35	333
Hourly Total	13	346	190	9	0	558	22	289	7	1	0	319	192	8	36	0	0	236	27	74	72	0	0	173	1286
5:00 PM	4	77	36	3	0	120	6	59	6	0	0	71	47	2	7	0	0	56	6	27	21	0	0	54	301
5:15 PM	3	66	36	0	0	105	5	50	3	0	0	58	60	3	11	0	0	74	7	15	18	0	0	40	277
5:30 PM	3	53	37	1	1	94	5	55	3	0	0	63	72	7	10	0	0	89	9	15	21	0	0	45	291
5:45 PM	1	61	29	0	0	91	5	49	1	0	0	55	59	12	8	0	0	79	8	17	24	0	0	49	274
Hourly Total	11	257	138	4	1	410	21	213	13	0	0	247	238	24	36	0	0	298	30	74	84	0	0	188	1143

6:00 PM	4	65	46	0	1	115	4	40	0	0	0	44	46	3	5	0	0	54	10	21	13	0	0	44	257
6:15 PM	8	55	30	5	0	98	4	50	1	1	0	56	41	5	11	0	0	57	6	8	15	0	0	29	240
6:30 PM	3	53	17	1	0	74	4	36	3	0	0	43	32	5	6	0	0	43	10	11	14	0	0	35	195
6:45 PM	2	46	28	2	0	78	9	33	1	0	1	43	26	3	6	0	0	35	6	10	15	0	0	31	187
Hourly Total	17	219	121	8	1	365	21	159	5	1	1	186	145	16	28	0	0	189	32	50	57	0	0	139	879
7:00 PM	1	35	28	0	0	64	5	33	2	0	0	40	24	1	4	0	0	29	1	14	7	0	0	22	155
7:15 PM	4	29	25	0	0	58	10	38	3	0	0	51	22	3	3	0	0	28	3	11	14	0	0	28	165
7:30 PM	5	39	13	1	0	58	4	28	0	0	0	32	22	2	4	0	0	28	2	11	13	0	0	26	144
7:45 PM	3	19	22	0	0	44	4	29	5	0	0	38	20	0	2	0	0	22	4	5	12	0	0	21	125
Hourly Total	13	122	88	1	0	224	23	128	10	0	0	161	88	6	13	0	0	107	10	41	46	0	0	97	589
8:00 PM	5	28	21	1	0	55	6	41	1	0	0	48	19	7	7	0	0	33	3	7	18	0	0	28	164
8:15 PM	2	20	34	3	0	59	5	33	1	0	0	39	24	5	4	0	0	33	2	11	16	0	0	29	160
8:30 PM	2	17	13	4	1	36	2	19	0	0	0	21	25	3	3	0	0	31	1	7	13	0	0	21	109
8:45 PM	0	24	14	1	0	39	2	22	1	0	0	25	8	1	0	0	0	9	1	6	8	0	0	15	88
Hourly Total	9	89	82	9	1	189	15	115	3	0	0	133	76	16	14	0	0	106	7	31	55	0	0	93	521
9:00 PM	3	17	19	0	0	39	1	18	0	0	0	19	19	1	2	0	0	22	7	6	9	0	0	22	102
9:15 PM	0	17	20	1	0	38	2	20	0	0	0	22	7	2	4	0	0	13	1	3	2	0	0	6	79
9:30 PM	0	16	7	1	0	24	2	17	0	0	0	19	8	0	0	0	0	8	2	6	3	0	0	11	62
9:45 PM	0	22	12	1	0	35	1	7	1	0	0	9	6	0	1	0	0	7	1	2	2	0	0	5	56
Hourly Total	3	72	58	3	0	136	6	62	1	0	0	69	40	3	7	0	0	50	11	17	16	0	0	44	299
10:00 PM	1	12	13	0	0	26	1	6	0	0	0	7	5	1	2	0	0	8	0	0	3	0	0	3	44
10:15 PM	0	17	10	1	0	28	0	9	0	0	0	9	7	1	0	0	0	8	1	1	2	0	0	4	49
10:30 PM	0	13	8	0	0	21	0	11	0	0	0	11	3	0	0	0	0	3	0	0	0	0	0	0	35
10:45 PM	1	8	9	0	0	18	0	2	0	0	0	2	4	0	0	0	0	4	0	3	1	0	0	4	28
Hourly Total	2	50	40	1	0	93	1	28	0	0	0	29	19	2	2	0	0	23	1	4	6	0	0	11	156
11:00 PM	1	3	3	1	0	8	0	5	1	0	0	6	3	0	1	0	0	4	2	2	2	0	0	6	24
11:15 PM	0	5	9	0	0	14	1	4	0	0	0	5	1	0	0	0	0	1	0	0	0	0	0	0	20
11:30 PM	1	6	5	0	0	12	0	3	0	0	0	3	3	0	0	0	0	3	0	1	1	0	0	2	20
11:45 PM	0	2	3	0	0	5	0	1	0	0	0	1	3	0	0	0	0	3	1	1	0	0	0	2	11
Hourly Total	2	16	20	1	0	39	1	13	1	0	0	15	10	0	1	0	0	11	3	4	3	0	0	10	75
Grand Total	188	3018	1541	95	11	4842	333	3153	144	2	2	3632	2086	171	304	0	0	2561	356	772	962	1	4	2091	13126
Approach %	3.9	62.3	31.8	2.0	-	-	9.2	86.8	4.0	0.1	-	-	81.5	6.7	11.9	0.0	-	-	17.0	36.9	46.0	0.0	-	-	-
Total %	1.4	23.0	11.7	0.7	-	36.9	2.5	24.0	1.1	0.0	-	27.7	15.9	1.3	2.3	0.0	-	19.5	2.7	5.9	7.3	0.0	-	15.9	-
Lights	174	2945	1517	90	-	4726	332	3069	138	2	-	3541	2068	159	300	0	-	2527	322	755	914	1	-	1992	12786
% Lights	92.6	97.6	98.4	94.7	-	97.6	99.7	97.3	95.8	100.0	-	97.5	99.1	93.0	98.7	-	-	98.7	90.4	97.8	95.0	100.0	-	95.3	97.4
Mediums	8	55	18	3	-	84	0	62	6	0	-	68	12	12	4	0	-	28	30	16	36	0	-	82	262
% Mediums	4.3	1.8	1.2	3.2	-	1.7	0.0	2.0	4.2	0.0	-	1.9	0.6	7.0	1.3	-	-	1.1	8.4	2.1	3.7	0.0	-	3.9	2.0
Articulated Trucks	6	18	6	2	-	32	1	22	0	0	-	23	6	0	0	0	-	6	4	1	12	0	-	17	78
% Articulated Trucks	3.2	0.6	0.4	2.1	-	0.7	0.3	0.7	0.0	0.0	-	0.6	0.3	0.0	0.0	-	-	0.2	1.1	0.1	1.2	0.0	-	0.8	0.6
Bicycles on Crosswalk	-	-	-	-	10	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	90.9	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	9.1	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 34th St N
Site Code:
Start Date: 08/10/2021



Turning Movement Data Plot

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 34th St N
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Eastbound 34th Street Eastbound						Westbound 34th Street Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	3	42	14	0	0	59	4	74	1	0	0	79	41	1	2	0	0	44	4	8	11	0	0	23	205
7:45 AM	3	42	18	3	0	66	6	65	3	0	0	74	49	1	7	0	0	57	9	15	23	0	0	47	244
8:00 AM	2	47	17	2	0	68	5	67	0	0	0	72	29	3	8	0	0	40	4	14	19	0	0	37	217
8:15 AM	4	32	16	1	0	53	8	61	2	0	0	71	33	0	3	0	0	36	10	11	15	0	0	36	196
Total	12	163	65	6	0	246	23	267	6	0	0	296	152	5	20	0	0	177	27	48	68	0	0	143	862
Approach %	4.9	66.3	26.4	2.4	-	-	7.8	90.2	2.0	0.0	-	-	85.9	2.8	11.3	0.0	-	-	18.9	33.6	47.6	0.0	-	-	-
Total %	1.4	18.9	7.5	0.7	-	28.5	2.7	31.0	0.7	0.0	-	34.3	17.6	0.6	2.3	0.0	-	20.5	3.1	5.6	7.9	0.0	-	16.6	-
PHF	0.750	0.867	0.903	0.500	-	0.904	0.719	0.902	0.500	0.000	-	0.937	0.776	0.417	0.625	0.000	-	0.776	0.675	0.800	0.739	0.000	-	0.761	0.883
Lights	12	153	62	3	-	230	23	258	6	0	-	287	151	3	19	0	-	173	23	46	61	0	-	130	820
% Lights	100.0	93.9	95.4	50.0	-	93.5	100.0	96.6	100.0	-	-	97.0	99.3	60.0	95.0	-	-	97.7	85.2	95.8	89.7	-	-	90.9	95.1
Mediums	0	8	3	3	-	14	0	9	0	0	-	9	1	2	1	0	-	4	4	2	7	0	-	13	40
% Mediums	0.0	4.9	4.6	50.0	-	5.7	0.0	3.4	0.0	-	-	3.0	0.7	40.0	5.0	-	-	2.3	14.8	4.2	10.3	-	-	9.1	4.6
Articulated Trucks	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2
% Articulated Trucks	0.0	1.2	0.0	0.0	-	0.8	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
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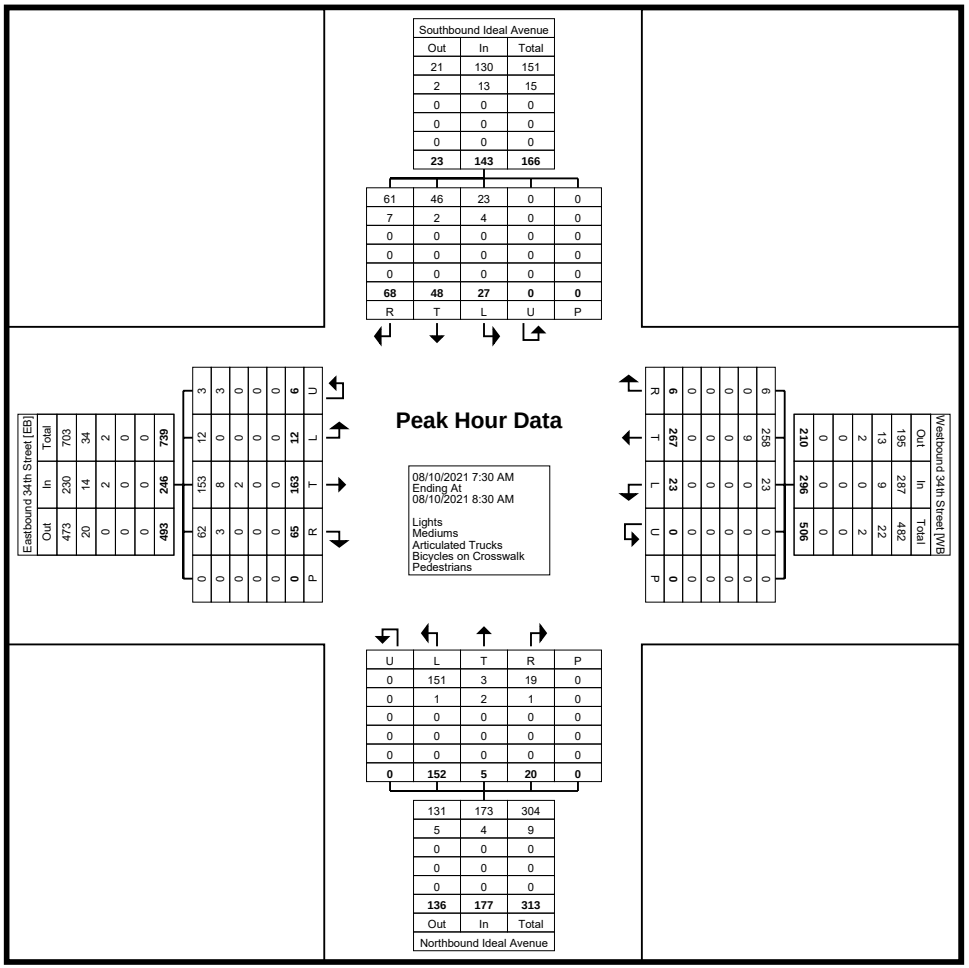


Turning Movement Peak Hour Data Plot (7:30 AM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 34th St N
Site Code:
Start Date: 08/10/2021

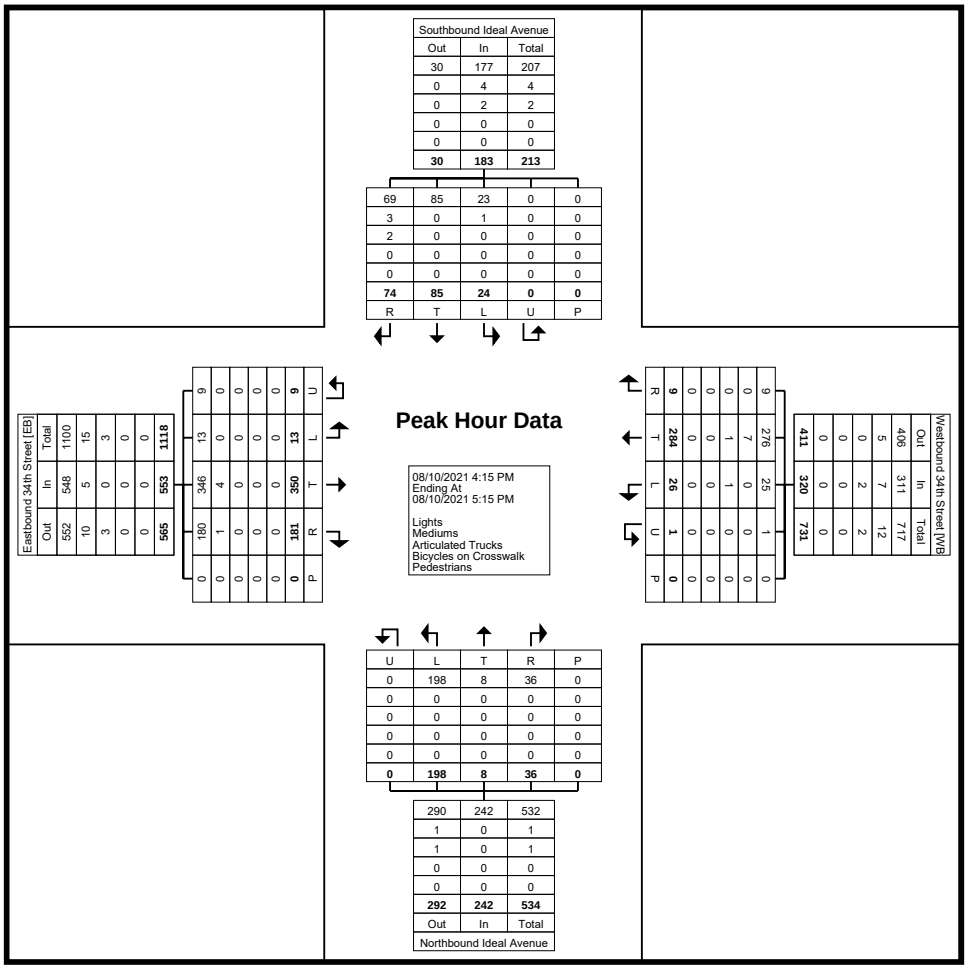
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Eastbound 34th Street Eastbound						Westbound 34th Street Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	1	100	54	2	0	157	7	67	0	1	0	75	48	2	10	0	0	60	4	24	18	0	0	46	338
4:30 PM	5	82	49	2	0	138	8	78	0	0	0	86	43	3	8	0	0	54	5	23	20	0	0	48	326
4:45 PM	3	91	42	2	0	138	5	80	3	0	0	88	60	1	11	0	0	72	9	11	15	0	0	35	333
5:00 PM	4	77	36	3	0	120	6	59	6	0	0	71	47	2	7	0	0	56	6	27	21	0	0	54	301
Total	13	350	181	9	0	553	26	284	9	1	0	320	198	8	36	0	0	242	24	85	74	0	0	183	1298
Approach %	2.4	63.3	32.7	1.6	-	-	8.1	88.8	2.8	0.3	-	-	81.8	3.3	14.9	0.0	-	-	13.1	46.4	40.4	0.0	-	-	-
Total %	1.0	27.0	13.9	0.7	-	42.6	2.0	21.9	0.7	0.1	-	24.7	15.3	0.6	2.8	0.0	-	18.6	1.8	6.5	5.7	0.0	-	14.1	-
PHF	0.650	0.875	0.838	0.750	-	0.881	0.813	0.888	0.375	0.250	-	0.909	0.825	0.667	0.818	0.000	-	0.840	0.667	0.787	0.881	0.000	-	0.847	0.960
Lights	13	346	180	9	-	548	25	276	9	1	-	311	198	8	36	0	-	242	23	85	69	0	-	177	1278
% Lights	100.0	98.9	99.4	100.0	-	99.1	96.2	97.2	100.0	100.0	-	97.2	100.0	100.0	100.0	-	-	100.0	95.8	100.0	93.2	-	-	96.7	98.5
Mediums	0	4	1	0	-	5	0	7	0	0	-	7	0	0	0	0	-	0	1	0	3	0	-	4	16
% Mediums	0.0	1.1	0.6	0.0	-	0.9	0.0	2.5	0.0	0.0	-	2.2	0.0	0.0	0.0	-	-	0.0	4.2	0.0	4.1	-	-	2.2	1.2
Articulated Trucks	0	0	0	0	-	0	1	1	0	0	-	2	0	0	0	0	-	0	0	0	2	0	-	2	4
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	3.8	0.4	0.0	0.0	-	0.6	0.0	0.0	0.0	-	-	0.0	0.0	0.0	2.7	-	-	1.1	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 34th St N
Site Code:
Start Date: 08/10/2021



Turning Movement Peak Hour Data Plot (4:15 PM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 32nd Street
Site Code:
Start Date: 08/10/2021

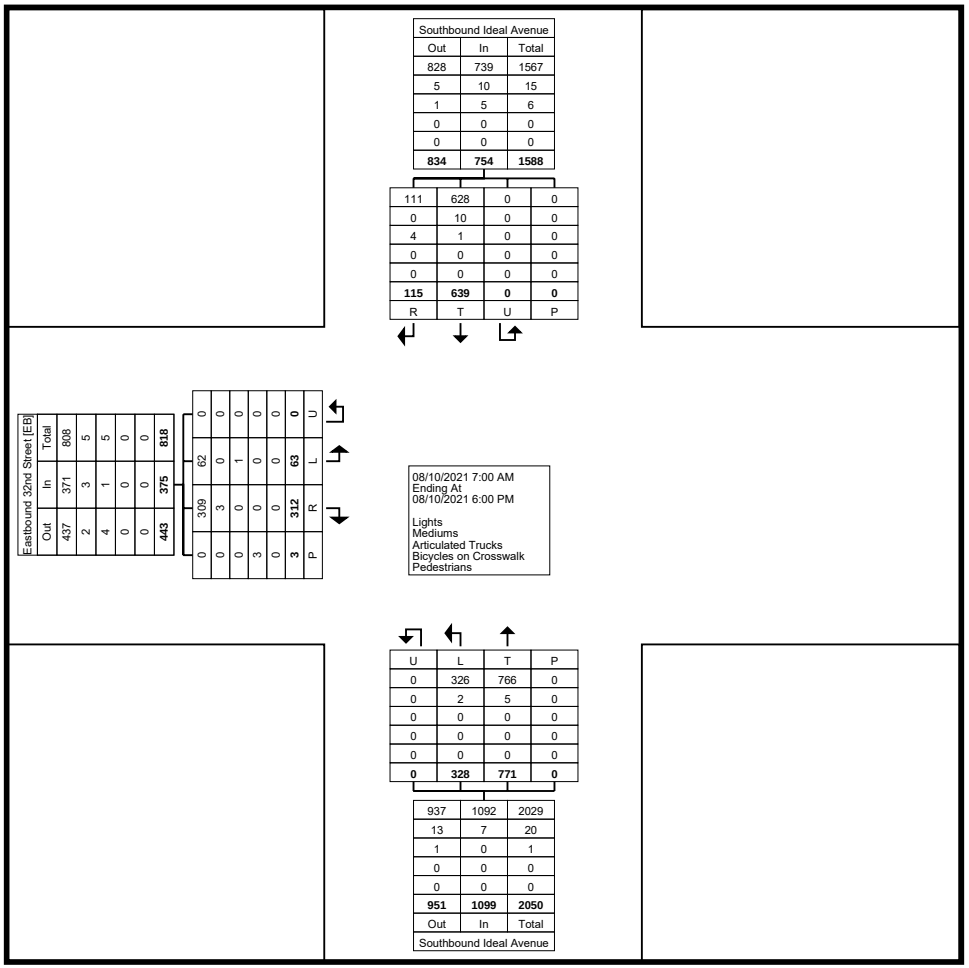
Turning Movement Data

Start Time	Eastbound 32nd Street Eastbound					Southbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	1	3	0	0	4	11	19	0	0	30	17	3	0	0	20	54
7:15 AM	0	7	0	0	7	7	24	0	0	31	10	7	0	0	17	55
7:30 AM	0	5	0	0	5	14	47	0	0	61	21	4	0	0	25	91
7:45 AM	4	9	0	0	13	16	51	0	0	67	36	4	0	0	40	120
Hourly Total	5	24	0	0	29	48	141	0	0	189	84	18	0	0	102	320
8:00 AM	6	11	0	0	17	10	32	0	0	42	32	6	0	0	38	97
8:15 AM	0	10	0	0	10	21	36	0	0	57	32	5	0	0	37	104
8:30 AM	0	11	0	0	11	12	37	0	0	49	21	7	0	0	28	88
8:45 AM	3	9	0	0	12	13	40	0	0	53	20	9	0	0	29	94
Hourly Total	9	41	0	0	50	56	145	0	0	201	105	27	0	0	132	383
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	9	31	0	0	40	32	45	0	0	77	54	6	0	0	60	177
4:15 PM	7	32	0	0	39	17	46	0	0	63	73	12	0	0	85	187
4:30 PM	5	30	0	0	35	32	53	0	0	85	74	12	0	0	86	206
4:45 PM	10	32	0	0	42	35	59	0	0	94	51	6	0	0	57	193
Hourly Total	31	125	0	0	156	116	203	0	0	319	252	36	0	0	288	763
5:00 PM	6	42	0	0	48	29	50	0	0	79	52	8	0	0	60	187
5:15 PM	5	34	0	2	39	22	69	0	0	91	59	9	0	0	68	198
5:30 PM	2	24	0	1	26	32	94	0	0	126	47	6	0	0	53	205
5:45 PM	5	22	0	0	27	25	69	0	0	94	40	11	0	0	51	172
Hourly Total	18	122	0	3	140	108	282	0	0	390	198	34	0	0	232	762
Grand Total	63	312	0	3	375	328	771	0	0	1099	639	115	0	0	754	2228
Approach %	16.8	83.2	0.0	-	-	29.8	70.2	0.0	-	-	84.7	15.3	0.0	-	-	-
Total %	2.8	14.0	0.0	-	16.8	14.7	34.6	0.0	-	49.3	28.7	5.2	0.0	-	33.8	-
Lights	62	309	0	-	371	326	766	0	-	1092	628	111	0	-	739	2202
% Lights	98.4	99.0	-	-	98.9	99.4	99.4	-	-	99.4	98.3	96.5	-	-	98.0	98.8
Mediums	0	3	0	-	3	2	5	0	-	7	10	0	0	-	10	20
% Mediums	0.0	1.0	-	-	0.8	0.6	0.6	-	-	0.6	1.6	0.0	-	-	1.3	0.9
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	1	4	0	-	5	6
% Articulated Trucks	1.6	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.2	3.5	-	-	0.7	0.3
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 32nd Street
Site Code:
Start Date: 08/10/2021



Turning Movement Data Plot

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 32nd Street
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Eastbound 32nd Street Eastbound					Southbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	0	5	0	0	5	14	47	0	0	61	21	4	0	0	25	91
7:45 AM	4	9	0	0	13	16	51	0	0	67	36	4	0	0	40	120
8:00 AM	6	11	0	0	17	10	32	0	0	42	32	6	0	0	38	97
8:15 AM	0	10	0	0	10	21	36	0	0	57	32	5	0	0	37	104
Total	10	35	0	0	45	61	166	0	0	227	121	19	0	0	140	412
Approach %	22.2	77.8	0.0	-	-	26.9	73.1	0.0	-	-	86.4	13.6	0.0	-	-	-
Total %	2.4	8.5	0.0	-	10.9	14.8	40.3	0.0	-	55.1	29.4	4.6	0.0	-	34.0	-
PHF	0.417	0.795	0.000	-	0.662	0.726	0.814	0.000	-	0.847	0.840	0.792	0.000	-	0.875	0.858
Lights	10	35	0	-	45	61	163	0	-	224	115	19	0	-	134	403
% Lights	100.0	100.0	-	-	100.0	100.0	98.2	-	-	98.7	95.0	100.0	-	-	95.7	97.8
Mediums	0	0	0	-	0	0	3	0	-	3	6	0	0	-	6	9
% Mediums	0.0	0.0	-	-	0.0	0.0	1.8	-	-	1.3	5.0	0.0	-	-	4.3	2.2
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	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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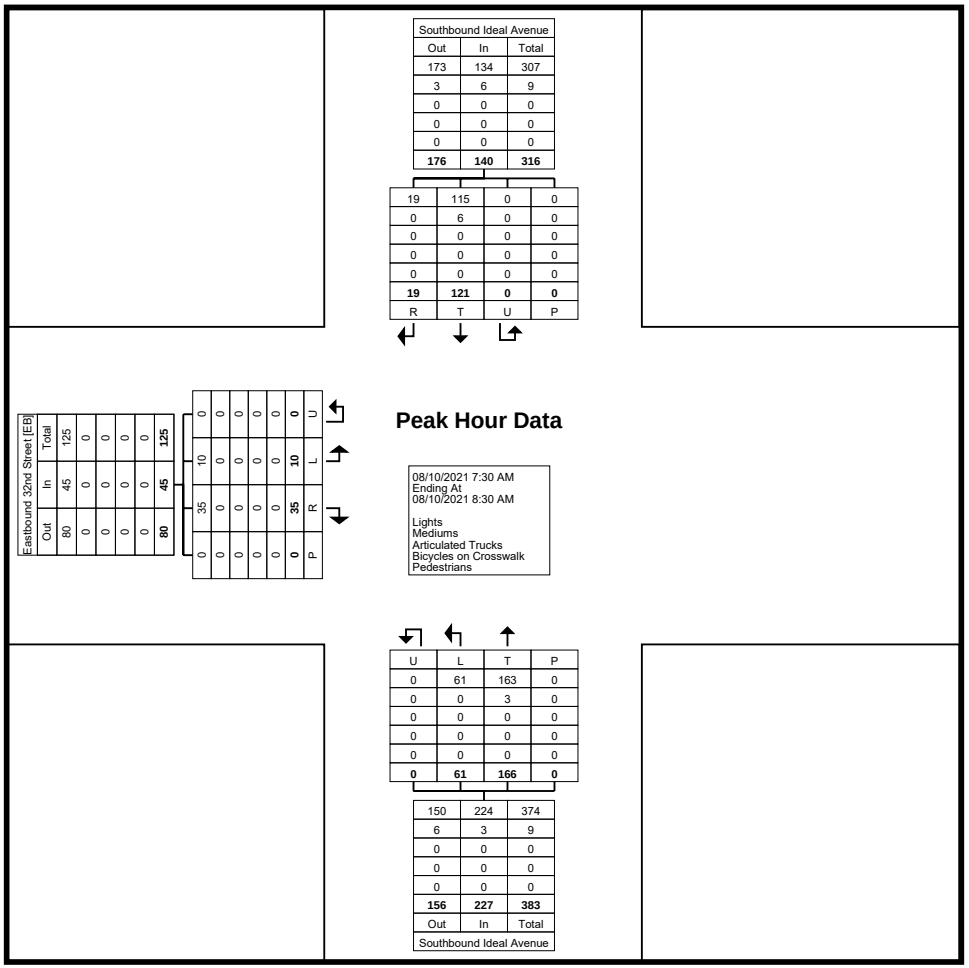
Count Name: Ideal Avenue & 32nd Street
Site Code:
Start Date: 08/10/2021



Turning Movement Peak Hour Data Plot (7:30 AM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 32nd Street
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Eastbound 32nd Street Eastbound					Southbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:30 PM	5	30	0	0	35	32	53	0	0	85	74	12	0	0	86	206
4:45 PM	10	32	0	0	42	35	59	0	0	94	51	6	0	0	57	193
5:00 PM	6	42	0	0	48	29	50	0	0	79	52	8	0	0	60	187
5:15 PM	5	34	0	2	39	22	69	0	0	91	59	9	0	0	68	198
Total	26	138	0	2	164	118	231	0	0	349	236	35	0	0	271	784
Approach %	15.9	84.1	0.0	-	-	33.8	66.2	0.0	-	-	87.1	12.9	0.0	-	-	-
Total %	3.3	17.6	0.0	-	20.9	15.1	29.5	0.0	-	44.5	30.1	4.5	0.0	-	34.6	-
PHF	0.650	0.821	0.000	-	0.854	0.843	0.837	0.000	-	0.928	0.797	0.729	0.000	-	0.788	0.951
Lights	25	137	0	-	162	118	231	0	-	349	235	35	0	-	270	781
% Lights	96.2	99.3	-	-	98.8	100.0	100.0	-	-	100.0	99.6	100.0	-	-	99.6	99.6
Mediums	0	1	0	-	1	0	0	0	-	0	1	0	0	-	1	2
% Mediums	0.0	0.7	-	-	0.6	0.0	0.0	-	-	0.0	0.4	0.0	-	-	0.4	0.3
Articulated Trucks	1	0	0	-	1	0	0	0	-	0	0	0	0	-	0	1
% Articulated Trucks	3.8	0.0	-	-	0.6	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-

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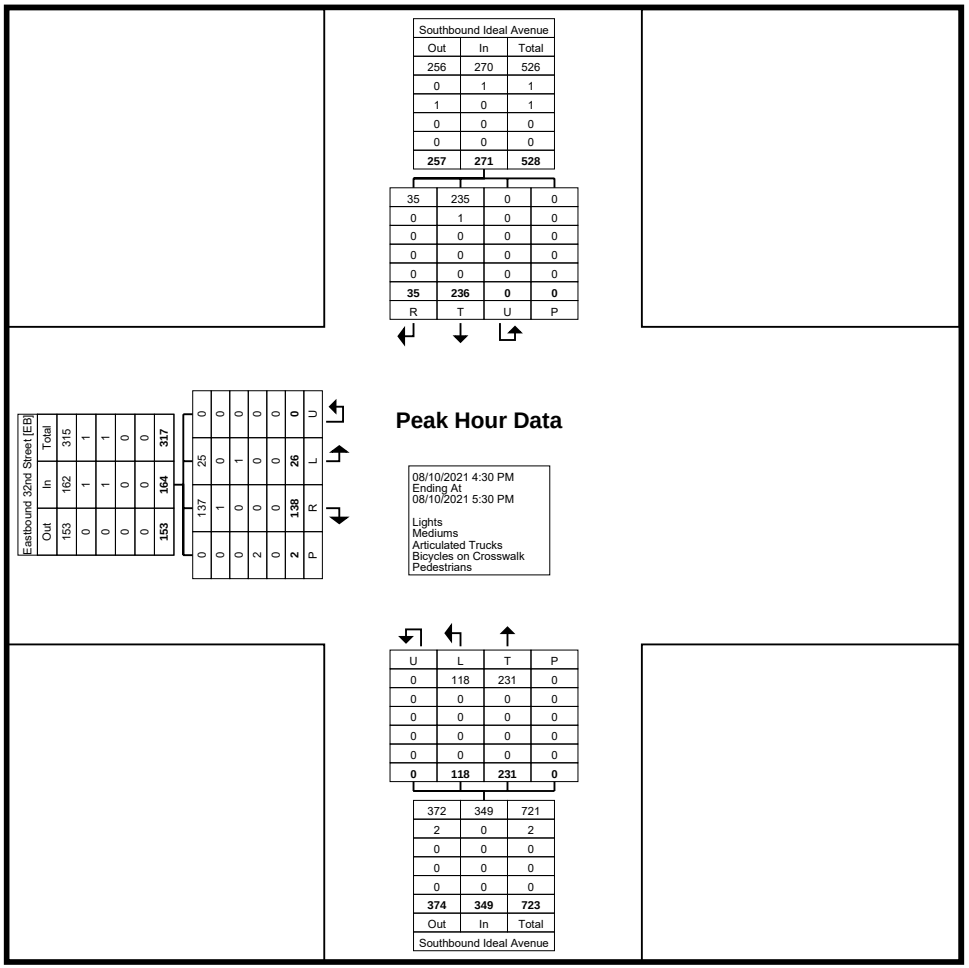


Turning Movement Peak Hour Data Plot (4:30 PM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 31st Street
Site Code:
Start Date: 08/10/2021

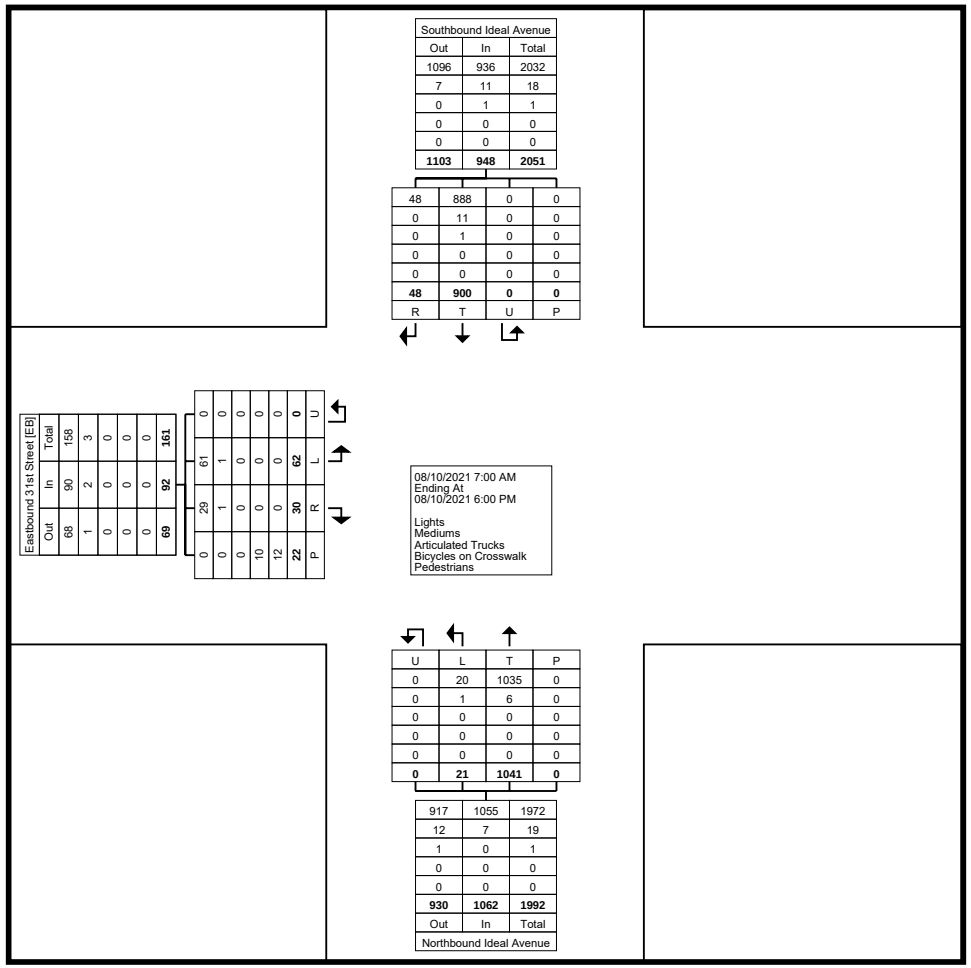
Turning Movement Data

Start Time	Eastbound 31st Street Eastbound					Northbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
7:00 AM	3	2	0	1	5	0	27	0	0	27	23	0	0	0	23	55
7:15 AM	3	2	0	1	5	0	31	0	0	31	19	0	0	0	19	55
7:30 AM	6	2	0	0	8	1	56	0	0	57	24	1	0	0	25	90
7:45 AM	3	0	0	0	3	0	64	0	0	64	41	0	0	0	41	108
Hourly Total	15	6	0	2	21	1	178	0	0	179	107	1	0	0	108	308
8:00 AM	4	0	0	0	4	0	36	0	0	36	38	2	0	0	40	80
8:15 AM	5	0	0	1	5	1	54	0	0	55	39	2	0	0	41	101
8:30 AM	6	1	0	1	7	1	45	0	0	46	26	6	0	0	32	85
8:45 AM	1	0	0	1	1	0	53	0	0	53	32	0	0	0	32	86
Hourly Total	16	1	0	3	17	2	188	0	0	190	135	10	0	0	145	352
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	3	0	0	6	2	67	0	0	69	85	4	0	0	89	164
4:15 PM	2	1	0	6	3	1	62	0	0	63	102	2	0	0	104	170
4:30 PM	3	4	0	2	7	0	82	0	0	82	98	5	0	0	103	192
4:45 PM	5	3	0	0	8	6	88	0	0	94	78	5	0	0	83	185
Hourly Total	13	11	0	8	24	9	299	0	0	308	363	16	0	0	379	711
5:00 PM	5	2	0	0	7	2	75	0	0	77	87	5	0	0	92	176
5:15 PM	8	5	0	7	13	2	80	0	0	82	85	7	0	0	92	187
5:30 PM	3	3	0	1	6	3	128	0	0	131	63	7	0	0	70	207
5:45 PM	2	2	0	1	4	2	93	0	0	95	60	2	0	0	62	161
Hourly Total	18	12	0	9	30	9	376	0	0	385	295	21	0	0	316	731
Grand Total	62	30	0	22	92	21	1041	0	0	1062	900	48	0	0	948	2102
Approach %	67.4	32.6	0.0	-	-	2.0	98.0	0.0	-	-	94.9	5.1	0.0	-	-	-
Total %	2.9	1.4	0.0	-	4.4	1.0	49.5	0.0	-	50.5	42.8	2.3	0.0	-	45.1	-
Lights	61	29	0	-	90	20	1035	0	-	1055	888	48	0	-	936	2081
% Lights	98.4	96.7	-	-	97.8	95.2	99.4	-	-	99.3	98.7	100.0	-	-	98.7	99.0
Mediums	1	1	0	-	2	1	6	0	-	7	11	0	0	-	11	20
% Mediums	1.6	3.3	-	-	2.2	4.8	0.6	-	-	0.7	1.2	0.0	-	-	1.2	1.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	10	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	45.5	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	12	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	54.5	-	-	-	-	-	-	-	-	-	-	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 31st Street
Site Code:
Start Date: 08/10/2021



Turning Movement Data Plot

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 31st Street
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Eastbound 31st Street Eastbound					Northbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:30 AM	6	2	0	0	8	1	56	0	0	57	24	1	0	0	25	90
7:45 AM	3	0	0	0	3	0	64	0	0	64	41	0	0	0	41	108
8:00 AM	4	0	0	0	4	0	36	0	0	36	38	2	0	0	40	80
8:15 AM	5	0	0	1	5	1	54	0	0	55	39	2	0	0	41	101
Total	18	2	0	1	20	2	210	0	0	212	142	5	0	0	147	379
Approach %	90.0	10.0	0.0	-	-	0.9	99.1	0.0	-	-	96.6	3.4	0.0	-	-	-
Total %	4.7	0.5	0.0	-	5.3	0.5	55.4	0.0	-	55.9	37.5	1.3	0.0	-	38.8	-
PHF	0.750	0.250	0.000	-	0.625	0.500	0.820	0.000	-	0.828	0.866	0.625	0.000	-	0.896	0.877
Lights	17	2	0	-	19	2	208	0	-	210	137	5	0	-	142	371
% Lights	94.4	100.0	-	-	95.0	100.0	99.0	-	-	99.1	96.5	100.0	-	-	96.6	97.9
Mediums	1	0	0	-	1	0	2	0	-	2	4	0	0	-	4	7
% Mediums	5.6	0.0	-	-	5.0	0.0	1.0	-	-	0.9	2.8	0.0	-	-	2.7	1.8
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.7	0.0	-	-	0.7	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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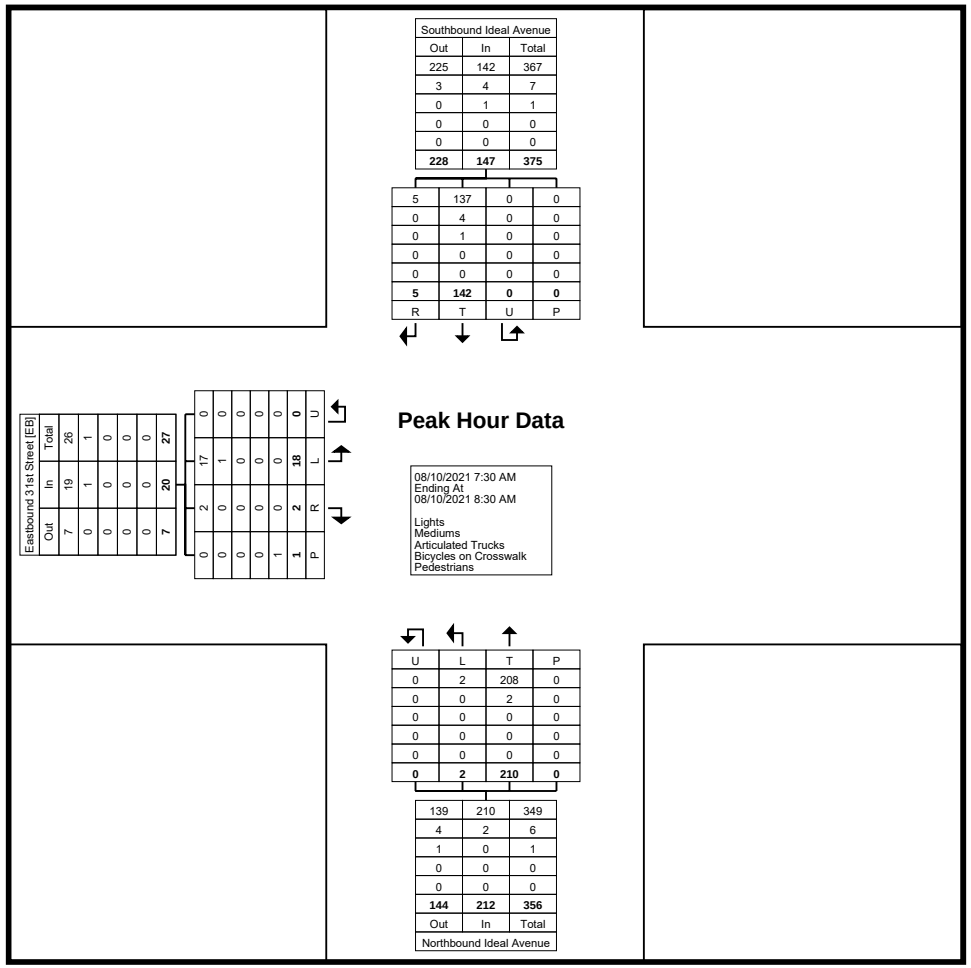

Turning Movement Peak Hour Data Plot (7:30 AM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & 31st Street
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Eastbound 31st Street Eastbound					Northbound Ideal Avenue Northbound					Southbound Ideal Avenue Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:45 PM	5	3	0	0	8	6	88	0	0	94	78	5	0	0	83	185
5:00 PM	5	2	0	0	7	2	75	0	0	77	87	5	0	0	92	176
5:15 PM	8	5	0	7	13	2	80	0	0	82	85	7	0	0	92	187
5:30 PM	3	3	0	1	6	3	128	0	0	131	63	7	0	0	70	207
Total	21	13	0	8	34	13	371	0	0	384	313	24	0	0	337	755
Approach %	61.8	38.2	0.0	-	-	3.4	96.6	0.0	-	-	92.9	7.1	0.0	-	-	-
Total %	2.8	1.7	0.0	-	4.5	1.7	49.1	0.0	-	50.9	41.5	3.2	0.0	-	44.6	-
PHF	0.656	0.650	0.000	-	0.654	0.542	0.725	0.000	-	0.733	0.899	0.857	0.000	-	0.916	0.912
Lights	21	13	0	-	34	13	371	0	-	384	312	24	0	-	336	754
% Lights	100.0	100.0	-	-	100.0	100.0	100.0	-	-	100.0	99.7	100.0	-	-	99.7	99.9
Mediums	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Mediums	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.3	0.0	-	-	0.3	0.1
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	50.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	50.0	-	-	-	-	-	-	-	-	-	-	-	-

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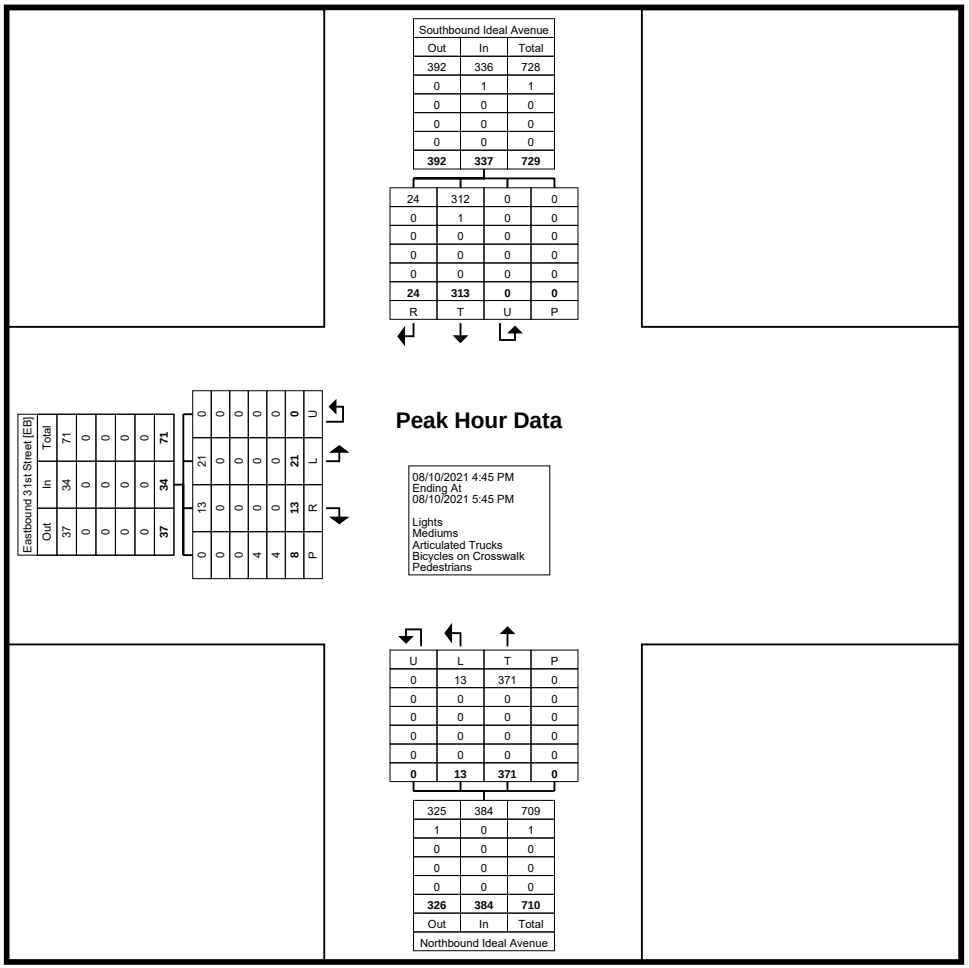

Turning Movement Peak Hour Data Plot (4:45 PM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021

Turning Movement Data

Start Time	Eastbound Stillwater Boulevard Eastbound						Westbound Stillwater Boulevard Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	7	17	2	0	1	26	2	11	9	0	0	22	0	18	3	0	0	21	15	3	7	0	0	25	94
7:15 AM	6	17	1	0	0	24	3	9	12	0	0	24	2	12	7	0	0	21	14	7	3	0	0	24	93
7:30 AM	12	22	0	0	0	34	3	16	20	0	0	39	2	19	2	0	0	23	8	7	4	0	0	19	115
7:45 AM	11	13	0	0	0	24	1	10	30	0	0	41	0	25	5	0	0	30	22	11	12	0	0	45	140
Hourly Total	36	69	3	0	1	108	9	46	71	0	0	126	4	74	17	0	0	95	59	28	26	0	0	113	442
8:00 AM	10	5	1	0	0	16	3	9	18	0	0	30	3	9	2	0	0	14	16	10	10	0	1	36	96
8:15 AM	19	13	2	0	0	34	4	14	22	0	0	40	4	16	3	0	0	23	19	16	5	0	0	40	137
8:30 AM	11	14	0	0	3	25	2	16	13	0	0	31	0	16	5	0	0	21	10	9	7	0	0	26	103
8:45 AM	10	17	0	0	2	27	0	14	25	1	0	40	2	23	4	0	0	29	12	16	4	0	0	32	128
Hourly Total	50	49	3	0	5	102	9	53	78	1	0	141	9	64	14	0	0	87	57	51	26	0	1	134	464
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	20	32	2	0	0	54	4	35	33	0	0	72	4	28	2	0	0	34	34	34	18	0	0	86	246
4:15 PM	10	25	3	0	7	38	7	34	35	0	0	76	2	19	9	0	0	30	48	29	31	0	0	108	252
4:30 PM	12	37	6	0	0	55	8	28	43	0	0	79	3	26	7	0	0	36	39	31	23	0	0	93	263
4:45 PM	18	27	7	0	2	52	8	26	46	0	0	80	3	29	4	0	0	36	33	38	19	0	0	90	258
Hourly Total	60	121	18	0	9	199	27	123	157	0	0	307	12	102	22	0	0	136	154	132	91	0	0	377	1019
5:00 PM	21	23	3	0	0	47	6	35	26	0	0	67	3	24	5	0	0	32	32	36	22	0	0	90	236
5:15 PM	7	21	5	0	5	33	8	29	40	0	0	77	2	42	5	0	0	49	46	23	15	0	0	84	243
5:30 PM	17	26	4	0	1	47	7	34	63	0	0	104	2	45	10	0	0	57	28	25	20	0	0	73	281
5:45 PM	11	25	3	0	0	39	8	26	60	0	0	94	3	25	3	0	0	31	29	20	11	0	0	60	224
Hourly Total	56	95	15	0	6	166	29	124	189	0	0	342	10	136	23	0	0	169	135	104	68	0	0	307	984
Grand Total	202	334	39	0	21	575	74	346	495	1	0	916	35	376	76	0	0	487	405	315	211	0	1	931	2909
Approach %	35.1	58.1	6.8	0.0	-	-	8.1	37.8	54.0	0.1	-	-	7.2	77.2	15.6	0.0	-	-	43.5	33.8	22.7	0.0	-	-	-
Total %	6.9	11.5	1.3	0.0	-	19.8	2.5	11.9	17.0	0.0	-	31.5	1.2	12.9	2.6	0.0	-	16.7	13.9	10.8	7.3	0.0	-	32.0	-
Lights	199	331	39	0	-	569	73	339	491	1	-	904	35	374	76	0	-	485	399	312	206	0	-	917	2875
% Lights	98.5	99.1	100.0	-	-	99.0	98.6	98.0	99.2	100.0	-	98.7	100.0	99.5	100.0	-	-	99.6	98.5	99.0	97.6	-	-	98.5	98.8
Mediums	3	3	0	0	-	6	1	7	4	0	-	12	0	2	0	0	-	2	5	3	5	0	-	13	33
% Mediums	1.5	0.9	0.0	-	-	1.0	1.4	2.0	0.8	0.0	-	1.3	0.0	0.5	0.0	-	-	0.4	1.2	1.0	2.4	-	-	1.4	1.1
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Articulated Trucks	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	0.2	0.0	0.0	-	-	0.1	0.0
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	28.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	15	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	71.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Kimley - Horn and Associates, Inc.
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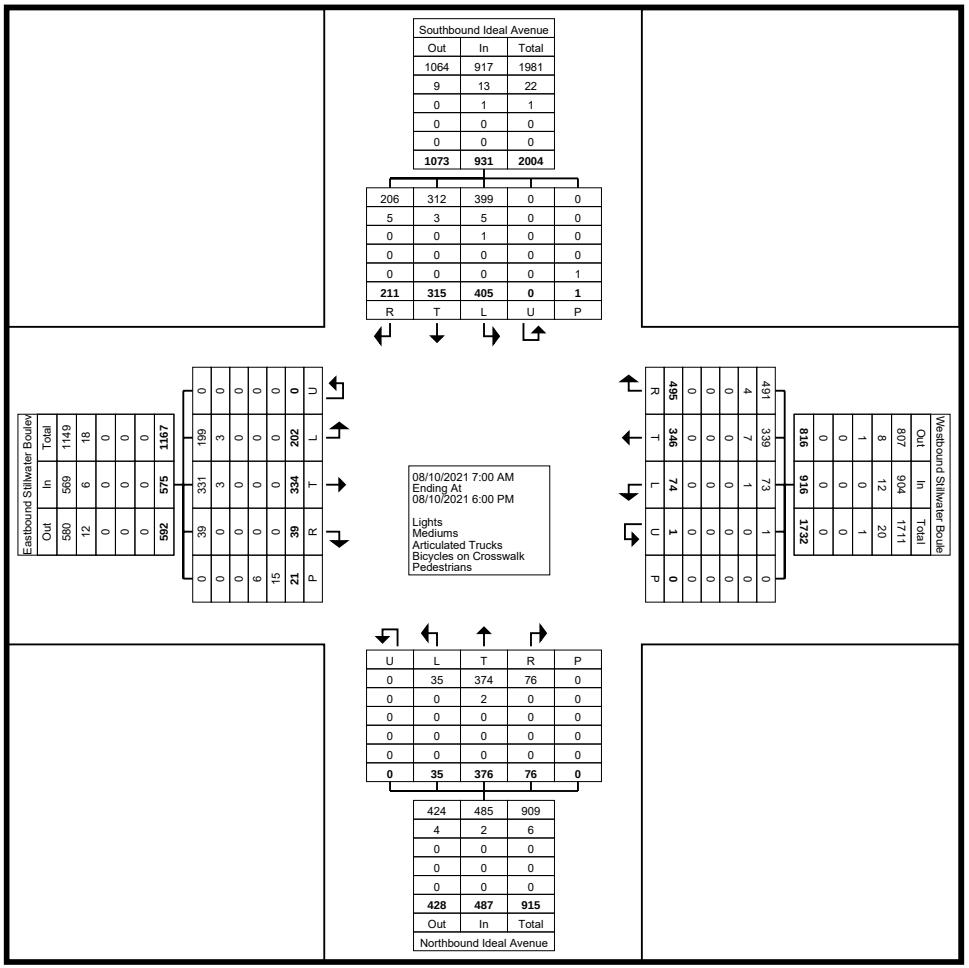
Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021



Turning Movement Data Plot

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4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Eastbound Stillwater Boulevard Eastbound						Westbound Stillwater Boulevard Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	12	22	0	0	0	34	3	16	20	0	0	39	2	19	2	0	0	23	8	7	4	0	0	19	115
7:45 AM	11	13	0	0	0	24	1	10	30	0	0	41	0	25	5	0	0	30	22	11	12	0	0	45	140
8:00 AM	10	5	1	0	0	16	3	9	18	0	0	30	3	9	2	0	0	14	16	10	10	0	1	36	96
8:15 AM	19	13	2	0	0	34	4	14	22	0	0	40	4	16	3	0	0	23	19	16	5	0	0	40	137
Total	52	53	3	0	0	108	11	49	90	0	0	150	9	69	12	0	0	90	65	44	31	0	1	140	488
Approach %	48.1	49.1	2.8	0.0	-	-	7.3	32.7	60.0	0.0	-	-	10.0	76.7	13.3	0.0	-	-	46.4	31.4	22.1	0.0	-	-	-
Total %	10.7	10.9	0.6	0.0	-	22.1	2.3	10.0	18.4	0.0	-	30.7	1.8	14.1	2.5	0.0	-	18.4	13.3	9.0	6.4	0.0	-	28.7	-
PHF	0.684	0.602	0.375	0.000	-	0.794	0.688	0.766	0.750	0.000	-	0.915	0.563	0.690	0.600	0.000	-	0.750	0.739	0.688	0.646	0.000	-	0.778	0.871
Lights	51	52	3	0	-	106	11	45	87	0	-	143	9	69	12	0	-	90	64	42	29	0	-	135	474
% Lights	98.1	98.1	100.0	-	-	98.1	100.0	91.8	96.7	-	-	95.3	100.0	100.0	100.0	-	-	100.0	98.5	95.5	93.5	-	-	96.4	97.1
Mediums	1	1	0	0	-	2	0	4	3	0	-	7	0	0	0	0	-	0	1	2	2	0	-	5	14
% Mediums	1.9	1.9	0.0	-	-	1.9	0.0	8.2	3.3	-	-	4.7	0.0	0.0	0.0	-	-	0.0	1.5	4.5	6.5	-	-	3.6	2.9
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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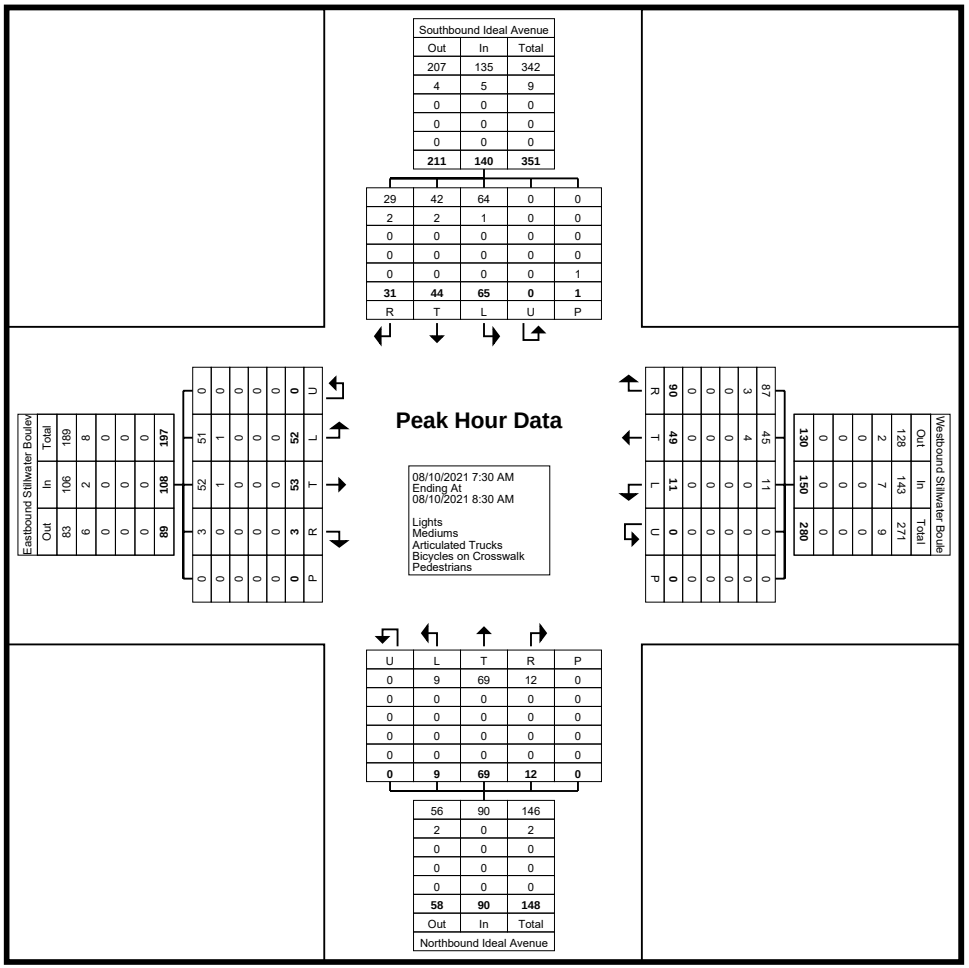
Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021



Turning Movement Peak Hour Data Plot (7:30 AM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021

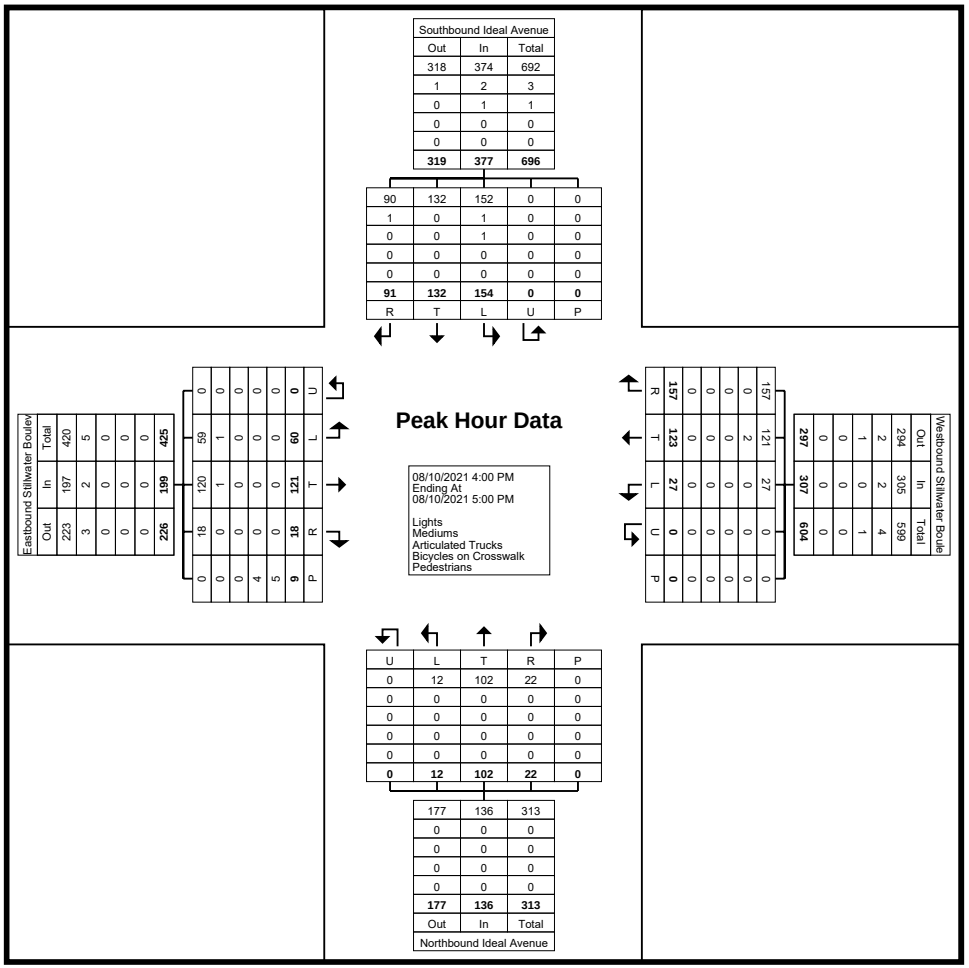
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Eastbound Stillwater Boulevard Eastbound						Westbound Stillwater Boulevard Westbound						Northbound Ideal Avenue Northbound						Southbound Ideal Avenue Southbound						
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:00 PM	20	32	2	0	0	54	4	35	33	0	0	72	4	28	2	0	0	34	34	34	18	0	0	86	246
4:15 PM	10	25	3	0	7	38	7	34	35	0	0	76	2	19	9	0	0	30	48	29	31	0	0	108	252
4:30 PM	12	37	6	0	0	55	8	28	43	0	0	79	3	26	7	0	0	36	39	31	23	0	0	93	263
4:45 PM	18	27	7	0	2	52	8	26	46	0	0	80	3	29	4	0	0	36	33	38	19	0	0	90	258
Total	60	121	18	0	9	199	27	123	157	0	0	307	12	102	22	0	0	136	154	132	91	0	0	377	1019
Approach %	30.2	60.8	9.0	0.0	-	-	8.8	40.1	51.1	0.0	-	-	8.8	75.0	16.2	0.0	-	-	40.8	35.0	24.1	0.0	-	-	-
Total %	5.9	11.9	1.8	0.0	-	19.5	2.6	12.1	15.4	0.0	-	30.1	1.2	10.0	2.2	0.0	-	13.3	15.1	13.0	8.9	0.0	-	37.0	-
PHF	0.750	0.818	0.643	0.000	-	0.905	0.844	0.879	0.853	0.000	-	0.959	0.750	0.879	0.611	0.000	-	0.944	0.802	0.868	0.734	0.000	-	0.873	0.969
Lights	59	120	18	0	-	197	27	121	157	0	-	305	12	102	22	0	-	136	152	132	90	0	-	374	1012
% Lights	98.3	99.2	100.0	-	-	99.0	100.0	98.4	100.0	-	-	99.3	100.0	100.0	100.0	-	-	100.0	98.7	100.0	98.9	-	-	99.2	99.3
Mediums	1	1	0	0	-	2	0	2	0	0	-	2	0	0	0	0	-	0	1	0	1	0	-	2	6
% Mediums	1.7	0.8	0.0	-	-	1.0	0.0	1.6	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.6	0.0	1.1	-	-	0.5	0.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	1	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.6	0.0	0.0	-	-	0.3	0.1
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	44.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	55.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Ideal Avenue & Stillwater Boulevard
Site Code:
Start Date: 08/10/2021



Turning Movement Peak Hour Data Plot (4:00 PM)

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Stillwater Boulevard Roundabout NBR
Site Code:
Start Date: 08/10/2021

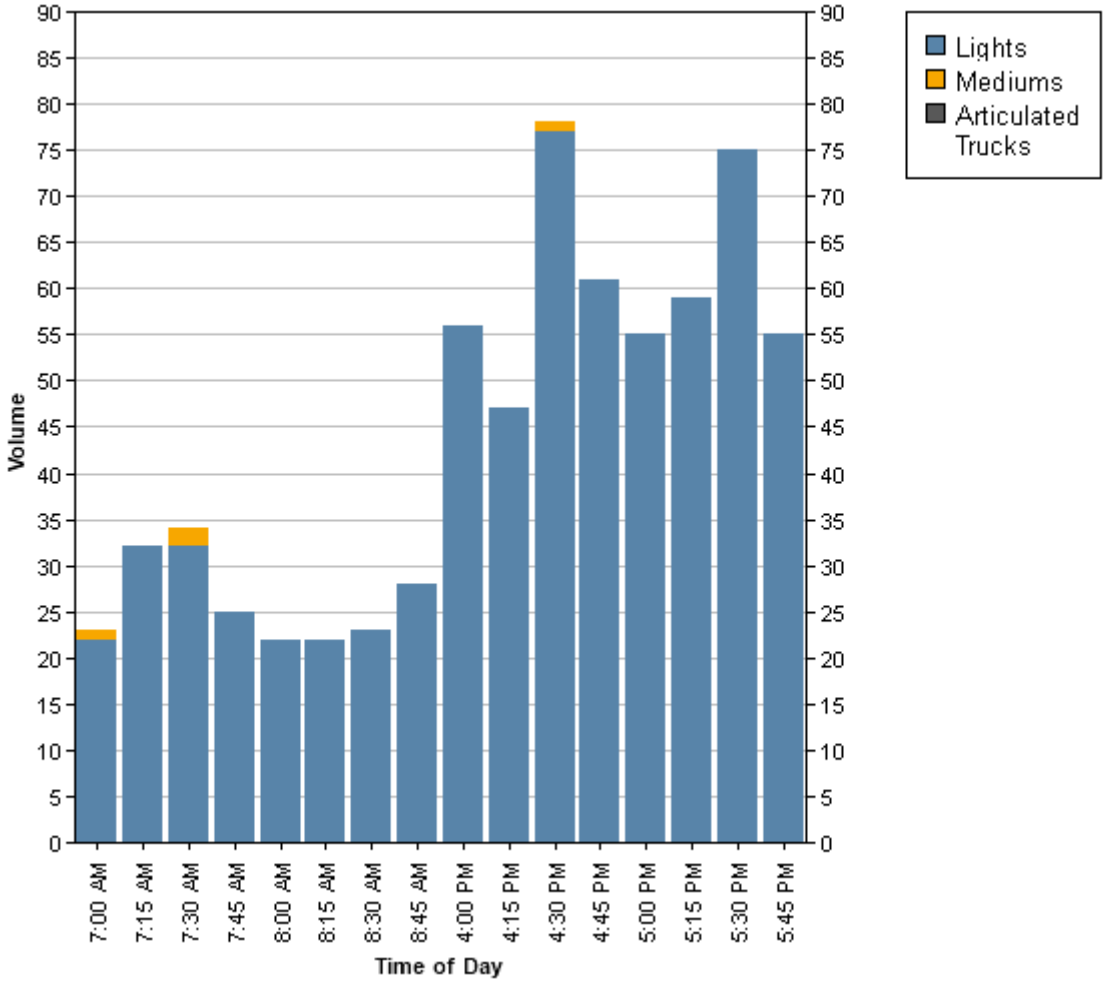
Direction (Northbound)

Start Time	Lights	Mediums	Articulated Trucks	Total
7:00 AM	22	1	0	23
7:15 AM	32	0	0	32
7:30 AM	32	2	0	34
7:45 AM	25	0	0	25
8:00 AM	22	0	0	22
8:15 AM	22	0	0	22
8:30 AM	23	0	0	23
8:45 AM	28	0	0	28
4:00 PM	56	0	0	56
4:15 PM	47	0	0	47
4:30 PM	77	1	0	78
4:45 PM	61	0	0	61
5:00 PM	55	0	0	55
5:15 PM	59	0	0	59
5:30 PM	75	0	0	75
5:45 PM	55	0	0	55
Total	691	4	0	695
Total %	99.4	0.6	0.0	100.0
AM Times	7:00 AM	7:00 AM	7:00 AM	7:00 AM
AM Peaks	111	3	0	114
PM Times	4:30 PM	4:00 PM	4:00 PM	4:30 PM
PM Peaks	252	1	0	253

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Stillwater Boulevard Roundabout NBR
Site Code:
Start Date: 08/10/2021



Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Jamaca Avenue Roundabout SBR
Site Code:
Start Date: 08/10/2021

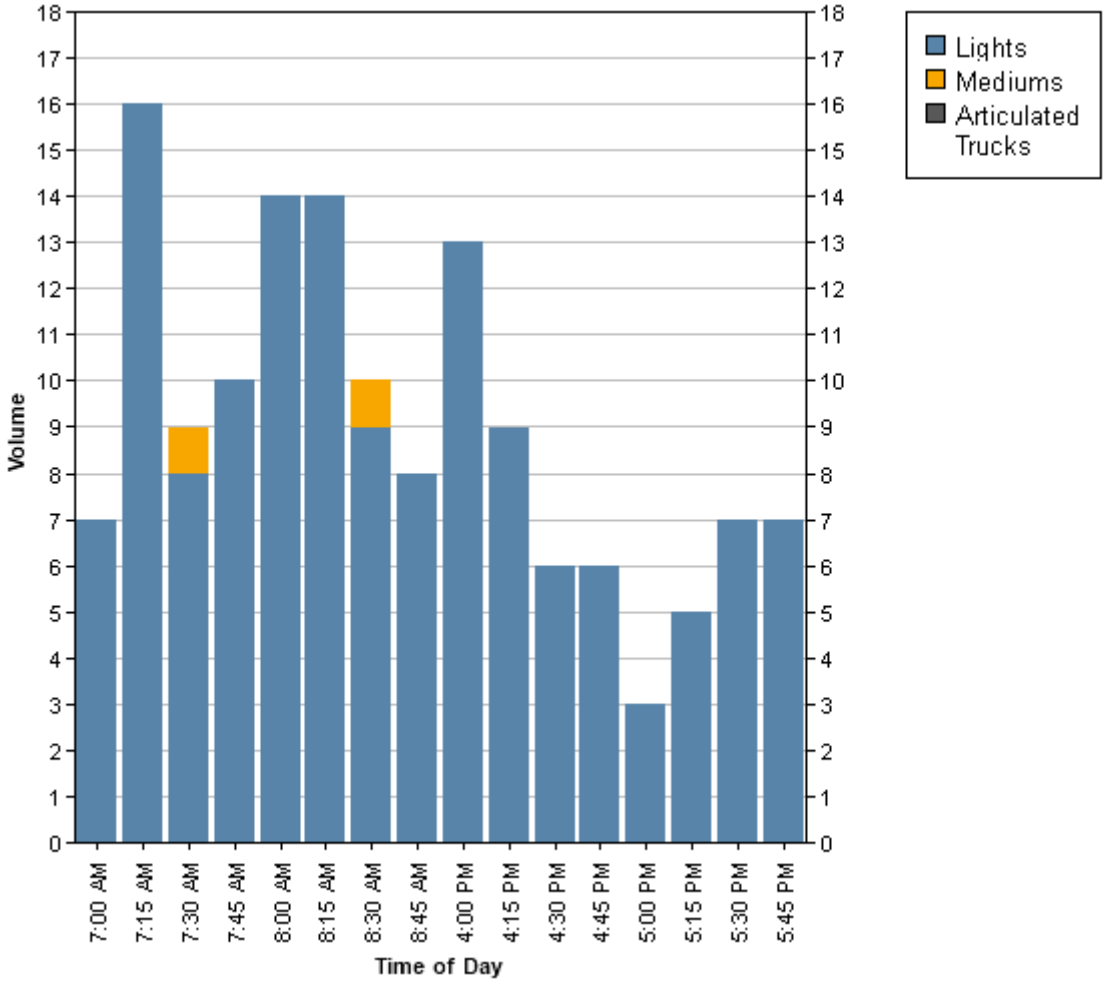
Direction (Southbound)

Start Time	Lights	Mediums	Articulated Trucks	Total
7:00 AM	7	0	0	7
7:15 AM	16	0	0	16
7:30 AM	8	1	0	9
7:45 AM	10	0	0	10
8:00 AM	14	0	0	14
8:15 AM	14	0	0	14
8:30 AM	9	1	0	10
8:45 AM	8	0	0	8
4:00 PM	13	0	0	13
4:15 PM	9	0	0	9
4:30 PM	6	0	0	6
4:45 PM	6	0	0	6
5:00 PM	3	0	0	3
5:15 PM	5	0	0	5
5:30 PM	7	0	0	7
5:45 PM	7	0	0	7
Total	142	2	0	144
Total %	98.6	1.4	0.0	100.0
AM Times	7:15 AM	7:00 AM	7:00 AM	7:15 AM
AM Peaks	48	1	0	49
PM Times	4:00 PM	4:00 PM	4:00 PM	4:00 PM
PM Peaks	34	0	0	34

Kimley - Horn and Associates, Inc.
4201 Winfield Road Suite 600

Warrenville, Illinois, United States 60555
(630) 487-5550 riley.mitts@kimley-horn.com

Count Name: Jamaca Avenue Roundabout SBR
Site Code:
Start Date: 08/10/2021



Appendix C:

Site Plan

Scenario 1, Scenario 2, and Scenario 3

Scenarios 1, 2, and 3 evaluate the same anticipated development of the AUAR study area lying south of 34th Street N, which is the area the project proposer plans to develop. Construction of the parcels south of 34th Street N is anticipated to begin in 2022 and built over two phases with construction complete by 2024. The AUAR study area lying north of 34th Street N will be developed later and there are no known development plans. To account for the unknown plans for the north area, different land use patterns with varying densities are evaluated in Scenarios 1, 2 and 3 and are based on the City's completed Master Plan process. Roadway infrastructure supporting Scenarios 1, 2, and 3 includes access from 34th Street N and Ideal Avenue N. The scenario plans identify three access points into the area south of 34th Street N and two access points into the northern portion of the study area. The AUAR study area will be connected to the public municipal water and regional sanitary sewer systems. Stormwater management will be provided locally onsite as part of any development.

Scenario 4

Scenario 4 is consistent with the 2040 Comprehensive Plan which permits the development of the parcels south of 34th Street N for Business Park uses and the parcels north of 34th Street N for rural residential uses, continued agriculture, and the public works facility.

Table 1: Development Scenarios

Land Use	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Business Park	~1.1 million square feet	~1.1 million square feet	~2.2 million square feet	~1.1 million square feet
Mixed-Use Business Park	400 residential units 653,400 square feet business/light industrial	210 residential units 457,380 square feet business/light industrial	--	--
Commercial	91,500 square feet	178,596 square feet	91,500 square feet	--
Rural Area Development (Residential)				10 residential units
Low Density Residential	--	56 residential units	56 residential units	--
Medium Density Residential	--	124 residential units	--	--
Existing Public Works Building	7.4 acres	7.4 acres	7.4 acres	7.4
Park	8 acres	8 acres	8 acres	0 acres
Ponding	15 acres	15 acres	15 acres	0 acres
Right-of-Way	6 acres	6 acres	6 acres	6 acres

Figure 3: Development Scenario 1

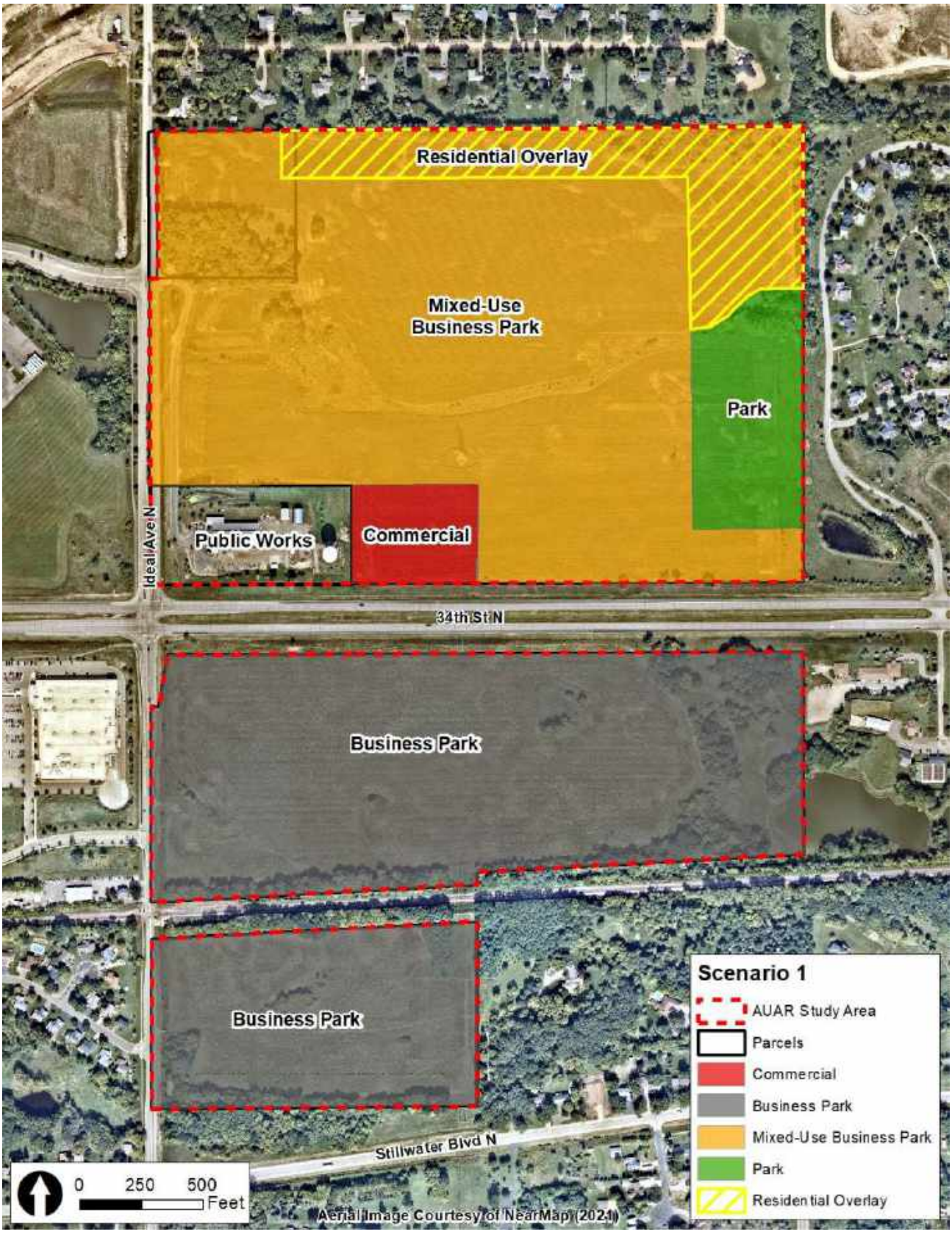


Figure 4: Development Scenario 2

Figure 5: Development Scenario 3

Figure 6: Development Scenario 4

Appendix D:

NorthPoint Development Trip Generation Study

NORTHPOINT DEVELOPMENT

TRAFFIC TRIP GENERATION

ANALYSIS

December 30, 2019

Prepared For:
NorthPoint Development
4825 NW 41st Street, Suite 500
Riverside, MO 64150

Prepared By:
Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747

December 30, 2019

Mr. Chris Chancellor, P.E.
Northpoint Development
4825 NW 41st Street, Suite 500
Riverside, MO 64150

RE: NorthPoint Trip Generation Traffic Study - Edgerton KS, Kansas City MO, Birmingham MO, Riverside MO and Hazelwood MO Northpoint Facilities

Dear Mr. Chancellor:

In response to your request, Priority Engineers, Inc. has completed a traffic impact analysis for the above referenced project. The purpose of the analysis is to determine the most appropriate traffic trip generation rates for NorthPoint developments based upon these five existing operational NorthPoint developments. The following report documents our analysis and recommendations.

We appreciate the opportunity to work with you on this project. Please contact us with any questions or if you require additional information.

Sincerely,

PRIORITY ENGINEERS, INC.

Jesse J Skinner, P.E., PTOE
Senior Traffic Engineer

Priority Engineers, Inc.
PO Box 563
Garden City, MO 64747
816.738.4400

Table of Contents

1) INTRODUCTION

The purpose of this study is to determine more specific trip generation data for the similar land uses within NorthPoint Development properties. As part of this study, five sites were evaluated. These sites were located in Edgerton KS, Kansas City MO, Birmingham MO, Riverside MO, and Hazelwood MO.

2) DATA

The data was collected on "average weekdays" in May, June, and July of 2019. For the purposes of this study, only data collected on Tuesdays through Thursdays was utilized. Data was not collected near national holidays. Data was not collected when there was a potential conflict with major local events.

Data was collected via traffic cameras and analyzed with additional software with the exception of one location where a tube counter was utilized. Individual entrances into buildings were collected for 24 hours in 15-minute time intervals. Traffic was classified as passenger vehicle and truck traffic. Passenger vehicles include motorcycles, cars, and some pick-up trucks (FHWA class 1, 2, and some class 3) whereas truck traffic was selected for vehicles most likely requiring a commercial drivers license (some FWHA class 3, all class 4 and above).

There were 28 buildings total that had data for each entrance collected. These buildings ranged in size between 50,000 sq. ft. and 927,112 sq. ft. NorthPoint Development was able to provide the number of employees for 26 of the buildings studied.

3) DATA ANALYSIS

Regression analysis was applied to the data using methodologies similar to those used in the ITE Trip Generation Manual, 10th Edition. The data analysis includes truck specific analysis not found in ITE's Trip Generation Manual. Users of this data are encouraged to apply the same guidance as found in the ITE Trip Generation Handbook, 3rd Edition in regards to determining if the fitted curve, the average rate, or additional local data needs to be collected before using a specific time period and independent variable's trip generation rate.

While several of the study locations (most notably Edgerton KS, and Hazelwood MO) had public transportation stops located within the study site, there was not a significant amount of pedestrian traffic observed. The majority of pedestrians appeared to be recreational in nature as opposed to commuting.

The most logical nearby street was selected for each study site and an AM and PM Peak Count was also performed to determine when the peak period of the adjacent street occurred. Table 1 shows the relationship between the adjacent street Peak Hours and the Peak Hour of the Generator for each building within the five study areas.

Table1: Peak Hour Comparison					
Location	Building Designation (NorthPoint)	AM Peak Period (Gen)	PM Peak Period (Gen)	AM Peak Period (Adj Street)	PM Peak Period (Adj Street)
Hazelwood	I	6:30-7:30	15:15-16:15	7:00-8:00	16:45-17:45
	II	5:15-6:15	14:15-15:15	7:00-8:00	16:45-17:45
	III	1:45-2:45	18:30-19:30	7:00-8:00	16:45-17:45
	IV	10:45-11:30	12:15-13:15	7:00-8:00	16:45-17:45
	V	7:45-8:45	13:15-14:15	7:00-8:00	16:45-17:45
	VI	7:30-8:30	16:45-17:45	7:00-8:00	16:45-17:45
	VII	10:45-11:45	14:45-15:45	7:00-8:00	16:45-17:45
Three Trails	TT1	12:00-1:00	16:30-17:30	07:15-08:15	17:00-180:00
	TT2	11:00-12:00	16:30-17:30	07:15-08:15	17:00-180:00
	TT3	06:15-07:15	14:00-15:00	07:15-08:15	17:00-180:00
NLP	NLPI	7:15-8:15	14:45-15:45	7:00-8:00	16:30-17:30
	NLPII	6:15-7:15	16:15-17:15	7:00-8:00	16:30-17:30
	NLPIII	5:30-6:30	13:30-14:30	7:00-8:00	16:30-17:30
LPKC	II	11:15-12:15	14:15-15:15	06:00-0:700	15:00-16:00
	IV	7:45-8:45	16:30-17:30	06:00-0:700	15:00-16:00
	V	11:00-12:00	14:00-15:00	06:00-0:700	15:00-16:00
	XI	05:00-06:00	14:30-15:30	06:00-0:700	15:00-16:00
	XII	06:00-07:00	17:45-18:45	06:00-0:700	15:00-16:00
	XIV	06:15-07:15	17:30-18:30	06:00-0:700	15:00-16:00
	XV	11:00-12:00	15:00-16:00	06:00-0:700	15:00-16:00
	XXXI	11:30-12:30	14:15-15:15	06:00-0:700	15:00-16:00
	XXXII	11:30-12:30	14:15-15:15	06:00-0:700	15:00-16:00
	XXXIII	04:00-05:00	15:00-16:00	06:00-0:700	15:00-16:00
Horizons	H1	7:30-8:30	16:45-17:45	7:15-8:15	16:45-17:45
	H2	6:15-7:15	16:00-17:00	7:15-8:15	16:45-17:45
	H4	5:45-6:45	16:15-17:15	7:15-8:15	16:45-17:45
	H5	6:15-7:15	15:00-16:00	7:15-8:15	16:45-17:45
	Gallagher	11:15-12:15	16:15-17:15	7:15-8:15	16:45-17:45

In general, the Kansas City Metropolitan Area's Peak Hours can be categorized as most often occurring between 06:30 and 09:30 and 15:30 and 18:00. Factors that commonly affect Peak Hour variability includes the amount of commuter traffic and the distance of the commute, the amount of retail destinations near the study area, and the presence of schools near the study area. While the individual land uses within the study sites are similar, the Peak Hour for each business varied greatly depending upon the specifics of each business such as staffing schedules and if the business had a large number of the trucks entering or exiting the building in a short period of time. The majority of the buildings had the Peak Hours of the generator occurring at times other than the Peak Hour of the adjacent street.

4) TRIP GENERATION RATES (SQ. FT. AS INDEPENDENT VARIABLE)

NorthPoint Development's study areas typically have buildings with loading docks located in the back of the building or along one or two of the longer sides of the building. Buildings with rear loading docks tended to be smaller in size (108,273 sq. ft to 243,230 sq. ft.). Buildings with docks located on one or more of the long sides of the building tended to have a larger range, and all but one of them are in excess of 325,000 sq. ft. in size and ranging in size up to 927,112 sq. ft.

Trip rates were analyzed for the following building types:

- rear loading docks (7 buildings)
- smaller cross dock (less than 600,000 sq. ft, 15 buildings)
- larger cross dock buildings (6 buildings)
- all cross dock buildings (21 buildings)
- overall aggregate of all 28 buildings

While less common than the cross-dock buildings and smaller in size, the rear loading dock buildings tended to have a significantly higher trip rate generation than buildings with cross docks. Table 2 below summarizes the Trip Generation Rates for rear loading cross dock facilities and compares them to similar ITE Land Uses. Land uses used for comparison are as follows:

- Land Use 130 = Industrial Park
- Land Use 140 = Manufacturing
- Land Use 150 = Warehousing
- Land Use 154 = High-Cube Transload and Short-Term Storage Warehouse

ITE Land Use descriptions are provided in Appendix I. Raw data and graphs associated with data analysis are also contained in Appendix II-VI.

Table 2: Trip Generation Rate - Rear Loading Dock Buildings			
	Weighted Average Rate (1000 Sq. Ft.)	Equation	R^2
Weekday			
Land Use 130	3.37	Ln(T) = 0.52 Ln(X) + 4.45	0.58
Land Use 140	3.93	T = 3.16(X) + 160.04	0.82
Land Use 150	1.74	T = 1.58(X) + 45.54	0.93
Land Use 154	1.4	Not Provided	Not Provided
Rear Loading Dock	6.2	$y = 0.0021x^{2.4517}$	= 0.5209
AM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.62	Not Provided	Not Provided
Land Use 150	0.17	T = 0.12(X) + 25.32	0.69
Land Use 154	0.08	Not Provided	Not Provided
Rear Loading Dock	0.55	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.67	Not Provided	Not Provided
Land Use 150	0.19	T = 0.12(X) + 27.82	0.65
Land Use 154	0.1	Not Provided	Not Provided
Rear Loading Dock	0.42	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	0.41	Not Provided	Not Provided
Land Use 140	.81	T = 0.61(X) + 34.25	.80
Land Use 150	.85	T = 0.11(X) + 30.07	.85
Land Use 154	.12	Not Provided	Not Provided
Rear Loading Dock	0.67	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	0.40	Not Provided	Not Provided
Land Use 140	.79	T = 0.62(X) + 29.00	.76
Land Use 150	.24	T = 0.15(X) + 22.52	.91
Land Use 154	.16	Not Provided	Not Provided
Rear Loading Dock	0.66	Not Provided	Not Provided

While large cross dock buildings are large in size, their associated trip generation was significantly smaller than the rear loading dock buildings or the majority of the comparative ITE land uses as displayed in Table 3 Below. Overall, large cross dock facilities generate similar Peak Hour trip generation rates to Land Use 154 with fewer total trips during a weekday. Raw data is contained in Appendix III.

Table 3: Trip Generation Rate - Large Cross Dock Buildings			
	Weighted Average Rate (1000 Sq. Ft.)	Equation	R^2
Weekday			
Land Use 130	3.37	Ln(T) = 0.52 Ln(X) +4.45	0.58
Land Use 140	3.93	T = 3.16(X) + 160.04	0.82
Land Use 150	1.74	T = 1.58(X) + 45.54	0.93
Land Use 154	1.4	Not Provided	Not Provided
Large Cross Dock	.961	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.62	Not Provided	Not Provided
Land Use 150	0.17	T = 0.12(X) + 25.32	0.69
Land Use 154	0.08	Not Provided	Not Provided
Large Cross Dock	.08	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.67	Not Provided	Not Provided
Land Use 150	0.19	T = 0.12(X) + 27.82	0.65
Land Use 154	0.1	Not Provided	Not Provided
Large Cross Dock	.11	T = 0.7336x - 474.02	.50
AM Peak Hour Generator			
Land Use 130	0.41	Not Provided	Not Provided
Land Use 140	.81	T = 0.61(X) + 34.25	.80
Land Use 150	.85	T = 0.11(X) + 30.07	.85
Land Use 154	.12	Not Provided	Not Provided
Large Cross Dock	.08	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	0.40	Not Provided	Not Provided
Land Use 140	.79	T = 0.62(X) + 29.00	.76
Land Use 150	.24	T = 0.15(X) + 22.52	.91
Land Use 154	.16	Not Provided	Not Provided
Large Cross Dock	0.17	Not Provided	Not Provided

Smaller cross dock facilities were the most commonly encountered building type within the five study sites. Like larger cross dock facilities, facilities under 600,000 sq. ft. tend to have trip generation rates that are lower than likely comparable ITE land uses. While the smaller cross dock facilities had a slightly higher weekday trip generation rate than large cross dock facilities, they tend to have a lesser trip generation rate in the Peak Hours. Trip Rates are shown in Table 4 and raw data can be found in Appendix IV.

Table 4: Trip Generation Rate - Smaller Cross Dock Buildings			
	Weighted Average Rate (1000 Sq. Ft.)	Equation	R^2
Weekday			
Land Use 130	3.37	Ln(T) = 0.52 Ln(X) +4.45	0.58
Land Use 140	3.93	T = 3.16(X) + 160.04	0.82
Land Use 150	1.74	T = 1.58(X) + 45.54	0.93
Land Use 154	1.4	Not Provided	Not Provided
Smaller Cross Dock	1.32	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.62	Not Provided	Not Provided
Land Use 150	0.17	T = 0.12(X) + 25.32	0.69
Land Use 154	0.08	Not Provided	Not Provided
Smaller Cross Dock	.06	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.67	Not Provided	Not Provided
Land Use 150	0.19	T = 0.12(X) + 27.82	0.65
Land Use 154	0.1	Not Provided	Not Provided
Smaller Cross Dock	.06	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	0.41	Not Provided	Not Provided
Land Use 140	.81	T = 0.61(X) + 34.25	.80
Land Use 150	.85	T = 0.11(X) + 30.07	.85
Land Use 154	.12	Not Provided	Not Provided
Smaller Cross Dock	.146	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	0.40	Not Provided	Not Provided
Land Use 140	.79	T = 0.62(X) + 29.00	.76
Land Use 150	.24	T = 0.15(X) + 22.52	.91
Land Use 154	.16	Not Provided	Not Provided
Smaller Cross Dock	.15	Not Provided	Not Provided

When the cross dock facilities are aggregated into a single land use, the trip generation rates are most similar to ITE Land Use 154. The associated rates are shown below in Table 5 with the associated raw data being found in Appendix V.

Table 5: Trip Generation Rate - All Cross Dock Buildings			
	Weighted Average Rate (1000 Sq. Ft.)	Equation	R^2
Weekday			
Land Use 130	3.37	Ln(T) = 0.52 Ln(X) + 4.45	0.58
Land Use 140	3.93	T = 3.16(X) + 160.04	0.82
Land Use 150	1.74	T = 1.58(X) + 45.54	0.93
Land Use 154	1.4	Not Provided	Not Provided
All Cross Dock	1.16	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.62	Not Provided	Not Provided
Land Use 150	0.17	T = 0.12(X) + 25.32	0.69
Land Use 154	0.08	Not Provided	Not Provided
All Cross Dock	.07	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.67	Not Provided	Not Provided
Land Use 150	0.19	T = 0.12(X) + 27.82	0.65
Land Use 154	0.1	Not Provided	Not Provided
All Cross Dock	.09	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	0.41	Not Provided	Not Provided
Land Use 140	.81	T = 0.61(X) + 34.25	.80
Land Use 150	.85	T = 0.11(X) + 30.07	.85
Land Use 154	.12	Not Provided	Not Provided
All Cross Dock	.13	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	0.40	Not Provided	Not Provided
Land Use 140	.79	T = 0.62(X) + 29.00	.76
Land Use 150	.24	T = 0.15(X) + 22.52	.91
Land Use 154	.16	Not Provided	Not Provided
All Cross Dock	.13	Not Provided	Not Provided

When both rear loading dock buildings and cross dock buildings are combined the trip generation rates are as shown in Table 6 with the raw data associated with these numbers being found in Appendix VI.

Table 6: Trip Generation Rate - All building types			
	Weighted Average Rate (1000 Sq. Ft.)	Equation	R^2
Weekday			
Land Use 130	3.37	Ln(T) = 0.52 Ln(X) + 4.45	0.58
Land Use 140	3.93	T = 3.16(X) + 160.04	0.82
Land Use 150	1.74	T = 1.58(X) + 45.54	0.93
Land Use 154	1.4	Not Provided	Not Provided
All Buildings	1.75	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.62	Not Provided	Not Provided
Land Use 150	0.17	T = 0.12(X) + 25.32	0.69
Land Use 154	0.08	Not Provided	Not Provided
All Buildings	.12	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.4	Not Provided	Not Provided
Land Use 140	0.67	Not Provided	Not Provided
Land Use 150	0.19	T = 0.12(X) + 27.82	0.65
Land Use 154	0.1	Not Provided	Not Provided
All Buildings	.20	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	0.41	Not Provided	Not Provided
Land Use 140	.81	T = 0.61(X) + 34.25	.80
Land Use 150	.85	T = 0.11(X) + 30.07	.85
Land Use 154	.12	Not Provided	Not Provided
All Buildings	.19	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	0.40	Not Provided	Not Provided
Land Use 140	.79	T = 0.62(X) + 29.00	.76
Land Use 150	.24	T = 0.15(X) + 22.52	.91
Land Use 154	.16	Not Provided	Not Provided
Land Use 130	0.40	Not Provided	Not Provided
All Buildings	.21	Not Provided	Not Provided

5) TRIP GENERATION RATES (EMPLOYEES AS INDEPENDENT VARIABLE)

Similar analysis to the what was performed in section 4 of this report was performed for the previously discussed building types with the number of employees as the independent variable. The trip generation rates for rear loading dock buildings is shown in Table 7 below and the raw data is contained in Appendix II.

Table 7: Trip Generation Rate - Rear Loading Dock Buildings			
	Employees	Equation	R^2
Weekday			
Land Use 130	2.91	Ln(T) = 0.68 Ln(X) + 3.34	0.81
Land Use 140	2.47	Ln(T) = 0.89 Ln(X) + 1.69	.95
Land Use 150	5.05	Ln(T) = 0.82 Ln(X) + 2.33	.88
Land Use 154	Not Provided	Not Provided	Not Provided
Rear Loading Dock	17.1	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.44	Ln(T) = 0.82 Ln(X) + 0.39	.87
Land Use 140	.37	T = 0.26(X) + 32.97	.79
Land Use 150	.61	T = 0.52(X) + 4.93	.91
Land Use 154	Not Provided	Not Provided	Not Provided
Rear Loading Dock	.77	T = 1.6882x + 0.8087	.54
PM Peak Hour Adj. St.			
Land Use 130	0.42	Ln(T) = 0.74 Ln(X) + 0.93	.90
Land Use 140	.33	T = 0.19(X) + 41.22	.88
Land Use 150	.66	T = 0.52(X) + 4.93	.74
Land Use 154	Not Provided	Not Provided	Not Provided
Rear Loading Dock	1.36	T = 1.3944x	.43
AM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.83 Ln(X) + 0.36	0.90
Land Use 140	.43	= 0.33(X) + 39.35	.94
Land Use 150	.68	Ln(T) = 0.67 Ln(X) + 0.99	.87
Land Use 154	Not Provided	Not Provided	Not Provided
Rear Loading Dock	2.27	T = 1.4671x + 27.806	.41
PM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.75 Ln(X) + 0.90	.89
Land Use 140	.45	T = 0.38(X) + 24.71	.94
Land Use 150	.68	Ln(T) = 0.79 Ln(X) + 0.49	.80
Land Use 154	Not Provided	Not Provided	Not Provided
Rear Loading Dock	.31	Not Provided	Not Provided

The results of the analysis for larger cross dock buildings trip generation based upon employees is shown in Table 8 below with the raw data being contained in Appendix III.

Table 8: Trip Generation Rate - Large Cross Dock Buildings			
	Employees	Equation	R^2
Weekday			
Land Use 130	2.91	Ln(T) = 0.68 Ln(X) + 3.34	0.81
Land Use 140	2.47	Ln(T) = 0.89 Ln(X) + 1.69	.95
Land Use 150	5.05	Ln(T) = 0.82 Ln(X) + 2.33	.88
Land Use 154	Not Provided	Not Provided	Not Provided
Large Cross Dock	2.69	T = 1.7893x + 246.6	.94
AM Peak Hour Adj. St.			
Land Use 130	0.44	Ln(T) = 0.82 Ln(X) + 0.39	.87
Land Use 140	.37	T = 0.26(X) + 32.97	.79
Land Use 150	.61	T = 0.52(X) + 4.93	.91
Land Use 154	Not Provided	Not Provided	Not Provided
Large Cross Dock	.23	T = 0.2594x - 9.4162	.78
PM Peak Hour Adj. St.			
Land Use 130	0.42	Ln(T) = 0.74 Ln(X) + 0.93	.90
Land Use 140	.33	T = 0.19(X) + 41.22	.88
Land Use 150	.66	T = 0.52(X) + 4.93	.74
Land Use 154	Not Provided	Not Provided	Not Provided
Large Cross Dock	.32	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.83 Ln(X) + 0.36	0.90
Land Use 140	.43	= 0.33(X) + 39.35	.94
Land Use 150	.68	Ln(T) = 0.67 Ln(X) + 0.99	.87
Land Use 154	Not Provided	Not Provided	Not Provided
Large Cross Dock	.35	T = 0.2865x + 16.347	.93
PM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.75 Ln(X) + 0.90	.89
Land Use 140	.45	T = 0.38(X) + 24.71	.94
Land Use 150	.68	Ln(T) = 0.79 Ln(X) + 0.49	.80
Land Use 154	Not Provided	Not Provided	Not Provided
Large Cross Dock	.31	T = 57.164ln(x) - 159.03	.61

The results of the analysis for smaller cross dock buildings trip generation based upon employees is shown in Table 9 below with the raw data being contained in Appendix IV.

Table 9: Trip Generation Rate - Smaller Cross Dock Buildings			
	Employees	Equation	R^2
Weekday			
Land Use 130	2.91	Ln(T) = 0.68 Ln(X) + 3.34	00.81
Land Use 140	2.47	Ln(T) = 0.89 Ln(X) + 1.69	.95
Land Use 150	5.05	Ln(T) = 0.82 Ln(X) + 2.33	.88
Land Use 154	Not Provided	Not Provided	Not Provided
Smaller Cross Dock	6.63	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.44	Ln(T) = 0.82 Ln(X) + 0.39	.87
Land Use 140	.37	T = 0.26(X) + 32.97	.79
Land Use 150	.61	T = 0.52(X) + 4.93	.91
Land Use 154	Not Provided	Not Provided	Not Provided
Smaller Cross Dock	.37	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.42	Ln(T) = 0.74 Ln(X) + 0.93	.90
Land Use 140	.33	T = 0.19(X) + 41.22	.88
Land Use 150	.66	T = 0.52(X) + 4.93	.74
Land Use 154	Not Provided	Not Provided	Not Provided
Smaller Cross Dock	.35	Not Provided	Not Provided
AM Peak hour Generator			
Land Use 130	.42	Ln(T) = 0.83 Ln(X) + 0.36	0.90
Land Use 140	.43	= 0.33(X) + 39.35	.94
Land Use 150	.68	Ln(T) = 0.67 Ln(X) + 0.99	.87
Land Use 154	Not Provided	Not Provided	Not Provided
Smaller Cross Dock	.77	Not Provided	Not Provided
PM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.75 Ln(X) + 0.90	.89
Land Use 140	.45	T = 0.38(X) + 24.71	.94
Land Use 150	.68	Ln(T) = 0.79 Ln(X) + 0.49	.80
Land Use 154	Not Provided	Not Provided	Not Provided
Smaller Cross Dock	.76	Not Provided	Not Provided

The results of the analysis for combined cross dock buildings trip generation based upon employees is shown in Table 10 below with the raw data being contained in Appendix V.

Table 10: Trip Generation Rate - All Cross Dock Buildings			
	Employees	Equation	R^2
Weekday			
Land Use 130	2.91	Ln(T) = 0.68 Ln(X) + 3.34	0.81
Land Use 140	2.47	Ln(T) = 0.89 Ln(X) + 1.69	.95
Land Use 150	5.05	Ln(T) = 0.82 Ln(X) + 2.33	.88
Land Use 154	Not Provided	Not Provided	Not Provided
All Cross Dock	4.14	T= 1.6896x + 317.92	.46
AM Peak Hour Adj. St.			
Land Use 130	0.44	Ln(T) = 0.82 Ln(X) + 0.39	.87
Land Use 140	.37	T = 0.26(X) + 32.97	.79
Land Use 150	.61	T = 0.52(X) + 4.93	.91
Land Use 154	Not Provided	Not Provided	Not Provided
All Cross Dock	.28	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.42	Ln(T) = 0.74 Ln(X) + 0.93	.90
Land Use 140	.33	T = 0.19(X) + 41.22	.88
Land Use 150	.66	T = 0.52(X) + 4.93	.74
Land Use 154	Not Provided	Not Provided	Not Provided
All Cross Dock	.33	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.83 Ln(X) + 0.36	0.90
Land Use 140	.43	= 0.33(X) + 39.35	.94
Land Use 150	.68	Ln(T) = 0.67 Ln(X) + 0.99	.87
Land Use 154	Not Provided	Not Provided	Not Provided
All Cross Dock	.50	T= 0.2188x + 44.829	.45
PM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.75 Ln(X) + 0.90	.89
Land Use 140	.45	T = 0.38(X) + 24.71	.94
Land Use 150	.68	Ln(T) = 0.79 Ln(X) + 0.49	.80
Land Use 154	Not Provided	Not Provided	Not Provided
All Cross Dock	.59	y = 0.4436x	.42

The results of the analysis for the aggregate of all buildings combined trip generation, based upon employees, is shown in Table 11 below with the raw data being contained in Appendix VI.

Table 11: Trip Generation Rate - All Buildings			
	Employees	Equation	R^2
Weekday			
Land Use 130	2.91	Ln(T) = 0.68 Ln(X) + 3.34	0.81
Land Use 140	2.47	Ln(T) = 0.89 Ln(X) + 1.69	.95
Land Use 150	5.05	Ln(T) = 0.82 Ln(X) + 2.33	.88
Land Use 154	Not Provided	Not Provided	Not Provided
All Buildings	5.1	Not Provided	Not Provided
AM Peak Hour Adj. St.			
Land Use 130	0.44	Ln(T) = 0.82 Ln(X) + 0.39	.87
Land Use 140	.37	T = 0.26(X) + 32.97	.79
Land Use 150	.61	T = 0.52(X) + 4.93	.91
Land Use 154	Not Provided	Not Provided	Not Provided
All Buildings	.38	Not Provided	Not Provided
PM Peak Hour Adj. St.			
Land Use 130	0.42	Ln(T) = 0.74 Ln(X) + 0.93	.90
Land Use 140	.33	T = 0.19(X) + 41.22	.88
Land Use 150	.66	T = 0.52(X) + 4.93	.74
Land Use 154	Not Provided	Not Provided	Not Provided
All Buildings	.41	Not Provided	Not Provided
AM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.83 Ln(X) + 0.36	0.90
Land Use 140	.43	= 0.33(X) + 39.35	.94
Land Use 150	.68	Ln(T) = 0.67 Ln(X) + 0.99	.87
Land Use 154	Not Provided	Not Provided	Not Provided
All Buildings	.63	T = 0.2188x + 44.829	.45
PM Peak Hour Generator			
Land Use 130	.42	Ln(T) = 0.75 Ln(X) + 0.90	.89
Land Use 140	.45	T = 0.38(X) + 24.71	.94
Land Use 150	.68	Ln(T) = 0.79 Ln(X) + 0.49	.80
Land Use 154	Not Provided	Not Provided	Not Provided
All Buildings	.67	Not Provided	Not Provided

6) TRUCK TRAFFIC

The percent of truck traffic for NorthPoint Development's study sites is summarized in Table 12 below.

Table 12: Percent Truck Traffic

Building Type	Weekday	AM PEAK Generator	PM PEAK Generator	AM PEAK Adj. St.	AM PEAK Adj. St.
Rear Loading Dock	15%	16%	9%	17%	10%
Large Cross Dock	19%	9%	7%	7%	9%
Smaller Cross Dock	24%	20%	13%	22%	21%
All Cross Dock	22%	16%	10%	15%	14%
Overall Aggregate	19%	16%	10%	16%	12%

7) CONCLUSIONS

As previously discussed, rear loading dock buildings had trip generation rates higher than the comparative ITE Land Uses in the analysis. The sample size for this type of building was relatively small, seven sites at two locations. Overall there were only eight of the twenty-eight buildings in the complete study that had a weekday trip generation greater than nine hundred vehicles. Three of these eight buildings were rear loading facilities. It is recommended that additional sites be evaluated to determine if the typical user of a rear loading facility has a significantly higher rate than cross dock facilities. Until such additional analysis is performed, using ITE Land USE 140 for Peak Hour trip generation rates and the rear loading weekday trip rate should provide a conservative estimate of trip generation when square footage GFA is used as the independent variable. Until additional rear loading dock sites can be evaluated, no additional recommendations are being made for using employees as the independent variable beyond providing the observed trip generation rates for the limited sample size.

The analysis of trip generation rates for all sizes of cross dock facilities correlate very well with ITE Land USE 154 when evaluating square footage GFA as the independent variable. Given the robust data set (five study locations in two states with twenty-one individual sites) traffic engineers should have confidence in using either ITE Land Use 154 or the NorthPoint specific trip generation rates to give an accurate estimate of potential trips generated.

ITE has not yet disseminated trip generation data on an employee basis for Land Use 154 yet. If the number of employees is to be used as the independent variable, the evaluated land use with the closest correlation is Land Use 140. Using a Northpoint specific trip generation based upon the combined cross dock trip generation rates (Table 10) should provide a reasonable estimate of the trips generated.

Appendix E:

Existing Year (2021) SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.1	1.2	0.1	0.0	0.2	0.1	0.0	0.0	0.6	0.0	0.0
Total Del/Veh (s)	19.8	8.4	2.2	20.3	9.2	2.6	11.0	6.7	2.1	12.9	15.8	6.8

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	9.7

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.0	0.0	0.0	0.0	0.1	0.3
Total Del/Veh (s)	6.4	2.6	2.0	0.2	4.1	3.7	2.2

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.4	3.3	3.0	1.6	0.3	0.3	1.3

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	3.7	0.5	0.4	3.5	0.2	0.2	3.4	0.0	0.0	0.0
Total Del/Veh (s)	4.7	9.6	2.2	4.4	9.4	3.0	4.5	8.6	2.0	4.8	8.1	1.9

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	5.8

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.3	0.4	0.2	3.3	0.2	0.2	4.1
Total Del/Veh (s)	2.7	5.5	2.7	4.5	9.3	4.6	2.2	4.8	1.7	2.3	5.4	1.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	5.5

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.0	0.1	0.3	0.0	0.0	0.2	0.2	1.3
Total Del/Veh (s)	5.1	1.8	5.5	2.0	1.6	1.0	0.5	0.1	1.3

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	14.2

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	16	26	53	48	34	47	82	89	25	118	67	69
Average Queue (ft)	2	7	17	9	1	15	29	37	4	55	16	19
95th Queue (ft)	11	20	41	31	18	38	62	74	20	100	48	51
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	84	54
Average Queue (ft)	26	16
95th Queue (ft)	59	40
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	24	48	38	4
Average Queue (ft)	7	14	12	0
95th Queue (ft)	24	34	36	5
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	52	17
Average Queue (ft)	15	1
95th Queue (ft)	40	7
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	52	22	59	52	59	24	62	60
Average Queue (ft)	28	4	27	28	27	7	32	21
95th Queue (ft)	43	17	47	46	48	24	55	45
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	55	38	26	33	26
Average Queue (ft)	14	7	2	3	7
95th Queue (ft)	41	25	14	20	25
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	WB	NB
Directions Served	LT	LTR	L
Maximum Queue (ft)	33	31	12
Average Queue (ft)	9	6	1
95th Queue (ft)	31	25	6
Link Distance (ft)	682	328	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			265
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.2	0.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	45.0	13.1	3.8	45.6	11.0	1.8	31.5	31.8	6.2	26.3	38.3	8.8

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.8

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.8	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	11.1	4.6	3.8	0.3	6.0	5.1	4.2

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.5	3.8	4.6	1.8	0.8	0.6	1.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.3	3.8	0.5	0.5	3.3	0.2	0.3	3.6	0.0	0.0	0.0
Total Del/Veh (s)	8.5	13.0	3.5	8.0	13.1	5.0	7.0	11.2	3.9	10.6	13.5	3.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	9.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.3	0.5	0.7	3.1	0.2	0.1	4.0
Total Del/Veh (s)	8.5	12.4	8.7	6.5	11.1	5.7	3.7	7.7	3.3	3.6	6.0	1.4

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	8.5

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.9	0.1	0.0	0.0	0.0	0.2	0.2	1.6
Total Del/Veh (s)	4.9	2.1	5.2	2.5	1.5	1.9	0.6	0.1	1.6

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	22.8

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	35	48	104	110	64	78	94	98	25	195	112	76
Average Queue (ft)	6	8	43	43	10	25	38	41	3	101	30	18
95th Queue (ft)	22	29	86	89	44	61	80	77	17	161	73	51
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	146	60
Average Queue (ft)	73	20
95th Queue (ft)	131	47
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	56	72	61	13
Average Queue (ft)	17	30	26	0
95th Queue (ft)	42	57	51	6
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	38	30
Average Queue (ft)	15	3
95th Queue (ft)	38	19
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	82	26	89	68	74	48	157	72
Average Queue (ft)	43	11	42	36	37	16	65	28
95th Queue (ft)	70	29	70	58	62	39	117	52
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	163	113	32	49	46
Average Queue (ft)	58	25	9	19	12
95th Queue (ft)	131	69	29	54	35
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	WB	NB
Directions Served	LT	LTR	L
Maximum Queue (ft)	28	35	23
Average Queue (ft)	10	10	2
95th Queue (ft)	32	34	13
Link Distance (ft)	682	328	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			265
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Appendix F:

Opening Year (2025) No-Build SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.1	1.2	0.0	0.0	0.1	0.1	0.0	0.0	0.5	0.0	0.0
Total Del/Veh (s)	20.1	10.7	2.4	24.9	11.9	1.8	11.0	8.9	3.1	14.0	17.1	7.8

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	11.3

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.1	0.0	0.0	0.0	0.1	0.3
Total Del/Veh (s)	7.4	2.6	2.1	0.2	4.2	4.0	2.3

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.3	3.6	2.9	1.6	0.4	0.3	1.3

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	3.8	0.5	0.4	3.4	0.1	0.2	3.6	0.0	0.0	0.0
Total Del/Veh (s)	5.1	9.7	1.6	4.5	10.3	3.3	4.0	8.6	2.4	5.2	8.5	1.8

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.1

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.3	0.4	0.3	3.2	0.1	0.2	4.1
Total Del/Veh (s)	2.9	5.4	2.1	4.7	9.3	4.2	1.8	4.9	1.8	1.8	5.4	1.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	5.5

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.4	3.9	0.1	0.3	0.0	0.2	0.2	3.7	1.5
Total Del/Veh (s)	5.3	2.0	5.8	1.9	1.8	1.3	0.4	0.1	1.4

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	15.7

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	38	34	63	63	35	52	82	92	30	97	68	71
Average Queue (ft)	7	8	21	15	2	17	35	41	6	52	22	21
95th Queue (ft)	24	24	49	44	17	41	68	80	24	87	57	54
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	80	76
Average Queue (ft)	28	30
95th Queue (ft)	62	62
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB
Directions Served	L	R	L
Maximum Queue (ft)	32	44	39
Average Queue (ft)	7	16	11
95th Queue (ft)	26	32	35
Link Distance (ft)	885		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		160	175
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	43	23
Average Queue (ft)	14	1
95th Queue (ft)	37	9
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	59	23	71	59	56	24	82	46
Average Queue (ft)	30	3	30	30	29	9	34	15
95th Queue (ft)	47	15	54	48	49	26	60	36
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	55	48	25	42	31
Average Queue (ft)	13	7	2	3	6
95th Queue (ft)	37	29	14	21	24
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	WB	NB
Directions Served	LT	LT	L
Maximum Queue (ft)	31	26	22
Average Queue (ft)	13	6	2
95th Queue (ft)	37	23	13
Link Distance (ft)	684	315	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			265
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Del/Veh (s)	42.4	15.2	3.9	47.9	16.2	2.4	34.7	34.0	10.5	27.3	42.3	11.1

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	21.8

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.9	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	11.3	4.5	4.1	0.4	6.0	5.7	4.1

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.2	3.6	4.2	1.8	0.9	0.6	1.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	3.6	0.6	0.6	3.3	0.2	0.3	3.7	0.0	0.0	0.0
Total Del/Veh (s)	9.4	14.1	4.1	9.3	14.4	5.7	7.6	11.3	4.2	12.6	15.0	3.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	10.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.5	0.4	0.5	0.5	3.0	0.2	0.1	4.1
Total Del/Veh (s)	8.9	13.4	9.3	7.1	11.7	7.2	4.3	7.6	3.2	3.2	6.3	1.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	9.0

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.8	0.1	0.0	0.0	0.0	0.2	3.8	1.4
Total Del/Veh (s)	7.1	2.3	5.0	3.8	1.5	1.6	0.6	0.1	2.0

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	26.0

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	112	87	99	127	81	77	112	123	48	235	188	83
Average Queue (ft)	49	35	45	51	9	22	49	56	9	115	38	21
95th Queue (ft)	97	74	86	105	44	56	95	106	33	197	85	57
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										2		
Queuing Penalty (veh)										1		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	168	91
Average Queue (ft)	88	31
95th Queue (ft)	153	69
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	50	70	66	23
Average Queue (ft)	18	30	27	2
95th Queue (ft)	42	57	54	13
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	44	29
Average Queue (ft)	14	2
95th Queue (ft)	38	14
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	92	29	89	83	71	63	178	62
Average Queue (ft)	48	11	42	38	36	15	76	27
95th Queue (ft)	78	29	71	65	59	40	136	47
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)							0	
Queuing Penalty (veh)							0	

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	173	97	48	70	40
Average Queue (ft)	66	29	10	19	11
95th Queue (ft)	143	73	34	56	33
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	39	26	26	73	4
Average Queue (ft)	11	2	7	14	0
95th Queue (ft)	35	26	25	46	0
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1

Appendix G:

Opening Year (2025) Build Scenarios 1-4 SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.1	1.1	0.0	0.0	0.0	0.1	0.1	0.0	0.5	0.0	0.0
Total Del/Veh (s)	23.1	10.2	2.6	27.2	11.9	2.0	12.8	8.0	2.6	14.8	17.9	8.1

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	11.5

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	6.3	2.5	3.3	1.6	0.3	0.1	6.2	4.8	4.4	2.6

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.8	2.6	3.7	1.6	1.4	1.5	0.5	0.2	1.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	4.1	0.5	0.4	3.6	0.1	0.2	3.8	0.0	0.0	0.0
Total Del/Veh (s)	5.1	10.1	2.8	4.1	9.8	3.0	5.4	8.7	2.3	4.9	8.4	1.9

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	6.0

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.2	0.2	0.3	3.1	0.1	0.3	4.0
Total Del/Veh (s)	3.0	5.6	3.2	5.1	9.4	4.1	1.7	5.1	1.9	2.6	5.2	1.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	5.7

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.9	0.1	0.4	0.0	0.6	0.2	3.9	1.6
Total Del/Veh (s)	5.4	2.0	5.8	2.2	1.8	1.1	0.4	0.1	1.4

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.3	0.4	0.0	0.1	0.0
Total Del/Veh (s)	3.0	2.2	3.2	0.4	6.9	1.7

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	15.6

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	38	60	54	62	23	52	91	90	27	121	81	75
Average Queue (ft)	7	10	19	18	1	15	36	43	4	62	19	23
95th Queue (ft)	22	32	44	47	12	40	72	82	20	104	55	57
Link Distance (ft)			3570	3570			1713	1713			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	101	85
Average Queue (ft)	30	28
95th Queue (ft)	69	62
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	LT
Maximum Queue (ft)	24	36	31	25	37
Average Queue (ft)	8	14	9	8	5
95th Queue (ft)	26	31	32	26	23
Link Distance (ft)	886		296		774
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160		175	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	40	16	26
Average Queue (ft)	15	1	2
95th Queue (ft)	39	8	12
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	67	22	67	60	64	24	76	44
Average Queue (ft)	33	5	29	29	29	8	32	17
95th Queue (ft)	55	19	53	47	48	25	56	37
Link Distance (ft)	1000		1456		1259		503	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	47	50	24	42	26
Average Queue (ft)	15	9	2	3	7
95th Queue (ft)	39	33	13	21	24
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	WB	NB
Directions Served	LT	LT	L
Maximum Queue (ft)	35	26	29
Average Queue (ft)	11	3	3
95th Queue (ft)	35	17	17
Link Distance (ft)	684	315	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			265
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Site Access 1 & 34th Street N

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	21	27
Average Queue (ft)	2	6
95th Queue (ft)	15	23
Link Distance (ft)		530
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.2	1.1	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	44.2	18.2	4.4	52.1	17.9	2.6	35.5	29.5	8.1	29.6	46.9	10.7

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	23.4

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.8	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.6
Total Del/Veh (s)	17.3	5.2	14.6	7.3	4.2	0.7	10.9	6.6	5.8	5.0

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.5	4.3	8.7	7.0	5.0	1.8	1.8	6.4	1.1	0.8	1.8

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	3.7	0.7	0.6	3.3	0.1	0.2	3.4	0.0	0.0	0.0
Total Del/Veh (s)	9.6	14.3	3.9	9.2	14.3	5.8	8.2	11.7	4.6	14.0	16.7	4.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	11.1

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.5	0.4	0.4	0.5	0.7	3.0	0.2	0.2	4.0
Total Del/Veh (s)	9.7	13.9	10.4	6.7	11.5	6.5	4.0	7.8	3.5	3.3	6.1	1.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	9.0

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.8	0.1	0.0	0.0	0.0	0.2	3.5	1.4
Total Del/Veh (s)	7.7	2.3	8.1	4.0	1.5	1.8	0.7	0.1	2.2

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBT	EBR	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.3	0.0	0.1	0.1	0.0
Total Del/Veh (s)	2.6	2.6	0.6	9.8	6.2	1.9

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	27.4

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	116	90	120	124	114	76	123	117	39	258	151	76
Average Queue (ft)	49	37	52	55	16	23	56	62	8	131	36	18
95th Queue (ft)	98	76	101	105	66	60	105	110	29	218	92	52
Link Distance (ft)			3570	3570			1713	1713			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										2		
Queuing Penalty (veh)										2		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	227	91
Average Queue (ft)	103	30
95th Queue (ft)	190	65
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	74	77	57	62	48	17
Average Queue (ft)	19	31	20	22	5	1
95th Queue (ft)	49	57	49	49	27	8
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	LT
Maximum Queue (ft)	43	48	27	32
Average Queue (ft)	14	20	3	2
95th Queue (ft)	37	46	18	14
Link Distance (ft)	712	317		788
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			120	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	97	26	87	86	73	45	213	76
Average Queue (ft)	49	11	44	39	36	16	82	30
95th Queue (ft)	80	28	71	65	61	37	160	56
Link Distance (ft)	1000		1456		1259		503	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)							1	
Queuing Penalty (veh)							1	

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	189	106	40	65	36
Average Queue (ft)	74	30	11	21	12
95th Queue (ft)	153	72	32	59	34
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	WB	NB
Directions Served	LT	LT	L
Maximum Queue (ft)	52	26	59
Average Queue (ft)	14	7	15
95th Queue (ft)	41	26	46
Link Distance (ft)	684	315	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			265
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Site Access 1 & 34th Street N

Movement	WB	NB
Directions Served	T	LR
Maximum Queue (ft)	4	27
Average Queue (ft)	0	12
95th Queue (ft)	3	30
Link Distance (ft)	2413	530
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 3

Appendix H:

Horizon Year (2040) No-Build SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.1	1.1	0.1	0.0	0.1	0.1	0.1	0.0	0.7	0.0	0.0
Total Del/Veh (s)	25.6	17.0	3.1	31.8	22.3	3.1	17.0	12.7	5.2	16.6	19.9	15.7

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.7

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	9.1	3.1	2.8	0.4	4.4	4.4	2.7

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.8	2.9	3.2	1.7	0.5	0.4	1.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	4.1	0.5	0.5	3.4	0.2	0.2	3.5	0.0	0.0	0.0
Total Del/Veh (s)	6.0	11.7	3.2	5.5	10.6	4.0	5.7	9.3	3.1	6.4	9.6	2.3

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	7.0

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.4	0.4	0.4	3.2	0.2	0.2	4.0
Total Del/Veh (s)	4.0	6.7	4.1	5.7	10.4	5.3	2.8	6.3	2.1	3.4	6.3	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	6.3

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.9	3.7	0.1	0.2	0.0	0.0	0.4	3.3	1.6
Total Del/Veh (s)	8.0	3.9	7.1	3.2	1.9	1.5	0.9	0.2	2.4

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	21.2

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	80	66	90	105	40	64	136	131	32	171	99	100
Average Queue (ft)	27	26	29	31	3	24	66	66	10	73	31	32
95th Queue (ft)	60	57	64	74	24	53	109	105	31	134	77	75
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	110	187
Average Queue (ft)	42	69
95th Queue (ft)	84	134
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	28	40	44	4
Average Queue (ft)	9	16	18	0
95th Queue (ft)	28	33	45	3
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	56	18
Average Queue (ft)	18	1
95th Queue (ft)	45	11
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	79	23	66	67	65	25	80	48
Average Queue (ft)	37	6	33	32	29	12	43	21
95th Queue (ft)	62	21	56	53	48	30	71	39
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	78	54	30	44	40
Average Queue (ft)	25	12	4	6	12
95th Queue (ft)	58	38	20	30	34
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	48	175	26	58
Average Queue (ft)	13	32	4	14
95th Queue (ft)	39	132	18	42
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.3	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	41.3	21.7	5.2	47.6	27.9	4.8	33.9	28.3	12.9	28.6	41.0	16.6

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	26.3

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.8	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	19.6	6.9	6.9	0.5	6.6	5.9	5.3

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	47.4	51.1	7.1	2.0	18.6	4.1	11.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.3	3.8	0.7	0.8	3.1	0.3	0.3	3.5	0.0	0.0	0.0
Total Del/Veh (s)	23.9	26.3	5.3	17.3	21.5	11.7	14.7	19.1	5.8	93.7	92.5	12.5

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	39.1

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.6	0.5	0.5	0.6	0.8	2.9	0.3	0.2	4.0
Total Del/Veh (s)	16.5	20.6	14.2	14.4	18.7	14.0	4.6	9.6	4.1	4.1	6.8	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	14.1

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.0	3.6	0.1	0.0	0.0	0.0	0.3	3.5	1.2
Total Del/Veh (s)	17.5	3.7	14.9	7.5	2.0	1.9	1.3	0.2	3.9

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	45.3

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	210	156	144	162	107	83	147	149	48	264	195	94
Average Queue (ft)	117	83	65	75	24	30	82	83	18	132	67	30
95th Queue (ft)	185	138	123	139	76	69	134	133	41	225	140	65
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										3	0	
Queuing Penalty (veh)										3	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	220	158
Average Queue (ft)	116	62
95th Queue (ft)	193	115
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	L	T	R
Maximum Queue (ft)	48	104	100	4	22
Average Queue (ft)	21	41	41	0	2
95th Queue (ft)	45	77	80	0	11
Link Distance (ft)	885			768	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160	175		275
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB	SB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	62	29	344	209
Average Queue (ft)	22	6	97	33
95th Queue (ft)	63	24	372	200
Link Distance (ft)	712		792	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		120		200
Storage Blk Time (%)			15	
Queuing Penalty (veh)			7	

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	LT	R	LT	R	LT	R
Maximum Queue (ft)	204	40	138	146	142	45	504	373
Average Queue (ft)	87	16	65	58	55	18	340	200
95th Queue (ft)	170	36	114	109	99	41	615	537
Link Distance (ft)	1000		1456		1259		509	
Upstream Blk Time (%)							8	
Queuing Penalty (veh)							48	
Storage Bay Dist (ft)		225		225		225		225
Storage Blk Time (%)	2				0		60	
Queuing Penalty (veh)	0				0		94	

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	287	287	53	67	32
Average Queue (ft)	125	87	15	25	15
95th Queue (ft)	239	218	41	64	35
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	R
Maximum Queue (ft)	47	175	34	134	5
Average Queue (ft)	15	19	9	50	0
95th Queue (ft)	41	105	29	102	3
Link Distance (ft)	684		315		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	275
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 153

Appendix I:

Horizon Year (2040) No-Build Mitigated SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.1	1.1	0.1	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0
Total Del/Veh (s)	26.9	16.2	2.9	31.2	21.7	3.0	18.6	14.3	4.9	17.7	20.7	15.8

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	18.0

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	8.8	3.2	2.5	0.4	4.5	4.2	2.7

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.9	3.4	3.1	1.6	0.5	0.3	1.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	3.8	0.4	0.4	3.4	0.2	0.2	3.9	0.0	0.0	0.0
Total Del/Veh (s)	6.7	11.4	2.6	5.9	10.3	3.7	6.0	9.7	3.1	5.5	8.6	2.2

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.5	0.5	0.4	3.2	0.2	0.3	4.0
Total Del/Veh (s)	3.9	6.9	4.0	6.3	11.2	5.8	2.7	5.9	2.0	4.1	6.8	1.8

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	6.8

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.7	0.1	0.3	0.0	0.3	0.4	3.7	1.6
Total Del/Veh (s)	9.2	6.1	8.2	3.6	1.5	1.1	0.9	0.2	3.2

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	21.7

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	73	74	78	76	44	79	125	128	36	179	100	99
Average Queue (ft)	28	31	31	28	2	22	67	68	10	84	30	30
95th Queue (ft)	63	63	67	61	20	56	114	109	32	140	74	73
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	116	198
Average Queue (ft)	47	71
95th Queue (ft)	98	142
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	24	45	39	8
Average Queue (ft)	9	17	16	0
95th Queue (ft)	28	34	40	4
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	48	24
Average Queue (ft)	18	1
95th Queue (ft)	41	9
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	79	24	64	61	71	36	77	71	52
Average Queue (ft)	38	6	31	31	31	12	33	28	23
95th Queue (ft)	63	21	52	50	56	33	58	52	41
Link Distance (ft)	1000		1456		1259			509	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	92	104	39	43	53
Average Queue (ft)	24	20	5	6	13
95th Queue (ft)	59	62	23	30	36
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	133	218	25	53
Average Queue (ft)	18	29	4	15
95th Queue (ft)	87	154	20	41
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)		1		
Queuing Penalty (veh)		0		

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	40.9	21.5	5.1	42.6	28.4	4.5	32.3	29.0	12.4	28.5	41.9	18.2

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	26.4

2: Ideal Avenue N & 32nd Avenue N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.8	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	22.5	7.0	5.4	0.5	6.6	6.5	5.3

3: Ideal Avenue N & 31st Street N Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.4	4.8	5.0	2.0	1.1	0.7	1.7

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.3	3.6	0.7	0.8	3.2	0.3	0.3	3.4	0.0	0.0	0.0
Total Del/Veh (s)	16.8	20.9	5.4	15.8	19.9	9.6	12.9	18.6	6.0	16.2	12.9	4.7

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	14.4

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.6	0.5	0.6	0.8	0.9	2.9	0.2	0.2	4.0
Total Del/Veh (s)	15.7	19.9	15.6	14.5	19.4	14.4	5.7	9.1	4.2	4.5	6.4	1.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	14.1

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.9	3.6	0.1	0.0	0.0	0.0	0.3	3.5	1.2
Total Del/Veh (s)	15.2	5.3	14.7	7.5	1.9	1.8	1.2	0.2	4.3

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	33.7

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	223	168	151	176	89	85	166	152	59	254	176	78
Average Queue (ft)	118	79	66	72	21	28	84	85	20	133	68	29
95th Queue (ft)	190	137	125	132	67	66	138	138	48	209	134	65
Link Distance (ft)			3570	3570			4196	4196			768	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										2	0	
Queuing Penalty (veh)										3	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	219	153
Average Queue (ft)	108	69
95th Queue (ft)	189	126
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N

Movement	EB	EB	NB	SB
Directions Served	L	R	L	R
Maximum Queue (ft)	68	99	73	22
Average Queue (ft)	22	41	34	2
95th Queue (ft)	53	76	62	11
Link Distance (ft)	885			
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		160	175	275
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 3: Ideal Avenue N & 31st Street N

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	44	30
Average Queue (ft)	15	5
95th Queue (ft)	38	23
Link Distance (ft)	712	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	162	43	131	132	137	51	148	93	68
Average Queue (ft)	74	15	62	54	56	18	71	49	30
95th Queue (ft)	130	35	103	93	101	43	124	80	53
Link Distance (ft)	1000		1456		1259			509	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	0						0		
Queuing Penalty (veh)	0						0		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	305	314	60	76	40
Average Queue (ft)	119	86	18	25	14
95th Queue (ft)	244	249	47	63	37
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	52	220	34	98	4
Average Queue (ft)	16	42	9	49	0
95th Queue (ft)	43	166	28	89	3
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 3

Appendix J:

Horizon Year (2040) Build Scenario 1 SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Del/Veh (s)	31.2	20.9	3.3	33.8	24.9	3.6	21.6	17.4	6.5	20.0	24.0	21.1

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	21.6

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	9.8	3.4	3.4	2.5	0.5	0.3	6.5	5.4	4.7	3.3

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.3	3.5	3.2	1.8	1.6	2.7	0.7	0.4	1.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	3.9	0.3	0.5	3.4	0.2	0.2	3.7	0.0	0.0	0.0
Total Del/Veh (s)	7.2	11.1	2.9	4.6	10.9	4.0	6.6	10.0	2.8	5.6	8.2	2.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	6.8

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.4	0.5	0.4	3.2	0.3	0.3	4.0
Total Del/Veh (s)	4.4	7.4	4.1	6.5	11.2	6.7	2.7	6.4	2.2	2.9	6.0	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	7.0

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.7	0.1	0.2	0.0	0.0	0.3	3.4	1.4
Total Del/Veh (s)	8.5	8.1	10.5	3.7	1.6	1.4	1.2	0.1	4.6

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.2	0.0	0.0	0.2	0.1	0.1	0.2	0.0
Total Del/Veh (s)	9.5	4.4	4.0	3.3	0.8	0.3	24.1	20.6	5.6	4.1

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	25.4

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	86	102	112	120	60	86	150	137	35	196	114	100
Average Queue (ft)	36	44	53	49	5	29	82	81	10	93	32	32
95th Queue (ft)	75	86	93	99	32	67	133	128	31	159	80	73
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	157	232
Average Queue (ft)	56	100
95th Queue (ft)	113	178
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	LT
Maximum Queue (ft)	28	50	35	46	34
Average Queue (ft)	10	18	8	16	6
95th Queue (ft)	29	39	30	37	25
Link Distance (ft)	886		296		774
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160		175	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	56	15	46
Average Queue (ft)	17	1	4
95th Queue (ft)	44	6	23
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	80	23	67	60	71	29	59	74	60
Average Queue (ft)	36	6	33	31	32	9	32	29	26
95th Queue (ft)	62	21	58	50	56	27	53	55	47
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	86	72	35	45	46
Average Queue (ft)	26	19	7	4	11
95th Queue (ft)	61	55	27	24	33
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	87	249	99	49	13
Average Queue (ft)	16	56	36	16	0
95th Queue (ft)	61	195	68	41	6
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	72	24	13	31	99
Average Queue (ft)	27	2	0	8	35
95th Queue (ft)	58	13	4	26	69
Link Distance (ft)				530	262
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	300	300	300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.4	1.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	47.1	29.3	7.0	47.0	36.7	7.3	39.4	27.2	15.4	29.5	45.7	25.1

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	32.6

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.8	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	27.3	7.4	24.0	8.2	5.9	0.7	12.2	7.3	7.0	6.0

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.4	5.9	17.4	8.0	5.5	1.9	1.9	7.5	1.3	1.0	2.1

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	3.6	0.8	0.8	3.2	0.3	0.3	3.3	0.0	0.0	0.0
Total Del/Veh (s)	24.0	27.7	6.0	16.3	22.4	12.1	18.1	20.0	5.9	19.8	14.5	5.8

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	17.1

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.7	0.7	0.6	0.8	0.8	2.9	0.2	0.2	4.0
Total Del/Veh (s)	20.2	24.0	17.9	22.9	27.6	22.8	6.7	9.5	4.4	4.2	8.1	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	19.4

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.6	0.1	0.0	0.0	0.0	0.3	3.5	1.1
Total Del/Veh (s)	14.8	6.5	19.3	7.6	2.2	2.1	1.4	0.2	5.3

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.1
Total Del/Veh (s)	10.8	4.1	4.0	1.1	1.3	18.1	9.4	27.0	18.9	7.1

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	42.2

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	242	220	227	214	139	90	201	211	49	355	183	75
Average Queue (ft)	137	120	120	116	30	39	133	138	19	168	65	27
95th Queue (ft)	221	191	194	190	97	79	194	197	45	284	131	60
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)				0			0	0		8	0	
Queuing Penalty (veh)				0			0	0		11	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	252	237
Average Queue (ft)	135	109
95th Queue (ft)	218	203
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	69	103	55	84	52	29
Average Queue (ft)	23	42	19	34	7	2
95th Queue (ft)	54	78	49	62	33	14
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	LT
Maximum Queue (ft)	49	52	28	37
Average Queue (ft)	18	21	4	2
95th Queue (ft)	44	48	21	15
Link Distance (ft)	712	317		788
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			120	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	218	50	151	157	148	51	169	128	87
Average Queue (ft)	92	16	68	62	55	18	80	54	41
95th Queue (ft)	170	38	123	117	104	39	143	96	73
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	1			0			0		
Queuing Penalty (veh)	0			0			0		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	364	474	55	68	60
Average Queue (ft)	147	149	21	31	17
95th Queue (ft)	303	374	46	67	45
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	48	263	95	119	4
Average Queue (ft)	14	45	36	48	0
95th Queue (ft)	41	182	73	99	4
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	T	R	LTR	LTR
Maximum Queue (ft)	117	6	9	23	30	17	39	245
Average Queue (ft)	47	0	0	2	4	1	15	95
95th Queue (ft)	97	5	5	12	18	7	35	188
Link Distance (ft)		1718	1718	2408	2408		530	262
Upstream Blk Time (%)								1
Queuing Penalty (veh)								0
Storage Bay Dist (ft)	300					300		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 12

Appendix K:

Horizon Year (2040) Build Scenario 2 SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.6	0.2	1.1	0.0	0.0	0.0	0.1	0.1	0.0	0.7	0.0	0.0
Total Del/Veh (s)	29.2	19.5	3.1	35.4	23.9	4.0	21.1	16.5	4.5	18.8	23.3	21.7

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	21.1

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	4.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	8.4	3.0	3.3	2.7	0.4	0.4	6.4	5.3	4.7	3.2

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.0	3.5	4.3	1.7	1.3	2.4	0.7	0.4	1.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	4.1	0.5	0.4	3.5	0.3	0.2	3.4	0.0	0.0	0.0
Total Del/Veh (s)	6.3	11.2	2.4	4.9	10.5	3.9	5.8	9.5	2.9	5.2	7.9	2.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.5

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.5	0.4	0.3	3.2	0.4	0.3	4.0
Total Del/Veh (s)	6.2	8.0	5.5	6.3	11.2	6.8	2.5	5.6	2.2	3.7	6.7	1.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	7.2

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.7	0.1	0.1	0.0	0.1	0.4	3.4	1.4
Total Del/Veh (s)	9.4	8.1	11.2	3.9	1.9	1.3	1.1	0.2	4.6

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.2	0.0	0.2	0.1	0.2	0.1	0.1
Total Del/Veh (s)	8.8	4.3	3.3	2.1	0.8	0.4	15.0	18.7	6.0	3.9

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	24.8

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	94	90	109	110	51	78	160	163	34	197	111	110
Average Queue (ft)	36	36	49	44	5	25	82	81	10	88	32	35
95th Queue (ft)	77	72	97	89	30	63	137	132	31	152	79	82
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	152	276
Average Queue (ft)	55	99
95th Queue (ft)	111	194
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	LT
Maximum Queue (ft)	24	39	36	49	38
Average Queue (ft)	8	17	9	15	5
95th Queue (ft)	26	33	31	39	24
Link Distance (ft)	886		296		774
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160		175	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	48	21	31
Average Queue (ft)	18	1	3
95th Queue (ft)	44	11	18
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	63	23	72	62	62	29	69	57	56
Average Queue (ft)	35	6	34	32	31	11	31	27	26
95th Queue (ft)	55	21	57	54	53	30	54	50	48
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	127	67	26	45	46
Average Queue (ft)	34	20	5	6	11
95th Queue (ft)	87	53	20	30	34
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	44	270	77	62
Average Queue (ft)	16	54	33	18
95th Queue (ft)	41	202	62	48
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	78	24	4	35	90
Average Queue (ft)	25	1	0	8	36
95th Queue (ft)	59	10	3	27	73
Link Distance (ft)				530	262
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	300	300	300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.4	1.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	48.0	29.2	6.6	50.4	38.6	8.4	38.8	33.4	14.7	27.7	46.3	24.8

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	33.0

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	22.4	7.7	17.5	8.0	6.0	0.7	12.1	7.4	7.0	5.8

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	20.5	5.8	15.1	7.7	6.3	2.0	1.8	5.9	1.2	0.9	2.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.3	3.5	0.8	0.7	3.1	0.4	0.3	3.4	0.0	0.0	0.0
Total Del/Veh (s)	24.8	28.8	5.7	15.8	22.3	11.2	15.7	19.4	6.4	20.0	13.4	5.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	16.9

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.7	0.7	0.6	0.8	0.8	2.9	0.2	0.2	4.0
Total Del/Veh (s)	40.4	45.9	43.5	37.2	40.6	40.0	6.1	10.3	4.2	5.2	7.2	1.8

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	32.5

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.6	0.1	0.0	0.0	0.0	0.3	3.6	1.1
Total Del/Veh (s)	17.5	6.5	18.7	8.0	2.1	2.3	1.5	0.3	5.3

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	11.8	14.2	2.7
Total Del/Veh (s)	11.8	4.1	3.6	1.2	1.4	20.7	9.3	61.0	48.8	14.5

Total Network Performance

Denied Del/Veh (s)	2.1
Total Del/Veh (s)	50.0

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	264	256	226	221	122	111	236	227	58	302	192	84
Average Queue (ft)	137	124	124	124	32	40	150	153	19	164	77	28
95th Queue (ft)	223	205	207	206	87	82	219	219	45	267	154	65
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)							1	0		7	0	
Queuing Penalty (veh)							0	0		9	1	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	264	203
Average Queue (ft)	133	105
95th Queue (ft)	235	174
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	55	110	59	81	51	18
Average Queue (ft)	24	47	23	33	5	2
95th Queue (ft)	50	88	50	64	29	12
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	LT
Maximum Queue (ft)	44	57	27	26
Average Queue (ft)	17	18	4	1
95th Queue (ft)	39	47	21	12
Link Distance (ft)	712	317		788
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			120	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	213	40	149	143	123	54	172	101	84
Average Queue (ft)	97	14	66	59	56	17	81	48	38
95th Queue (ft)	191	35	118	108	101	41	149	81	67
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	2						0		
Queuing Penalty (veh)	1						1		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	579	636	60	65	55
Average Queue (ft)	272	256	22	30	17
95th Queue (ft)	550	572	49	65	42
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	R
Maximum Queue (ft)	53	286	90	121	5
Average Queue (ft)	15	50	34	51	0
95th Queue (ft)	43	193	68	105	4
Link Distance (ft)	684		315		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	275
Storage Blk Time (%)		0			
Queuing Penalty (veh)		0			

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	T	R	LTR	LTR
Maximum Queue (ft)	141	16	5	21	21	28	44	296
Average Queue (ft)	57	1	0	2	2	2	14	187
95th Queue (ft)	109	9	4	11	13	14	35	334
Link Distance (ft)		1718	1718	2408	2408		530	262
Upstream Blk Time (%)								27
Queuing Penalty (veh)								0
Storage Bay Dist (ft)	300					300		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 13

Appendix L:

Horizon Year (2040) Build Scenario 2 Mitigated SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.4	1.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	48.8	28.5	6.4	49.7	39.6	8.1	46.8	31.2	19.4	29.6	44.6	28.4

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	34.6

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	29.2	7.9	18.5	7.8	6.2	0.8	11.7	7.1	6.9	6.1

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.5	5.9	15.0	8.1	5.5	2.0	2.0	5.5	1.2	0.9	2.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.4	3.5	0.8	0.7	3.2	0.3	0.3	3.3	0.0	0.0	0.0
Total Del/Veh (s)	25.5	28.9	5.8	17.2	22.3	11.5	16.0	21.2	6.2	20.4	12.9	5.5

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	17.3

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.1	0.1	0.8	0.7	2.9	0.3	0.3	3.9
Total Del/Veh (s)	5.5	8.9	4.2	6.8	9.6	3.3	7.5	10.9	4.3	4.5	7.6	1.9

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	7.4

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.0	3.6	0.1	0.0	0.0	0.0	0.3	3.5	1.1
Total Del/Veh (s)	19.5	6.5	17.2	7.8	2.3	2.2	1.4	0.2	5.3

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.1
Total Del/Veh (s)	10.0	3.6	2.9	1.4	1.5	18.1	9.7	24.7	9.1	6.1

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	38.2

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	257	228	228	216	137	113	244	272	57	322	358	98
Average Queue (ft)	145	125	118	119	29	43	154	158	19	180	104	31
95th Queue (ft)	230	200	191	190	92	89	226	239	44	319	292	73
Link Distance (ft)			3570	3570			1707	1707			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)				0			1	1		12	0	
Queuing Penalty (veh)				0			0	0		18	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	238	276
Average Queue (ft)	122	118
95th Queue (ft)	211	227
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	88	105	48	76	62	21
Average Queue (ft)	27	44	22	35	7	1
95th Queue (ft)	62	80	48	64	33	9
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	LT
Maximum Queue (ft)	40	41	29	21
Average Queue (ft)	15	16	4	2
95th Queue (ft)	37	42	21	14
Link Distance (ft)	712	317		788
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			120	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	234	42	158	130	147	51	196	90	91
Average Queue (ft)	96	16	66	62	59	19	81	49	39
95th Queue (ft)	198	35	121	108	109	41	155	79	69
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	3						1		
Queuing Penalty (veh)	1						4		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	R	LT	R
Maximum Queue (ft)	88	15	94	15	70	59	51	20
Average Queue (ft)	36	1	28	1	24	24	17	1
95th Queue (ft)	71	9	68	9	54	61	41	10
Link Distance (ft)	908	908	2668	2668	1828		1170	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)						150		150
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LT	L	T	R
Maximum Queue (ft)	53	235	98	130	5	4
Average Queue (ft)	15	48	33	47	0	0
95th Queue (ft)	45	185	69	102	4	3
Link Distance (ft)	684		315		1010	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		350		265		275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	T	R	LTR	LT	R
Maximum Queue (ft)	109	12	23	30	17	49	140	106
Average Queue (ft)	42	1	2	3	1	15	55	47
95th Queue (ft)	87	6	13	18	7	39	112	79
Link Distance (ft)		1707	2408	2408		530	556	556
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	300				300			
Storage Blk Time (%)								
Queuing Penalty (veh)								

Network Summary

Network wide Queuing Penalty: 24

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Del/Veh (s)	29.8	21.2	3.3	34.7	24.5	3.7	21.6	19.5	5.6	20.3	22.5	18.6

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.8

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	11.6	3.2	3.9	2.6	0.5	0.2	6.8	5.3	4.7	3.3

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.1	3.0	3.4	1.8	1.9	2.3	0.8	0.3	1.6

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	3.8	0.5	0.5	3.4	0.2	0.2	3.7	0.0	0.0	0.0
Total Del/Veh (s)	6.4	11.7	3.0	5.4	11.2	4.1	6.7	9.8	2.8	5.5	8.4	2.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.1	0.1	0.5	0.3	3.2	0.3	0.3	3.9
Total Del/Veh (s)	2.6	5.1	1.9	4.7	8.0	2.6	2.8	6.9	2.2	3.6	5.7	1.9

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	5.1

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.8	3.6	0.2	0.1	0.0	0.1	0.3	3.7	1.4
Total Del/Veh (s)	8.8	5.6	9.9	3.8	1.8	1.5	1.1	0.1	3.8

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	8.7	4.1	3.6	2.9	0.8	0.3	19.5	19.6	3.8	3.7

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	23.4

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	82	88	148	130	49	86	149	162	37	188	124	87
Average Queue (ft)	36	41	50	45	5	30	84	82	8	87	36	30
95th Queue (ft)	75	82	103	96	29	66	143	137	28	151	90	71
Link Distance (ft)			3570	3570			1707	1707			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	118	225
Average Queue (ft)	52	95
95th Queue (ft)	101	172
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	LT
Maximum Queue (ft)	38	44	36	50	38
Average Queue (ft)	11	17	9	16	5
95th Queue (ft)	33	34	33	39	24
Link Distance (ft)	886		296		774
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160		175	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	66	27	45
Average Queue (ft)	20	2	4
95th Queue (ft)	48	12	25
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	70	25	70	77	74	24	64	70	48
Average Queue (ft)	35	6	30	32	34	10	32	29	24
95th Queue (ft)	57	21	55	55	60	28	51	53	43
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	LT	R	LT	R
Maximum Queue (ft)	41	4	48	27	37	44	22
Average Queue (ft)	11	0	11	6	4	11	2
95th Queue (ft)	32	2	32	22	24	33	14
Link Distance (ft)	908	908	2668	1828		1170	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					150		150
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	39	224	80	60	4
Average Queue (ft)	15	34	34	16	0
95th Queue (ft)	41	151	66	44	3
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	R	LTR	LT	R
Maximum Queue (ft)	84	20	8	26	60	56
Average Queue (ft)	19	1	0	6	23	23
95th Queue (ft)	50	11	4	23	52	44
Link Distance (ft)				530	556	556
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	300	300	300			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Appendix M:

Horizon Year (2040) Build Scenario 3 SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.2	1.2	0.1	0.0	0.0	0.0	0.1	0.0	0.5	0.0	0.0
Total Del/Veh (s)	29.5	19.5	3.2	32.1	25.2	3.0	19.8	15.1	5.6	19.1	22.2	17.7

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.0

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	8.7	3.1	3.5	2.4	0.4	0.3	5.9	5.1	5.3	3.1

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.9	3.3	3.8	1.7	1.6	2.3	0.8	0.3	1.5

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	3.9	0.4	0.4	3.5	0.3	0.2	3.4	0.0	0.0	0.0
Total Del/Veh (s)	6.8	11.2	3.0	5.2	11.1	3.9	6.6	9.8	2.8	5.5	8.3	2.4

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.5	0.4	0.5	0.3	0.4	3.1	0.2	0.2	4.0
Total Del/Veh (s)	4.7	8.0	4.6	6.5	11.0	6.0	2.5	6.1	2.2	3.6	6.5	1.8

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	7.0

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.7	0.1	0.2	0.0	0.2	0.4	3.2	1.5
Total Del/Veh (s)	8.0	3.9	8.7	3.9	1.7	1.3	1.0	0.2	2.7

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	8.9	4.4	3.3	1.4	0.8	0.4	18.0	21.7	7.8	4.1

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	23.5

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	89	89	115	109	56	86	158	156	31	192	116	103
Average Queue (ft)	34	37	48	47	4	28	76	79	9	88	32	32
95th Queue (ft)	72	75	92	94	27	65	127	129	30	147	80	76
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	136	204
Average Queue (ft)	51	83
95th Queue (ft)	98	150
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	33	57	36	45	49	4
Average Queue (ft)	10	18	9	14	6	0
95th Queue (ft)	30	39	33	36	29	5
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	40	16	31
Average Queue (ft)	16	1	3
95th Queue (ft)	41	9	17
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	74	24	68	66	80	29	67	83	66
Average Queue (ft)	39	6	35	33	33	11	33	30	25
95th Queue (ft)	64	21	58	53	61	29	55	57	48
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	90	85	29	41	45
Average Queue (ft)	30	19	6	5	12
95th Queue (ft)	71	56	23	27	36
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	35	166	55	64
Average Queue (ft)	16	29	18	17
95th Queue (ft)	41	124	43	46
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	R	LTR	LTR
Maximum Queue (ft)	86	5	10	10	12	43	95
Average Queue (ft)	27	0	1	0	1	11	31
95th Queue (ft)	63	3	7	5	6	33	67
Link Distance (ft)		1718		2408		530	262
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	300		300		300		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.3	0.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	43.5	27.5	6.0	43.8	36.1	8.5	38.5	34.4	16.9	28.7	46.3	23.5

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	31.4

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.7	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.6
Total Del/Veh (s)	23.4	7.2	16.4	7.9	5.4	0.7	11.3	7.3	6.4	5.7

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.9	6.4	16.1	8.1	5.6	1.9	1.6	7.8	1.2	1.0	2.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.3	3.6	0.7	0.8	3.2	0.3	0.3	3.7	0.0	0.0	0.0
Total Del/Veh (s)	16.6	21.1	4.9	14.2	19.7	9.1	11.2	16.1	6.0	15.7	12.9	5.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	13.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.6	0.6	0.6	0.8	0.9	2.9	0.1	0.3	4.0
Total Del/Veh (s)	25.4	28.6	25.4	21.2	26.1	20.7	6.4	10.0	4.4	3.8	7.3	1.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	20.2

6: Ideal Avenue N & 36th Street N/Site Access 4 Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.0	3.5	0.2	0.0	0.0	0.0	0.3	3.5	1.2
Total Del/Veh (s)	16.9	7.0	17.6	7.6	2.1	1.9	1.4	0.2	5.3

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.4	0.4	0.1
Total Del/Veh (s)	9.7	3.8	2.8	1.0	1.0	17.3	10.3	28.8	18.4	6.8

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	40.4

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	223	201	190	200	105	94	210	210	60	312	263	79
Average Queue (ft)	131	103	105	107	26	41	130	134	21	167	80	31
95th Queue (ft)	199	171	170	173	77	80	191	193	49	277	180	67
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)							0	0		6	0	
Queuing Penalty (veh)							0	0		8	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	245	208
Average Queue (ft)	123	95
95th Queue (ft)	209	170
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	70	88	56	85	57	28
Average Queue (ft)	24	41	22	30	6	2
95th Queue (ft)	54	72	49	58	32	13
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	LT	R
Maximum Queue (ft)	48	52	28	22	4
Average Queue (ft)	17	20	5	1	0
95th Queue (ft)	41	48	21	11	3
Link Distance (ft)	712	317		788	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			120		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	170	37	137	120	99	52	154	96	72
Average Queue (ft)	75	13	62	53	47	19	72	47	33
95th Queue (ft)	133	32	109	91	80	44	131	79	57
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	0						0		
Queuing Penalty (veh)	0						0		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	442	406	61	64	44
Average Queue (ft)	169	139	22	33	16
95th Queue (ft)	370	328	47	67	37
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N/Site Access 4

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	44	246	76	127
Average Queue (ft)	17	50	27	50
95th Queue (ft)	43	195	58	104
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 7: Site Access 1 & 34th Street N

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	84	5	16	30	9	43	218
Average Queue (ft)	39	0	1	2	0	15	95
95th Queue (ft)	72	4	9	17	5	36	180
Link Distance (ft)		1718	2408	2408		530	262
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	300				300		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 9

Appendix N:

Horizon Year (2040) Build Scenario 4 SimTraffic Report

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.5	0.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Del/Veh (s)	24.9	16.5	3.1	35.3	21.1	2.8	17.5	13.5	4.4	17.6	20.4	15.6

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.3

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	4.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	8.7	3.0	4.0	2.6	0.5	0.2	6.4	5.3	5.0	3.2

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	7.4	3.0	4.0	1.7	1.7	2.3	0.6	0.5	1.5

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.3	3.7	0.4	0.4	3.4	0.2	0.2	3.6	0.0	0.0	0.0
Total Del/Veh (s)	6.7	11.4	2.5	5.4	10.4	4.0	5.6	9.3	2.8	5.2	8.5	2.2

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.6

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.4	0.4	0.4	0.4	0.3	3.2	0.3	0.3	4.0
Total Del/Veh (s)	4.8	6.9	4.9	5.5	10.4	6.1	1.6	5.0	2.0	2.7	5.7	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	6.3

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.7	0.1	0.1	0.0	0.3	0.3	3.6	1.6
Total Del/Veh (s)	9.6	4.2	8.0	3.3	1.8	1.2	0.9	0.2	2.6

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	All
Denied Del/Veh (s)	0.0	0.5	0.0	0.0	0.1	0.0
Total Del/Veh (s)	3.6	2.8	2.9	0.4	10.9	2.1

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	20.8

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	79	67	90	90	36	60	122	120	33	182	103	95
Average Queue (ft)	28	23	34	33	2	21	63	65	11	79	28	30
95th Queue (ft)	60	54	74	72	19	51	104	106	32	140	70	73
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	139	190
Average Queue (ft)	46	71
95th Queue (ft)	98	136
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	L	LT
Maximum Queue (ft)	33	41	35	53	43
Average Queue (ft)	10	17	9	14	6
95th Queue (ft)	30	34	32	37	28
Link Distance (ft)	886		296		774
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		160		175	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	NB	SB
Directions Served	LTR	L	LT
Maximum Queue (ft)	43	21	37
Average Queue (ft)	16	1	3
95th Queue (ft)	39	9	19
Link Distance (ft)	712		788
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		120	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	87	23	66	77	67	24	59	63	61
Average Queue (ft)	38	6	31	35	32	10	31	28	21
95th Queue (ft)	65	22	52	57	53	28	50	51	44
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	83	60	25	48	43
Average Queue (ft)	26	12	4	7	9
95th Queue (ft)	64	42	17	31	30
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB
Directions Served	LT	R	LT	L
Maximum Queue (ft)	39	207	30	48
Average Queue (ft)	15	20	8	13
95th Queue (ft)	40	134	28	37
Link Distance (ft)	684		315	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		350		265
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 7: Site Access 1 & 34th Street N

Movement	WB	NB
Directions Served	L	LTR
Maximum Queue (ft)	24	26
Average Queue (ft)	2	7
95th Queue (ft)	13	25
Link Distance (ft)		530
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	300	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.3	1.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Total Del/Veh (s)	42.7	23.8	6.1	48.9	30.1	4.3	39.0	29.1	14.0	30.2	45.8	19.2

1: Ideal Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	28.8

2: Ideal Avenue N & 32nd Avenue N/Site Access 2 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.5	3.8	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.5
Total Del/Veh (s)	20.2	7.1	20.6	9.2	5.5	0.7	10.9	7.1	6.7	5.6

3: Ideal Avenue N & 31st Street N/Site Access 3 Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.9	5.0	14.6	9.2	5.2	1.9	1.6	6.8	1.2	0.7	2.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	3.7	0.7	0.8	3.1	0.2	0.3	3.3	0.0	0.0	0.0
Total Del/Veh (s)	16.9	20.5	5.2	12.4	19.4	9.2	14.9	17.7	5.7	16.6	12.4	5.0

4: Ideal Avenue N & Stillwater Boulevard N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	13.9

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N 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	0.6	0.5	0.5	0.8	0.9	3.0	0.2	0.2	4.1
Total Del/Veh (s)	16.9	20.7	18.1	12.4	17.4	10.9	5.6	9.1	4.1	4.1	7.1	1.7

5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	13.7

6: Ideal Avenue N & 36th Street N Performance by movement

Movement	EBL	EBR	WBL	NBL	NBT	NBR	SBT	SBR	All
Denied Del/Veh (s)	1.0	3.6	0.1	0.0	0.0	0.0	0.3	3.7	1.2
Total Del/Veh (s)	17.6	5.3	16.0	8.1	2.0	1.6	1.4	0.2	4.6

7: Site Access 1 & 34th Street N Performance by movement

Movement	EBT	EBR	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.1	2.9	0.8	10.0	7.1	2.3

Total Network Performance

Denied Del/Veh (s)	1.4
Total Del/Veh (s)	35.2

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	L	T	T	R	L	T	T	R	L	TR	L
Maximum Queue (ft)	239	201	140	145	148	91	163	154	60	305	210	88
Average Queue (ft)	131	90	70	77	33	29	86	88	19	167	70	31
95th Queue (ft)	210	163	124	131	103	69	136	138	47	275	142	71
Link Distance (ft)			3570	3570			1718	1718			774	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400	400			275	225			250	200		275
Storage Blk Time (%)										7	0	
Queuing Penalty (veh)										9	0	

Intersection: 1: Ideal Avenue N & 34th Street N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	238	179
Average Queue (ft)	126	76
95th Queue (ft)	208	143
Link Distance (ft)	1252	1252
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 2: Ideal Avenue N & 32nd Avenue N/Site Access 2

Movement	EB	EB	WB	NB	SB	SB
Directions Served	LT	R	LTR	L	LT	R
Maximum Queue (ft)	59	111	66	78	44	22
Average Queue (ft)	24	42	25	33	5	2
95th Queue (ft)	49	83	56	61	26	12
Link Distance (ft)	886		296		774	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		160		175		275
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

Intersection: 3: Ideal Avenue N & 31st Street N/Site Access 3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	LT
Maximum Queue (ft)	44	48	28	33
Average Queue (ft)	16	20	5	2
95th Queue (ft)	38	46	22	14
Link Distance (ft)	712	317		788
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			120	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Ideal Avenue N & Stillwater Boulevard N

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	LT	R	LT	R	LT	R	L	T	R
Maximum Queue (ft)	159	48	124	127	120	50	176	97	70
Average Queue (ft)	72	16	59	55	52	18	73	49	32
95th Queue (ft)	131	37	101	98	95	40	136	80	58
Link Distance (ft)	1000		1456		1259			503	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)		225		225		225	200		225
Storage Blk Time (%)	0						0		
Queuing Penalty (veh)	0						1		

Intersection: 5: Stillwater Boulevard N/Jamaca Avenue N & 34th Street N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	LT	R	LT
Maximum Queue (ft)	297	267	50	50	50
Average Queue (ft)	119	74	17	25	15
95th Queue (ft)	245	212	43	61	39
Link Distance (ft)	908	2662	1828		1170
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 6: Ideal Avenue N & 36th Street N

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LT	L	T
Maximum Queue (ft)	53	230	51	154	4
Average Queue (ft)	15	41	11	58	0
95th Queue (ft)	42	162	35	120	3
Link Distance (ft)	684		315		1010
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		350		265	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Site Access 1 & 34th Street N

Movement	NB
Directions Served	LTR
Maximum Queue (ft)	34
Average Queue (ft)	13
95th Queue (ft)	32
Link Distance (ft)	530
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 10

Appendix D

Oakdale Sewer Service Agreement

COOPERATIVE AGREEMENT BETWEEN
THE CITY OF OAKDALE AND THE CITY OF LAKE ELMO FOR THE CONSTRUCTION COSTS OF SANITARY SEWER LIFT STATION IMPROVEMENTS

This COOPERATIVE AGREEMENT ("the Agreement"), is made and entered into this 18th day of August, 2021 (the "Effective Date"), by and between the City of Oakdale ("Oakdale"), a Minnesota municipal corporation, and the City of Lake Elmo ("Lake Elmo"), a Minnesota municipal corporation.

RECITALS

WHEREAS, Lake Elmo has requested, by mutual agreement with Oakdale, to add future sanitary sewer flows from 180-acres of undeveloped land ("Property") in Lake Elmo near Ideal Avenue and County Road 14, which is proposed to be developed with industrial, commercial, and residential uses; and

WHEREAS, the sewage from the Property would flow to Oakdale's existing Lift Station 6 located at Ideal Avenue and Stillwater Boulevard in Oakdale's Sewer District 8, which then flows by gravity to Oakdale's Sewer Districts 9, 11, 7, 12, 15, and 17; and

WHEREAS, Oakdale intends to make improvements to its sanitary sewer system on Stillwater Boulevard, including relocation of Lift Station 6 and improvements to related pumps, wet wells, force mains, and other sanitary sewer infrastructure ("Project"); and

WHEREAS, Oakdale and Lake Elmo desire to share in the costs of the Project; and

WHEREAS, this Agreement is the result of a cooperative effort between Oakdale and Lake Elmo to determine the appropriate method to facilitate Oakdale's construction of the Project and Oakdale and Lake Elmo's share in the costs of the Project; and

WHEREAS, Lake Elmo and Oakdale intend to enter into a future cooperative agreement ("Sanitary Sewer Service Agreement") addressing ongoing obligations, including establishing certain responsibilities and charges for Lake Elmo to pay to Oakdale for such future sanitary sewer flows; and

WHEREAS, if Lake Elmo does not enter into the Sanitary Sewer Agreement, Lake Elmo is willing to reimburse Oakdale for 100% of the costs associated with redesigning the Project to serve only Oakdale.

NOW THEREFORE, Oakdale and Lake Elmo agree as follows:

AGREEMENT

1. PURPOSE

The purpose of this Agreement is set forth in the above recitals, which are incorporated by reference as if fully set forth herein, and shall consist of this Agreement, Exhibit A (the "Lift Station 6 Site Plan") and Exhibit B ("Lift Station 6 Improvements and Cost Estimates").

2. PLANS AND SPECIFICATION PREPARATION

Oakdale shall be responsible for the construction of the Project and the preparation of all plans and specifications for the Project, including but not limited to, compliance with all applicable laws, standards, and policies and obtaining all approvals required in formulating the bid specifications for all components of this Project.

3. ADVERTISEMENT AND AWARD OF CONTRACT

After plans and specifications have been approved and all permits and approvals have been obtained by Oakdale, Oakdale shall advertise for construction bids and, upon concurrence by the City of Lake Elmo, shall award the contract to the lowest responsible bidder.

4. CONSTRUCTION ADMINISTRATION, INSPECTION, OBSERVATION, AND TESTING

Oakdale shall be responsible for the construction administration, inspection, and for the observation and testing for all construction items.

5. COST PARTICIPATION AND ESTIMATED COSTS

The total estimated Project cost is $893,000 as set forth in Exhibit B of this Agreement. Lake Elmo's share of the Project construction costs shall be 30% and Oakdale's share shall be 70%. The total estimated Project cost and share attributable to Lake Elmo and payable to Oakdale are merely estimated and a final reconciliation of construction costs as set forth in Section 6 below shall be completed at the end of the Project.

In lieu of the above costs, if Lake Elmo does not enter into the Sanitary Sewer Agreement, Lake Elmo shall reimburse Oakdale for 100% of the costs associated with redesigning the Project to serve only Oakdale.

6. PAYMENT

A. Construction

I. After Oakdale has awarded the construction contract, Oakdale shall update Exhibit B to conform the Exhibit to the amounts in the awarded bid and shall invoice Lake Elmo ten percent (10%) of Lake Elmo's estimated construction

costs based on the updated Exhibit B.

II. During construction, Oakdale shall submit to Lake Elmo partial estimates of work performed under the construction contract and Lake Elmo shall pay to Oakdale its share of the partial estimates.

III. Upon substantial completion of the work, Oakdale shall submit to Lake Elmo a final invoice and final reconciliation of costs. The reconciliation will add or subtract adjustments for liquidated damages pursuant to Section 8 of this Agreement and previous Project cost payments made by Lake Elmo to Oakdale. Lake Elmo shall pay its remaining share of the final invoice and final reconciliation of costs.

B. In the event that Lake Elmo pays more in-advance than the actual cost of Lake Elmo's portion of the Project, Oakdale shall refund without interest the amount to Lake Elmo.

C. Lake Elmo shall pay one hundred percent (100%) of an invoice amount within thirty (30) days of receipt.

7. CONSTRUCTION CONTRACT CHANGES

Any modifications or additions to the final approved plans or specifications shall be made part of the construction contract through a written amendment to the construction contract, but only after concurrence by Lake Elmo's designated project manager and the cost for such changes shall be appropriated as set forth in Section 5 of this Agreement. Lake Elmo's concurrence shall be received upon request and may not be unreasonably conditioned, withheld, or delayed.

8. LIQUIDATED DAMAGES

Any liquidated damages assessed to the contractor in connection with the work performed on the Project shall be shared by Oakdale and Lake Elmo in the following proportion: The respective total share of construction work to the total construction cost without any deduction for liquidated damages.

9. CIVIL RIGHTS AND NON-DISCRIMINATION

The provisions of Minnesota Statutes, Section 181.59 and of any applicable ordinance relating to civil rights and discrimination shall be considered part of this Agreement as if fully set further herein and shall be part of any Agreement entered into by the parties with any contractor subcontractor, or material suppliers.

10. WORKERS COMPENSATION

It is understood and agreed that any and all employees of Lake Elmo and all other persons employed by Lake Elmo in the performance of this Agreement shall not be considered employees of Oakdale. Any and all claims that may or might arise under the Worker's Compensation Act of the State of Minnesota on behalf of said employees while so engaged and any and all claims made by any third parties as a consequence of any act or omission on the part of said Lake Elmo

employees while so engaged on any of the construction or construction engineering work or services to be rendered herein shall in no way be the obligation or responsibility of Oakdale.

11. INDEMNIFICATION

A. Oakdale agrees that it will defend, indemnify, and hold harmless Lake Elmo against any and all liability, loss, damages, costs, and expenses which Lake Elmo may hereafter sustain, incur, or be required to pay by reason of any negligent act by the Oakdale, its agents, officials, officers, or employees during the performance of this Agreement.

B. Lake Elmo agrees that it will defend, indemnify, and hold harmless the Oakdale against any and all liability, loss, damages, costs, and expenses which Oakdale may hereafter sustain, incur, or be required to pay by reason of any negligent act by Lake Elmo, its agents, officials, officers, or employees during the performance of this agreement.

C. To the fullest extent permitted by law, actions by the parties to this Agreement are intended to be and shall be construed as a "cooperative activity." It is the intent of the parties that they shall be deemed a "single governmental unit" for the purposes of liability, as set forth in Minnesota Statutes, Section 471.59, subdivision 1a (b). The parties to this Agreement are not liable for the acts or omissions of another party to this Agreement except to the extent they have agreed in writing to be responsible for the acts or omissions of the other parties as provided for in Minnesota Statutes, Section 471.59, subdivision 1a.

D. Each party's liability shall be governed by the provisions of Minnesota Statutes, Chapter 466 and other applicable law. The parties agree that liability under this Agreement is controlled by Minnesota Statutes, Section 471.59, subdivision 1a and that the total liability for the parties shall not exceed the limits on governmental liability for a single unit of government as specified in Minnesota Statutes, Section 466.04, subdivision 1(a).

12. DATA PRACTICES

All data collected, created, received, maintained, disseminated, or used for any purposes in the course of this Agreement is governed by the Minnesota Government Data Practices Act, Minnesota Statutes Section 13.01, et seq. or any other applicable state statutes and state rules adopted to implement the Act, as well as state statutes and federal regulations on data privacy.

13. TERM AND TERMINATION

This Agreement is effective as of the Effective Date indicated above and shall terminate upon completion of reimbursement of costs by Lake Elmo or upon mutual agreement of the parties.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the Effective Date.

OAKDALE

Paul Reinke, Mayor

10/7/21

Date

Christina Volkers, City Administrator

Date

CITY OF LAKE ELMO

Charles Cadenhead, Mayor

8/18/2021

Date

Kristina Handt, City Administrator

8/18/21

Date

Exhibit A - Lift Station 6 Site Plan

November 18, 2020

1:1,000

Exhibit B - Cost Estimate

Oakdale, MN
Lift Station 6 Improvements
SEH No. 157611
Date: 12-18-20

Cost Esimate

Item No.	Item	Quantity	Units	Unit Cost	Total Cost
	PROCESS				
1	Flygt Triplex Submersible Pump System, 1,100 gpm @ 116' TDH at 60 hz, (3) 2in guiderail	1	LS	$ 120,000	$ 120,000
2	Remove Existing Lift Station	1	LS	$ 20,000	$ 20,000
3	Bypass/Temporary Sewer Pumping/connections	1	LS	$ 6,000	$ 6,000
4	12" PVC Sanitary Sewer	200	LF	$ 75	$ 15,000
5	Connection to Existing Forcemain	1	LS	$ 3,000	$ 3,000
6	10" DIP Force Main	250	LF	$ 80	$ 20,000
7	Fittings	1	LS	$ 9,500	$ 9,500
8	8" Plug Valve	4	EA	$ 1,200	$ 4,800
9	8" Swing Check Valve, Lever and Weight	3	EA	$ 1,600	$ 4,800
	COATINGS				$ -
10	Coatings	691	SF	$ 15	$ 10,365
	STRUCTURAL				$ -
11	Ballast Fill and Grout	9	CY	$ 900	$ 8,100
12	9ft dia precast wetwell	33	LF	$ 1,600	$ 52,800
13	9ft dia precast wetwell - Base slab	2	LF	$ 2,500	$ 5,000
13	9ft dia precast valve vault	14	LF	$ 1,600	$ 22,400
14	Sanitary MH	20	LF	$ 450	$ 9,000
	CIVIL				$ -
15	Traffic Control	1	LS	$ 15,000	$ 15,000
16	Site Grading & Restoration	1	LS	$ 50,000	$ 50,000
17	Access Drive	1	LS	$ 14,000	$ 14,000
18	Site Fencing	250	LF	$ 40	$ 10,000
19	18" RCP Culvert	90	LF	$ 60	$ 5,400
	GEOTECHNICAL				$ -
20	Excavation	1	LS	$ 15,000	$ 15,000
21	Dewatering	1	LS	$ 10,000	$ 10,000
22	Sheeting & Bracing	1	LS	$ 20,000	$ 20,000
	HARDWARE				$ -
23	30in x 30in Aluminum Hatch	1	EA	$ 1,700	$ 1,700
24	78in x 30in Aluminum Hatch	1	EA	$ 2,625	$ 2,625
	ELECTRICAL				$ -
25	Installation	1	LS	$ 15,000	$ 15,000
26	Engine Generator, 100kW	1	LS	$ 80,000	$ 80,000
27	Control Panel, VFD, DWDT filter, Pressure Transducer (4) Floats, Battery Backup, TVSS	1	LS	$ 75,000	$ 75,000
	Subtotal				$ 534,490
	+ 10% Contingencies				$ 62,449
	Total Estimated Construction Cost				$ 687,000
	+ 30% Engr, Adm, Indirect Cost				$ 206,100
	Total Estimated Project Cost				**$ 893,000**

COOPERATIVE SERVICE AGREEMENT BETWEEN THE CITY OF OAKDALE AND THE CITY OF LAKE ELMO FOR THE COSTS ASSOCIATED WITH PROVIDING SANITARY SEWER SERVICES

This COOPERATIVE SERVICE AGREEMENT ("the Agreement"), is made and entered into this 21st day of October, 2021 (the "Effective Date"), by and between the City of Oakdale ("Oakdale"), a Minnesota municipal corporation, and the City of Lake Elmo ("Lake Elmo"), a Minnesota municipal corporation.

RECITALS

WHEREAS, Lake Elmo has requested, by mutual agreement with Oakdale, to add future sanitary sewer flows from 180-acres of undeveloped land ("Property") in Lake Elmo near Ideal Avenue and County Road 14, which is proposed to be developed with industrial, commercial, and residential uses; and

WHEREAS, the sewage from the Property would flow to Oakdale's existing Lift Station 6 located at Ideal Avenue and Stillwater Boulevard in Oakdale's Sewer District 8, which then flows by gravity through Oakdale's Sewer Districts 9, 11, 7, 12, 15, and 17; and

WHEREAS, prior to adding such future sanitary sewer flows, Oakdale intends to make improvements to its sanitary sewer system on Stillwater Boulevard, including relocation of Lift Station 6 and improvements to related pumps, wet wells, force mains, and other sanitary sewer infrastructure ("Project"); and

WHEREAS, Oakdale and Lake Elmo intend to enter into a cooperative agreement to facilitate Oakdale's construction of the Project and Oakdale and Lake Elmo's share in the costs of the Project; and

WHEREAS, Oakdale and Lake Elmo also intend to enter into this separate Agreement to administer the ongoing obligations related to the Project, including to establish certain responsibilities and charges for Lake Elmo to pay to Oakdale for such future sanitary sewer flows.

NOW THEREFORE, Oakdale and Lake Elmo agree as follows:

AGREEMENT

1. PURPOSE

The purpose of this Agreement is set forth in the above recitals, which are incorporated by reference as if fully set forth herein, and shall consist of this Agreement and Exhibit A ("Lake Elmo Sewer Cost Allocation Concept) and Exhibit B ("Sewer Cost Allocation to Serve 180 Acres").

2. SANITARY SEWER SERVICE

Oakdale agrees to allow Lake Elmo to connect to Oakdale's sanitary sewer system upon completion of the Project in order to allow Lake Elmo to provide sanitary sewer service to the Property.

3. COST PARTICIPATION AND ESTIMATED CHARGES AND ADJUSTMENTS

Lake Elmo shall be responsible for payment of an annual charge to Oakdale for adding future sanitary sewer flows related to the Property. Lake Elmo shall also be responsible for the payment of any annual "true-up" adjustment to Oakdale. The estimated charges and adjustment attributable to Lake Elmo and payable to Oakdale are as set forth in Exhibit A of this Agreement. The charges and annual adjustment listed in Exhibit A are merely estimates and a final reconciliation of such charges and adjustments below shall be completed annually as set forth in Section 4.

4. PAYMENT

A. Upon completion of the Project, Oakdale shall update Exhibit A to conform the Exhibit to the estimated annual charge.

B. Each year, Oakdale shall examine sanitary sewer flows related to the Property and invoice Lake Elmo for the charge.

C. Lake Elmo shall pay one hundred percent (100%) of an invoice amount within thirty (30) days of receipt.

5. MAINTENANCE

Oakdale and Lake Elmo shall properly maintain its sanitary sewer systems according to state law to provide the Property with sanitary sewer service. Upon notification of a possible issue with sanitary sewer service related to this Project, both parties shall immediately inspect their respective sanitary sewer systems to determine the cause of the issue and any required maintenance. Each party shall be responsible for their own maintenance costs regardless of the cause of the issue.

6. INDEMNIFICATION

A. Oakdale agrees that it will defend, indemnify, and hold harmless Lake Elmo against any and all liability, loss, damages, costs, and expenses which Lake Elmo may hereafter sustain, incur, or be required to pay by reason of any negligent act by the Oakdale, its agents, officials, officers, or employees during the performance of this Agreement.

B. Lake Elmo agrees that it will defend, indemnify, and hold harmless the Oakdale against any and all liability, loss, damages, costs, and expenses which Oakdale may hereafter sustain, incur, or be required to pay by reason of any negligent act by Lake Elmo, its

agents, officials, officers, or employees during the performance of this agreement.

C. To the fullest extent permitted by law, actions by the parties to this Agreement are intended to be and shall be construed as a "cooperative activity." It is the intent of the parties that they shall be deemed a "single governmental unit" for the purposes of liability, as set forth in Minnesota Statutes, Section 471.59, subdivision 1a (b). The parties to this Agreement are not liable for the acts or omissions of another party to this Agreement except to the extent they have agreed in writing to be responsible for the acts or omissions of the other parties as provided for in Minnesota Statutes, Section 471.59, subdivision 1a.

D. Each party's liability shall be governed by the provisions of Minnesota Statutes, Chapter 466 and other applicable law. The parties agree that liability under this Agreement is controlled by Minnesota Statutes, Section 471.59, subdivision 1a and that the total liability for the parties shall not exceed the limits on governmental liability for a single unit of government as specified in Minnesota Statutes, Section 466.04, subdivision 1(a).

7. DATA PRACTICES

All data collected, created, received, maintained, disseminated, or used for any purposes in the course of this Agreement is governed by the Minnesota Government Data Practices Act, Minnesota Statutes Section 13.01, et seq. or any other applicable state statutes and state rules adopted to implement the Act, as well as state statutes and federal regulations on data privacy.

8. SEVERABILITY

In the event that any provision of this Agreement shall be held invalid, illegal, or unenforceable by any court of competent jurisdiction, such holding shall pertain only to such provision and shall not invalidate or render unenforceable any other provision of this Agreement.

9. TERM AND TERMINATION

This Agreement is effective as of the Effective Date indicated above and shall terminate upon thirty days' notice by either party or upon mutual agreement of the parties.

10. NOTICES

Any notice or correspondence to be given under this Agreement shall be deemed to be given if delivered personally or by mailed postage prepaid, certified mail, return receipt requested:

(a) as to Oakdale: City of Oakdale
1584 Hadley Avenue North
Oakdale, MN 55128

(b) as to Lake Elmo: City of Lake Elmo
3800 Laverne Ave N
Lake Elmo, MN 55042

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the Effective Date.

OAKDALE

Paul Reinke, Mayor

10/07/21
Date

Christina Volkers, City Administrator

Date

CITY OF LAKE ELMO

Charles Cadenhead, Mayor

9/21/2021
Date

Kristina Handt, City Administrator

9/21/21
Date

Exhibit A

bakertilly

Memo

To:	City of Oakdale - Brain Bachmeier, P.E.
From:	Nick Dragisich, P.E.
Date:	January 24, 2021
Subject:	Lake Elmo Sanitary Sewer Service Cost Allocation

We have completed a cost allocation model for the proposed future flows of the Lake Elmo sanitary sewer service from 180-acres of undeveloped land near Ideal Avenue and County Road 14 into the City of Oakdale's wastewater collection system. The purpose of this memorandum is to provide an explanation of the cost allocation model and methodology. The allocation model is built in Microsoft® Excel and was set up to enable the City to make changes in key input variables to accommodate any changes that may occur as the project moves forward and in future years once the development is completed

In my experience, the best way to provide an understanding of the model is to walk through each worksheet explaining the logic and variables.

"Summary" Worksheet

As the name states, this worksheet summarizes the cost allocations from each of the individual worksheets in the model.

- Rows 7 through 66 summarize the actual and budgeted expenditure by line item from Sewer "Administration, Maintenance LS and Collection System worksheets. Columns G & H summarize actual data from the two most recent completed previous years. Column I has the budget for the past year and Column J has the budget for the current year.
- Rows 69 and 70 show the Metropolitan Council's Municipal Wastewater Conveyance Charge (MWCC) volumes. Most recent actual is in Cell H69 and the current budgeted volume is in Cell G69
- Row 70 has the Lake Elmo portion of the MWCC charge volume. The most recent actual is in Cell H70 and the current budgeted volume is Cell G70
- Rows 72 through 76 have the asset information including total inch-miles of collection pipes in the Oakdale sanitary sewer system. Inch-miles are the diameter of each pipe times its length in miles so that a 12-inch diameter pipe one mile long would be 12 inch-miles
    - The most recent actual inch-miles are in Cell H73 and the inch-miles for the current budget year are in Cell G73.

  - The inch miles of pipe that carry flow from Lake Elmo are in Cells H74 for the most recent completed year and in Cell G74 for the current budget year.
  - Depreciation expenses for assets excluding lift stations are in Cells H75 for the most recent completed year and in Cell G75 for the current budget year. These expenses will be allocated to Lake Elmo based on the volume of wastewater that will flow through the Oakdale sewer system.
  - Depreciation expenses for lift stations are in Cells H76 for the most recent completed year and in Cell G76 for the current budget year. The depreciation expenses for the lift stations pumping Lake Elmo wastewater flow will be allocated based on the capacity needed for this flow.
  - Lift station capacity in GPM for the most recent completed year is in H77and in Cell G77 for the current budget year.
  - Lift station capacity used by Lake Elmo in GPM for the most recent completed year is in H78 and in Cell G78 for the current budget year.
- The table in Rows 81 through 89 show the summary of the allocated expenses from the other worksheets in the Model for the most recent completed year. Rows 88 and 89 provide a "true up' to reconcile the amount charged based on budgeted costs to the actual amount of expenses incurred.
- The table in Rows 92 through 100 show the summary of the allocated expenses from the other worksheets in the Model for the current budget year. Row 99 provides the "true up' adjustment from row 89 to adjust the budget year charge to the actual amount of expenses incurred in the most recent completed year plus the current year budget.

"Data Input" Worksheet

This worksheet is where all the relevant data needed for the cost allocations is inputted. The data requested is input into the blue-colored cells. The data to be input includes:

- Row 13 asks for MWCC sewer charge volumes for the most recent completed year and for the current budget year.
- Row 14 asks for the Lake Elmo portion of these flows
- Rows 16 through 31 asks for data about the Oakdale collection system
  - Total inch-miles of sewer collection pipe for the most recent completed year are input in Cell C17 and for the current budget year in Cell D17
  - Inch-miles of sewer collection pipe conveying Lake Elmo flow for the most recent completed year are input in Cell C18 and for the current budget year in Cell D18
  - Rows 22 through 30 has cells to input the sewer collection pipe capacity in GPM) and the inch miles of pipe for each sewer district that Lake Elmo wastewater will flow through. Data for the most recent completed year is input in Cells C22 through D30 and data for the current budget year is input in Cells E22 through F30. The table is set up with the currently known sewer districts, but includes two rows (Rows 29 and 30) where additional districts can be added if flow is routed differently
- Rows 33 through 65 has input cells for data about lift stations.

- Cells C34 and D34 ask for the total capacity of all lift stations in the Oakdale sewer system. The total capacity for the most recent completed year is input in Cell C34 and for the current budget year in Cell D34
- Rows 37 through 41 ask for data about lift stations where Lake Elmo flow will pass through and be pumped. The data requested includes the capacity of each lift station in GPM, the capacity used by Oakdale and the capacity used by Lake Elmo for the most recent completed year and for the current budget year. The initial concept provides for Lake Elmo flow to pass through Lift Station 6 in District 8 and Lift Station 9 in District 12. Two rows are provided in case Lake Elmo flow is routed through additional lift stations. Data for the most recent completed year is input in Cells C38 through E41 and for the current budget year in Cells F38 through H41.
- Rows 44 through 48 requests data about the depreciation expenses for lift stations conveying Lake Elmo flow. Data for the most recent completed year for each lift station listed in Cells B45 through B48 is input in Cells C45 through C48) and for the current budget year in Cells D45 through D48.
- Depreciation expenses for lift stations not conveying Lake Elmo flow is input in Rows 51 through 64. Data for the most recent completed year for each lift stion listed in Cells B51 through B64 is input in Cells C51 through C64 and for the current budget year in Cells D51 through D64.

- Row 68 allows a return on investment rate to be input. The percentage return on investment rate for the most recent completed year is input in Cell C68 and for the current budget year in Cell D68. The percentage return on investment rate is used to provide a return to the City of Oakdale for the use of its sewer system by City of Lake Elmo.

"Sewer Administration" Worksheet

This worksheet allocates the costs of the Sewer Administration function.

- Rows 7 through 66 summarize the actual and budgeted expenditures by line item. Columns G & H have actual data from the two most recent completed previous years Column I has the budget for the past year and Column J has the budget for the current year.
- The allocation of costs takes place in the table in Rows 84 through 101 for the current budget year and in rows 104 through 121 for the most recent completed year.
- The allocation of all the expenses except depreciation is done on the basis of flow volumes. The percent allocated to Lake Elmo in each year is the Lake Elmo portion of the MWCC charge volume divided by the total MWCC charge volume for Oakdale for the year being allocated.
- The allocation of depreciation expenses other than lift stations is based on inch-miles of pipe. The percentage allocated to Lake Elmo in each year is the total inch miles of pipe with Lake Elmo flow divided by the total inch-miles of pipe in the Oakdale collection system for the year being allocated.
- The allocation of depreciation expense for lift stations each year is based on capacity of lift stations conveying Lake Elmo flow. The percentage allocated to Lake Elmo each year is the capacity in GPM used by Lake Elmo divided by the total capacity in GPM of lift stations conveying Lake Elmo flow in that year. This percentage is multiplied by the depreciation expense for the lift stations conveying Lake Elmo flow for the year being allocated.

"Maintenance LS" Worksheet

This worksheet allocates the costs of the Lift Stations.

- Rows 7 through 66 summarize the actual and budgeted expenditure by line item. Columns G & H have actual data from the two most recent completed previous years. Column I has the budget for the past year and Column J has the budget for the current year.
- Rows 70 through 77 show the allocation of lift station capacity for the current budget year and the most recent completed year. The allocation is based on the capacity of lift stations conveying flow which includes Lake Elmo flow. The allocation basis is the sum of the lift station capacity used by Lake Elmo for each lift station to the total lift station capacity of all the lift stations conveying Lake Elmo flow.
- The allocation of costs takes place in the table in Rows 84 through 101 for the current budget year and in rows 104 through 121 for the most recent completed year.
- The allocation of all the expenses is done on the basis of the capacity of lift stations in the system. The percentage allocated to Lake Elmo is the capacity in GPM used by Lake Elmo divided by the total capacity in GPM of all lift stations for the year in which expenses will be allocated. This percentage is multiplied by the lift station expense for either the current budget years (Rows 84 through 101) or the most recent completed year (Rows 104 through 121).

"Collection System" Worksheet

This worksheet allocates the costs of the Collection System.

- Rows 7 through 66 summarize the actual and budgeted expenditure by line item. Columns G & H have actual data from the two most recent completed previous years. Column I has the budget for the past year and Column J has the budget for the current year.
- Rows 70 through 81 show the allocation of the collection system for the current budget year and the most recent completed year. The allocation is based on two factors. The first is the percent of inch miles of pipe conveying Lake Elmo flow to the total inch-miles of pipe in the collection system and the second is the percent of each districts pipe capacity that is used by Lake Elmo flow. The allocated cost is the sum of the percent of total inch miles of collection system pipe in each district times the percent of capacity used by Lake Elmo in each district times costs allocated.
- The allocation of costs takes place in the table in Rows 84 through 101 for the current budget year and in rows 104 through 121 for the most recent completed year.

As noted above, the sum of the Administration, Lift Station Maintenance and Collection System costs are summarized on the "Summary" worksheet, it total, in rows 81-100.

Exhibit B

Summary

					Actual 2018	Actual 2019	Adopted 2020	Adopted 2021
Personnel Services								
725	5	550	4100	Wages-Regular	$ 141,474	$ 152,099	$ 171,588	$ 400,000
725	5	550	4100	Leave Time	$ 43,682	$ 45,077	$ 47,200	$ -
725	5	550	4111	Wages-Overtime	$ 12,952	$ 10,014	$ 1,807	$ 15,000
725	5	550	4115	Wages-Part Time	$ -	$ -	$ 750	$ -
725	5	550	4120	Wages-Temporary	$ 2,919	$ 3,224	$ -	$ -
725	5	550	4140	Employer PERA	$ 14,535	$ 15,841	$ 14,219	$ 23,500
725	5	550	4145	Employer FICA	$ 14,711	$ 15,669	$ 15,103	$ 24,500
725	5	550	4150	Employer Insurance	$ 58,652	$ 62,229	$ 68,000	$ 86,100
725	5	550	4154	Workmen's Compensation In	$ 46,970	$ 49,685	$ 82,500	$ 82,500
725	5	550	4168	Standby Pay	$ 6,555	$ 7,721	$ 7,500	$ -
Personnel Services					$ 342,430	$ 361,559	$ 388,467	$ 591,600
Materials and Supplies								
725	5	550	4200	Office Supplies	$ 280	$ 303	$ 250	$ -
725	5	550	4209	In House Copying	$ 42	$ -	$ 550	$ -
725	5	550	4210	Printing, Binding & Copying	$ 485	$ 310	$ 700	$ -
725	5	550	4211	Operating Supplies	$ 3,056	$ 1,928	$ 3,000	$ 4,000
725	5	550	4230	Uniforms & Clothing	$ 5,327	$ 5,299	$ 6,000	$ 6,000
725	5	550	4240	Repair & Maintenance Supp	$ 45,100	$ 41,700	$ 37,700	$ 45,000
725	5	550	4241	Equipment Parts	$ 964	$ 1,303	$ 4,000	$ -
725	5	550	4250	Small Tools	$ 1,051	$ 2,008	$ 3,750	$ 32,500
Materials and Supplies					$ 56,305	$ 52,851	$ 55,950	$ 87,500
Contractual Services								
725	5	550	4300	Professional Services	$ 11,500	$ 10,500	$ 18,000	$ 80,000
725	5	550	4301	Other Contractual Service	$ 68,584	$ 50,212	$ 65,000	$ 2,500
725	5	550	4307	Charges from General	$ 525,000	$ 525,000	$ 525,000	$ 575,000
725	5	550	4324	License & Permits Fees	$ -	$ -	$ 450	$ -
725	5	550	4330	Postage & Meter Fees	$ 4,621	$ 4,618	$ 5,000	$ 5,000
725	5	550	4331	Telephone 6601	$ 6,601	$ 5,912	$ 5,000	$ 5,000
725	5	550	4332	Radio Services	$ 1,782	$ 1,841	$ 336	$ 2,000
725	5	550	4340	Travel Expenses	$ 251	$ 187	$ 500	$ -
725	5	550	4344	Books & Publications	$ -	$ -	$ 500	$ 500
725	5	550	4345	Dues & Subscriptions	$ 512	$ 450	$ 900	$ 900
725	5	550	4346	Meeting, Conferences & Schooling	$ 612	$ 1,491	$ 4,000	$ 4,500
725	5	550	4350	Advertising	$ -	$ -	$ 1,500	$ -
725	5	550	4360	Legal & Public Notices/Ad	$ -	$ -	$ 200	$ -
725	5	550	4370	Insurance - General Liability	$ 68,587	$ 49,355	$ 97,500	$ 97,500
725	5	550	4380	Electric Service	$ 65,093	$ 59,387	$ 75,000	$ 65,000
725	5	550	4390	MWCC Sewer Charges	$ 2,354,100	$ 2,283,251	$ 2,328,014	$ 2,374,574
Contractual Services					$ 3,107,243	$ 2,992,204	$ 3,126,900	$ 3,212,474
Capital and Other								
725	5	550	4400	Repair & Maintenance	$ 37,726	$ 49,088	$ 35,000	$ 45,000
725	5	550	4402	Repair & Maintenance Equipment	$ -	$ 292	$ 3,000	$ -
725	5	550	4510	Rental Building	$ 75,000	$ 75,000	$ 75,000	$ 75,000
725	5	550	4700	Capital Outlay Other	$ -	$ 15,345	$ 15,000	$ 15,000
725	5	550	4701	Machinery & Equipment	$ -	$ 855	$ 25,000	$ 5,000
725	5	550	4730	Depreciation	$ 521,252	$ 508,732	$ 550,000	$ 550,000
725	5	550	4900	Transfers	$ 400,000	$ 400,000	$ 400,000	$ 400,000
725	5	550	4950	Refunds	$ 22,450	$ 52,535	$ -	$ -
Capital and Other					$ 1,056,428	$ 1,101,847	$ 1,103,000	$ 1,090,000
Summary Total					$ 4,562,406	$ 4,508,461	$ 4,674,317	$ 4,981,574

	Budget 2021	Actual 2019
MWCC Sewer Charge Volume (Millions of Gallons)	932.16	932.16
Lake Elmo portion of MWCC Charge Volume (Millions of Gallons)	43.80	43.80

Assets used by Lake Elmo	Pipe	Pipe
Total Inch Miles of Collection Pipes	1,152	1,152
Inch miles of Collection Pipes used by Lake Elmo	105	105
Depreciation expenses excluding Lift Stations	$ 458,991	$ 417,723
Depreciation Expenses for Lift Stations)	$ 91,009	$ 91,009
Lift Station Capacity	9,000	9,000
Capacity used by Lake Elmo	500	500

Lake Elmo Allocations	Actual 2019
Sewer Administration	$ 193,635
Maintenance Lift Stations	$ 12,662
Collection system	$ 2,471
Subtotal Expenses	$ 208,768
Return on investment	$ 8,351
Lake Elmo Actual Allocation	$ 217,119
Lake Elmo Budget Allocation 2019	$ 205,000
True Up Amount	$ 12,119

Lake Elmo Allocations	Budget 2021
Sewer Administration	$ 224,424
Maintenance Lift Stations	$ 8,750
Collection system	$ 1,561
Subtotal Expenses	$ 234,735
Return on investment	$ 9,389
Lake Elmo Allocation	$ 244,124
True up amount for 2019	$ 12,119
Total Lake Elmo Budget Allocation 2021	$ 256,243

Appendix E

Responses to Agency and Public Comments

1. Introduction

Pursuant to Minnesota Rules, part 4410.3610, subpart 5c, 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 February 1, 2022, and comments were accepted through March 3, 2022. Five comment letters were received from government agencies and eight comment letters from the public. Responses to those comments are included in the following sections, and copies of the comment letters are included in Appendix F.

2. Minnesota State Historic Preservation Office

Comment	Response
Historic Properties (Item 14)	
Based on our review of the project information, we conclude that there are no properties listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties located in the area will be affected by this project.	Comment noted.

3. Minnesota Department of Natural Resources

Comment	Response
Land Use (Item 9)	
Page 16, Lake Elmo 2040 Comprehensive Plan. Please note that the reconstruction of the sanitary sewer lift station will need a separate DNR Water Appropriation Permit if the dewatering for the reconstruction will exceed 10,000 gallons per day, or one million gallons per year. The DNR Permit Application should be submitted electronically using the Minnesota Permitting and Reporting System (MPARS) website at: https://webapps11.dnr.state.mn.us/mpars/public/authentication/login	Comment noted. A DNR Water Appropriation Permit will be applied for, if necessary.
Page 17, Water Supply Plan. We appreciate that the development of this area has been reflected in Part 1 of the City of Lake Elmo Water Supply Plan.	Comment noted.

Comment	Response
Water Resources (Item 11)	
Page 32, Wastewater. If Scenario 4 is ultimately selected and the use of Subsurface Sewage Treatment Systems (SSTS) becomes necessary, please be aware that groundwater mounding can occur beneath septic system drain fields and poses a risk similar to infiltration basins within areas prone to surface karst feature development.	Comment noted.
Page 33, Stormwater. The DNR recommends that stormwater features be used to irrigate landscaping in the AUAR area as a means to reduce groundwater use, especially in an area with known groundwater contamination. For example, please refer to the Cities of Hugo, Medina, and Minnetrista, all of which successfully reuse stormwater for irrigation purposes. Please note that the use of stormwater from constructed stormwater features does not require a DNR Water Appropriation Permit.	Comment noted. Water reuse to irrigate lawn and landscaping features will be considered for future development in the area.
Page 33, Stormwater. We recommend that the proposed developments use native seed mixes and plants in stormwater features and landscaping in order to provide pollinator habitat. This is especially important since the federally endangered Rusty-patched Bumble Bee has been documented within the vicinity of the project area. The Board of Soil and Water Resources' website contains many great resources for choosing seed mixes and establishing native plants.	Comment noted. The project proposers will be encouraged to use native seed mixes and plants to promote pollinator habitat within the landscaped areas.

Comment	Response
Page 33, Stormwater. The planned increase in impervious surfaces will also increase the amount of road salt used in the project rea. Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. There are a variety of classes available for road applicators, sidewalk applicators, and property managers. More information and resources can be found at this website. Many winter maintenance staff who have attended the Smart Salting training – both from cities and counties and from private companies – have used their knowledge to reduce salt use and save money for their organizations. We also encourage cities and counties to consider how they may participate in the Statewide Chloride Management Plan and provide public outreach to reduce the overuse of chloride. Here are some educational resources for residents as well as a sample ordinance regarding chloride use.	The developer will look for methods to minimize chloride use and improve treatment of stormwater runoff to minimize potential impacts to downstream waters. The project will comply with all city, watershed district, county, and state rules for stormwater management, and chloride use will be addressed in the Stormwater Management Plan that will be reviewed by the City for compliance.
Page 34, Water Appropriation. Please note that the details of the future of the water supply system for the City of Lake Elmo will be subject to the decisions of the Ramsey County Court and the State Legislature concerning the White Bear Lake Court Decision.	Comment noted.
Page 37, Stormwater. Because the project area is located in an area prone to surface karst feature development, we urge caution regarding the use of infiltration basins. If infiltration basins are found to be suitable, we recommend verifying infiltration design rates by performing an infiltration test at each location prior to construction of the stormwater feature in order to reduce the chance of infiltration basin failure. We appreciate that the construction of infiltration basins will only take place on dry soils and that measures will be taken to preserve soil structure and reduce compaction.	Comment noted.
Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Item 13)	

Comment	Response
Page 46, Rare Features. The DNR concurs that impacts to rare features are unlikely to occur as a result of this project. While impacts to rare features are not anticipated, there is the potential to retain wildlife habitat and reduce fragmentation and loss of habitat by retaining existing groups of trees and wetlands. Opportunities include: the small group of trees on the eastern side of the property that are proposed to be incorporated into a park, the rectangular small chunk of forest on the northwest side of the project area, the small groupings of trees on the south side of 34th Street N along the eastern part of the property (especially nearest to the pond), and the small, younger patch of woods in the northeast corner of the property. In the metro area, retaining forest, even the small and isolated remnants on the landscape, is especially important for wildlife habitat, clean water, and for the recreation/aesthetic values to the residents of Lake Elmo. We encourage the City to learn more about the DNR's School Forest Program, which provides and opportunity to use some of the retained forest as an outdoor classroom in one or more of its schools.	Comment noted.
Page 49, Rare Features. We appreciate that the development will use native seed mixes and plants in landscaping and encourage the City to utilize native plantings to the greatest degree possible.	Comment noted.
Air (Item 16)	
Page 51, Dust and Odors. Should water for dust control be taken from a lake, wetland, river, or stream in volumes that exceed 10,000 gallons of water in a single day, then a DNR Water Appropriation Permit will be needed for the taking of water. Please do not use products containing chloride for dust control in areas that drain to Public Waters.	Comment noted. A DNR Water Appropriation Permit will be applied for, if necessary. Products containing chloride will not be used in areas that drain to Public Waters.

4. Metropolitan Council

Comment	Response
Project Description (Item 6)	
Wastewater (Roger Janzig, 651-602-1119). The AUAR states that of the 190-acre study area, 110 acres lie to the north of 34th Street North. This area is not within the current 2030 MUSA and therefore, not available for extension of wastewater service through the Metropolitan Disposal System. The AUAR refers to an intercommunity wastewater flow agreement with the City of Oakdale for full development of the AUAR to be served with regional sanitary sewer through Oakdale. A copy of the intercommunity wastewater flow agreement should be included in the AUAR.	Comment noted. A copy of the intercommunity wastewater flow agreement will be included in the final AUAR.

Comment	Response
Forecasts (Todd Graham, 651-602-1322). The AUAR discusses four development scenarios: • Scenario 1 includes 1.8 million square feet of nonresidential space (mostly business park) and 400 apartments in mixed use development. • Scenario 2 includes 1.7 million square feet of nonresidential space (mostly business park), 210 apartments in mixed use development, and 180 units in low- and medium density residential. • Scenario 3 includes 2.3 million square feet of nonresidential space (mostly business park) and 56 houses in low-density residential. • Scenario 4, consistent with the current Comprehensive Plan, includes 1.1 million square feet of nonresidential space (business park) on the southern half, and 10 houses, rural residential, on the northern half. The AUAR study site is part of the Transportation Analysis Zone #2351 (north of 34th Avenue) and TAZ #2389 (south of 34th Avenue). TAZ allocations for 2040 have been prepared by the City and were updated following a 2021 plan amendment for the southern portion of the subject site. The TAZ allocation describes: • TAZ #2351 will grow by +4 households and will have zero employment during 2020-2040. • TAZ #2389 will lose -96 households and -310 population; and will grow by +800 jobs during 2020-2040. Should the City pursue scenarios 1, 2, or 3, Lake Elmo would need to request MUSA extension and amend its comprehensive plan. The Metropolitan Council would also expect a households, population, and employment forecast increase; and revised forecast allocations for Transportation Analysis Zones #2351 and #2389. (None of this is needed for Scenario 4).	Comment noted. If the City pursues Scenarios 1, 2, or 3, a MUSA extension and adjustments to forecasts will be requested, and the City will amend its comprehensive plan.

Comment	Response
Land Use (Jake Reilly, 651-602-1822). As stated in the AUAR, scenarios 1 through 3 are not consistent with the City's 2040 Comprehensive Plan. In order to pursue those scenarios, the City would need to submit an amendment to the City's Land Use Plan along with a request for a MUSA extension and adjustments (increases) to forecasts. A Master Plan for the AUAR study area was completed by the City in 2020. Development Scenarios 2 and 3 propose land use changes to the area, including increased density of residential uses. Because the City of Cottage Grove is a Suburban Edge community as described in Thrive MSP 2040, residential densities for new development and redevelopment must be built at a minimum of three units per acre.	Comment noted. If the City pursues Scenarios 1, 2, or 3, the City will submit an amendment to the Land Use Plan and a request for a MUSA extension and adjustments to forecasts.
Natural Resources (Eric Wojchik, 651-602-1330). The development layout in Scenario 2 represents a more compact, efficient use of land and infrastructure, with a mix of uses, therefore preserving areas of open space for wildlife habitat and recreation. The three other scenarios would likely create higher VMT and emissions due to reduced traffic connectivity and less efficient use of the land. These environmental and infrastructure considerations should be taken into account in determining the appropriate development scenario.	Comment noted.

Comment	Response
Transit (Stephanie Baisden, 612-349-7361). No bus stops are located within walking distance of any residential land uses proposed within the various development scenarios and the AUAR does not include enough information to identify if pedestrian facilities are proposed within the development. Additional sidewalks should be considered, as well as providing sidewalks within the proposed development site to facilitate safe pedestrian access. Right-of-way should be set aside for the eventual construction of sidewalks if they are not planned to be constructed with the proposed development. Long-term, the METRO Gold Line is planned to offer all-day transit service between downtown Saint Paul and Woodbury; 3.5 miles south at the Helmo Avenue Station. Additional expansion of the transit system will be considered by means of connecting local bus routes within Lake Elmo to the METRO Gold Line. Given the current and planned transit investments in the area and the lower residential density that exists in this area now, this draft AUAR may have a marginal impact on the existing transit network depending on which development scenario is chosen (but not enough to warrant implementation of new transit service). This draft AUAR should not expect additional expansion of the existing transit network.	Comment noted. As redevelopment proposals come forth for the northern half of the AUAR study area, pedestrian and bicycle facilities will be considered in relation to future development and transit considerations. The City and Project Proposers will coordinate transit options with Met Council as development progresses in the area.
Geology, Soils, and Topography/Land Forms (Item 10)	
Eric Wojchik, 651-602-1330. Item 10b states that earthwork on the study area south of 34th Street North is anticipated to generally balance and be kept onsite. The proposed project will require approximately 500,000 total cubic yards of excavation. This section of the EAW does not include detail or mitigation regarding the steep slopes (12-18% gradient, with some areas exceeding 18% gradient) on the parcel south of 34th Street, which drains to the east. The EAW should consider mitigation to avoid or minimize slope erosion, ensure establishment or retention of stabilizing vegetation, and avoid placement of structures or land alterations near steep slopes. These measures should apply to all four development scenarios.	Comment noted. The proposed development within the study area south of 34th Street N will require compliance with both the City's and Valley Branch Watershed District's erosion and sediment control standards.

5. Minnesota Department of Transportation

Comment	Response
Transportation (Item 18)	
Walking and Biking. Washington County is completing trail connections along CSAH 14/34th St further west under I-694. MnDOT recommends that the development of the study area considers safe and accessible connections to facilities for people walking and biking.	Comment noted. As redevelopment proposals come forth for the northern half of the AUAR study area, pedestrian and bicycle connections will be considered and incorporated into site design.

6. Susan Dunn, Lake Elmo Resident

Comment	Response
I wish to make comment regarding future use of the 190 acres of 3M land by the maintenance building. Scenario #4 is the best. The approved comp plan scenarios. Please do not put truck terminals etc. on that area.	Thank you for the comment.

7. Ann Bucheck, Lake Elmo Resident

Comment	Response
I urge the city council to vote for Development Scenario 4. This land uses includes agricultural, rural residential, public works, and business park. This scenario is the only scenario that is consistent with the adopted Comprehensive Plan. It protects the existing neighborhoods from the more intense development patterns contemplated in the other scenarios. The trip generation forecast is the lowest and will have the least congestion impact on the affected roads and will be the least costly in terms of roadways. Although not addressed, water supply to this area may be affected by the decisions regarding allowance of water supply to any lands within five miles of White Bear Lake. This area is clearly within the five-mile radius and the need for water supply is of paramount importance. It is also unfortunate the AUAR does not show the buried pipelines nor the energy lines that will have an impact on any proposed scenario. The future land use plan as shown in the comprehensive plan continues to be the best plan at this time and should not be changed. Please vote for scenario 4.	Thank you for the comment. Private utilities will be located as development occurs and any potential conflicts will be identified.

8. Ben and Breanna Pepin, Lake Elmo Residents

Comment	Response
We are writing to provide feedback to you on the Cyphers Logistic Park draft AUAR per direction on the Lake Elmo website. Our preference for this area would be that it remains as open as possible, which would ideally mean maintaining it as agricultural land and the public works building. We would prefer there to be no business or residential development in this space. However, if the only path forward is one of the 4 proposed development plans, we would be in favor of the one that develops this space the least and maintains the open and green spaces that exist today, which would appear to be development scenario 4 (agriculture and rural residential). Please keep us updated if there will be specific meetings/sessions where this land use is discussed.	Thank you for the comment.

9. Tom Henderson, Lake Elmo Resident

Comment	Response
I strongly favor Scenario 1. I was contacted and encouraged to write to you in favor of Scenario 4. I believe that #4 is not practical… to attempt to develop and maintain this location as "rural residential" is unrealistic. In my opinion, it should be zoned for commercial and/or industrial due to proximity to the freeway ramps. Maybe a portion could be successful as high density residential.	Thank you for the comment.

10. Dan Novak, Lake Elmo Resident

Comment	Response
The word "criminal activity" isn't even mentioned in the AUAR. 1.1-2.2 x 10^6 ft^2 of business park will bring with it some criminal activity. When I think of what is being proposed, I want to draw an analogy to a truck stop along an interstate. Only this one will be off the beaten path.	Thank you for the comment.
The smell of diesel engines is not mentioned. There are residences of 3 sides of the proposed business park. I feel sorry for the people living on the west side of Ideal Ave. In addition to the train, they now get to bear the noise, lights, and smell of diesel fumes the business park will bring.	Thank you for the comment. As stated in Section 16 of the AUAR, none of the intersections in the AUAR study area exceed the air quality standards criteria in the state of Minnesota.
The intersection of Inwood and Stillwater Blvd., regarding traffic, isn't even mentioned in the AUAR. It looks like they are predicting a 5% increase in traffic volume on Inwood. I live on the corner of Inwood and Ironwood. Right now, today, I often have to wait minutes (yes, minutes), to turn onto Inwood and get back onto Ironwood from Inwood. This proposed business park with 10,000 proposed trips per day, is going to be a traffic nightmare, especially along Ideal. Traffic lights are going to be needed at both entrances to Tablyn Park. And, what about Regional Park's west entrance? I don't want any more stop lights and more so, I don't want to have to pay for them. These are the types of problems that will emerge AFTER the developers are long gone.	Thank you for the comment. The Inwood/Ironwood intersection was not studied in this AUAR as it will not be a major intersection used by the future developments in the AUAR study area.

Comment	Response
The words "traffic accidents" are not at all addressed in the AUAR. Take a look at the intersections of Inwood and Minnehaha, Inwood and Stillwater, and all intersections that open onto Inwood.	Thank you for the comment. The Inwood/Minnehaha and Inwood/Stillwater intersections were not studied in this AUAR as they will not be major intersections used by the future developments in the AUAR study area. The AUAR looks at traffic capacity and operations for future development within a geographic area and does not typically address current safety concerns.
The City of Lake Elmo has not been able to meet the water needs of its current residents. How is it going to meet the needs of this new business park? How about taking care of the residents first? For myself, I'd love to see Tablyn Park sewered FIRST!	Thank you for the comment. The City's 2040 Comprehensive Plan includes a water supply plan that planned for serving the AUAR study area with municipal water. In August 2021, the City of Lake Elmo entered into a Cooperative Agreement with the City of Oakdale to serve the AUAR study area with regional sanitary sewer system through Oakdale. Ultimately, the sanitary sewer main is connected to the Metropolitan Council Environmental Services system which discharges to the Metro Wastewater Treatment Plant in St. Paul.
I am not in favor of amending the city's comp plan to accommodate this developer!! I am in favor of amending the city's comp plan to keep this developer out! I believe that a developer serves the purpose of maximizing exploitation of a city and leaving the city with mitigation costs for decades to come.	Thank you for the comment.

Comment	Response
My taxes are up 39.8% this year! We are on fixed incomes! I hope the city council will do everything in its power to stop this proposed business park. This developer is proposing to implement this development over an 18-year period. There is no one who can anticipate all the problems this development will bring. The city will be mitigating problems this business park brings for decades to come. Increased revenue from more businesses and homes do not offset the cost of services that will be needed. City council members, please tell me my city taxes are not going to go up next year and the next, and the next…	Thank you for the comment.

11. Steve DeLapp, Lake Elmo Resident

Comment	Response
I have some comments and a drawing that after 7 years on the Planning Commission, 2 on the Planning Commission, 16 on the Council, 10 years on the County Planning Commission, and 36 years as a City resident, I am convinced the people living within ½ mile of this land will want and most benefit from the attached draft plan as a first choice. The earlier proposal for tax exempted, 1 million s.f. warehouse with hundreds of cars, low paid workers and semis is beyond belief. Who would move to wooded, 1 to 5 acre lots to have a 24 hour a day trucking operation surrounded by an 8 foot high, barb wire topped chain link fence and intense floodlights anywhere near them. Neither our voters, our environment, or our taxpayers should be forced to accept something totally inappropriate for a city once called the Orono of the East Metro by the **Minneapolis Tribune**.	

Comment	Response
Here is my response to your offer to let residents consider development, and the 3M property directly impacts at least 200 semi-rural households, including mine. Instead, I am certain that my proposal, **an extension of Wildflower Shores real OP ordinance**, is consistent with the long-time values of the City for development above 10th St. This alternative would have many key advantages over alternative proposals. It would: 1. Be consistent with our desire to maintain our low public service, semi-rural lifestyle 2. Reduce traffic impacts far below what alternative proposals would impose 3. Provide far more in taxes than the cost of required services from the City 4. Eliminate any need for Met Council sewer extension from Oakdale, which would be strongly opposed by area voters when the costs and future implications were made known 5. Provide considerably improved environmental enhancement over current or alternatively proposed land uses 6. Greatly reduce the noise to existing city residents from train and highway traffic	Thank you for the comment. Scenario 4 is consistent with the City's 2040 Comprehensive Plan, which permits the development of the parcels south of 34th Street N for Business Park uses and the parcels north of 34th Street N for rural residential uses, continued agriculture, and the public works facility.
7. Put new commercial development in the Old Village, which was planned to become a viable center with a completely planned downtown, instead of putting commercial business that typically provides NO BENEFITS to residents. (If it did, the local taxes on my house, with no city water or sewer and a fine, rural road, would not have gone up almost 40% last year.)	Thank you for the comment.

Comment	Response
8. Allow a few residents to build a house that reflects **their interests** rather than the monolithic, solely financial, interests of national tract housing builders. The development proposal below was superimposed on existing maps from the County and shows the addition of 110 houses on **172.6** acres, including City and County rights of way and wetlands, but excluding the intermittent stream and permanent wetlands adjacent to CSAH 6 **that were retained by 3M** according to current County maps. 110 houses is about 20 more houses than would have been permitted in our existing nationally recognized Open Space developments, one of which was awarded **First Place for National Developments with Under 100 Houses** by the National Builders Association. The extra houses were drawn to show an extreme level of development that would preferably be reduced to be comparable to Wildflower Shores and all other OP developments and account for wetlands created locally and from additional water coming from the 1,100 adjacent housing units under construction in Oakdale and additional associated runoff from a major expansion of CSAH 13B.	

Comment	Response
 Having been instrumental in the creation of the Open Space Ordinance, and as an architect, who studied city planning extensively over 23 years on the Planning Commission and Council and attending many seminars with regional and national experts, I would be glad to work with the Council – **at no cost to our residents** – to further alter and develop this initial concept plan with more accurate delineation of undevelopable wetlands, the power highline, the gas pipeline, rights of way, and any other undevelopable land. I have no expectation that this would be a final design. A rough model of this proposed Open Space development is the design of Prairie Ridge, right next to Highway 36. With heavy planting by the owner, power lines over the site, and custom, tasteful housing, I think we can all agree this OP development is one of many developments worth learning from. The trees planted over 20 years ago by the owner/developer are impressive and benefit the residents on 56th and 58th Streets to the south of Prairie Ridge.	Thank you for the comment.

Comment	Response
The former 3M site may be the largest opportunity for the City residents to provide what have become rare homesite opportunities, where quality and environmental sensitivity are joined and which are unavailable in Woodbury, Oakdale and yet provide easy access to major north-south and east-west highways. They will be highly sought after. It should be an example for the nation to see.	Thank you for the comment.
Because of the train and County road traffic, it is imperative that future residents be provided with extensive noise screening from trees and maybe some berming. It will take some time, but I helped plant the trees on Cty 14 provided by the State and they are doing a great job of visual screening but need more trees to be a better noise barrier.	Thank you for the comment. Any future development of the AUAR study area will be required to comply with the Lake Elmo Code of Ordinances, which regulates mechanical noise associated with building operation by the standards set by the state of Minnesota and Washington County.
Currently, both former 3M parcels are an environmental wasteland for both adjacent residents and wildlife, which is soon to lose hundreds of acres of seasonal hunting grounds across Ideal Ave in Oakdale where most of us know the "resident" red-tailed hawk and where I observed a Sandhill Crane a couple years ago.	Thank you for the comment.
This proposal is a win-win for the city budget, for new residents looking for a less dense development and our greatly threatened remaining environment. As a bonus, the new tree cover will greatly reduce the incessant highway and train noise that row crops and wither snow cover barely muffle. Thanks. I hope this helps in rejuvenating our City. Becoming "North Woodbury" or a re-imagined East Oakdale is not our destination.	Thank you for the comment.

12. The Wildflower Shores Homeowners Association Board

Comment	Response
We, the Board, represent the 25 homes of the Wildflower Shores development immediately east of the property on the north side of Hwy 14 and east of Ideal Ave. We love our little corner of Lake Elmo; in particular, the serenity of the area amid the suburbs, the greenery and the exceptionally low light pollution in our corner of the city comes to mind. We would like to maintain as much of that as possible. We realize that development is inevitable on the property but hope that you will endeavor to incorporate the following into any development option chosen: To attempt to keep any new development consistent with the housing developments to both the north and east of the property. Given the 80 acres of business park development planned for the property south of Hwy 14, we ask that the development plan is majority residential, lots of trees/greenery, and landscaping. • To be aware of the difference in land elevation. Wildflower Shores is roughly 30 feet below the property to our west, so any construction will tower over our neighborhood • To include a park area on the east side of any development option • To keep the light pollution to a minimum • To keep the increase in traffic away from residential areas and traffic noise to a minimum. Noted on page 57, three of the development options introduce an additional 10,000 vehicle trips into/out of the area daily • To limit the entrance/exit to our association to the one existing entrance. This would eliminate any new traffic into our association and to continue to provide a safe neighborhood for the young kids to play	Thank you for the comment.

Appendix F

Agency and Public Comment Letters

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

March 1, 2022

Molly Just
Planning Director
City of Lake Elmo
3800 Laverne Ave N
Lake Elmo, MN 55042

RE: Cyphers Logistic Park Draft AUAR
T29 R21 S16 & S21, Lake Elmo, Washington County
SHPO Number: 2022-0774

Dear Molly Just:

Thank you for providing this office with a copy of the Cyphers Logistic Park Draft Alternative Urban Areawide Review (AUAR).

Based on our review of the project information, we conclude that there are **no properties** listed in the National or State Registers of Historic Places, and no known or suspected archaeological properties located in the area that will be affected by this project.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

Please contact Kelly Gragg-Johnson, Environmental Review Program Specialist, at kelly.graggjohnson@state.mn.us if you have any questions regarding our review of this project.

Sincerely,

Sarah J. Beimers
Environmental Review Program Manager

DEPARTMENT OF NATURAL RESOURCES

Division of Ecological and Water Resources
Region 3 Headquarters
1200 Warner Road
Saint Paul, MN 55106

Transmitted by Email

March 3, 2022

Kristina Handt, City Administrator
City of Lake Elmo
3880 Laverne Ave N, Suite 100
Lake Elmo, MN 55042

Dear Kristina Handt,

Thank you for the opportunity to review the Cyphers Logistic Park Draft Alternative Urban Areawide Review (AUAR) located within the City of Lake Elmo in Washington County. The DNR respectfully submits the following comments for your consideration:

1. Page 16, Lake Elmo 2040 Comprehensive Plan. Please note that the reconstruction of the sanitary sewer lift station will need a separate DNR Water Appropriation Permit if the dewatering for the reconstruction will exceed 10,000 gallons per day, or one million gallons per year. The DNR Permit Application be submitted electronically using the Minnesota Permitting and Reporting System (MPARS) website at: https://webapps11.dnr.state.mn.us/mpars/public/authentication/login
2. Page 17, Water Supply Plan. We appreciate that the development of this area has been reflected in Part 1 of the City of Lake Elmo Water Supply Plan.
3. Page 32, Wastewater. If Scenario 4 is ultimately selected and the use of Subsurface Sewage Treatment Systems (SSTS) becomes necessary, please be aware that groundwater mounding can occur beneath septic system drainfields, and poses a risk similar to infiltration basins within areas prone to surface karst feature development.
4. Page 33, Stormwater. The DNR recommends that stormwater features be used to irrigate landscaping in the AUAR area as a means to reduce groundwater use, especially in an area with known groundwater contamination. For examples, please refer to the Cities of Hugo, Medina, and Minnetrista, all of which successfully reuse stormwater for irrigation purposes. Please note that the use of stormwater from constructed stormwater features does not require a DNR Water Appropriation Permit.
5. Page 33, Stormwater. We recommend that the proposed developments use native seed mixes and plants in stormwater features and landscaping in order to provide pollinator habitat. This is especially important since the federally endangered Rusty-patched Bumble Bee has been documented within the vicinity of the project area. The Board of Soil and Water Resources' website contains many great resources for choosing seed mixes and establishing native plants.

6. Page 33, Stormwater. The planned increase in impervious surfaces will also increase the amount of road salt used in the project area. Chloride released into local lakes and streams does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. Consider promoting local business and city participation in the Smart Salting Training offered through the Minnesota Pollution Control Agency. There are a variety of classes available for road applicators, sidewalk applicators, and property managers. More information and resources can be found at this website. Many winter maintenance staff who have attended the Smart Salting training — both from cities and counties and from private companies — have used their knowledge to reduce salt use and save money for their organizations.

   We also encourage cities and counties to consider how they may participate in the Statewide Chloride Management Plan and provide public outreach to reduce the overuse of chloride. Here are some educational resources for residents as well as a sample ordinance regarding chloride use.

7. Page 34, Water Appropriation. Please note that the details of the future of the water supply system for the City of Lake Elmo will be subject to the decisions of the Ramsey County Court and the State Legislature concerning the White Bear Lake Court Decision.

8. Page 37, Stormwater. Because the project area is located in an area prone to surface karst feature development, we urge caution regarding the use of infiltration basins. If infiltration basins are found to suitable, we recommend verifying infiltration design rates by performing an infiltration test at each location prior to construction of the stormwater feature in order to reduce the chance of infiltration basin failure. We appreciate that construction of infiltration basins will only take place on dry soils and that measures will be taken to preserve soil structure and reduce compaction.

9. Page 46, Rare Features. The DNR concurs that impacts to rare features are unlikely to occur as a result of this project. While impacts to rare features are not anticipated, there is the potential to retain wildlife habitat and reduce fragmentation and loss of habitat by retaining existing groups of trees and wetlands. Opportunities include: the small group of trees on the eastern side of the property that are proposed to be incorporated into a park, the rectangular small chunk of forest on the northwest side of the project area, the small groupings of trees on the south side of 34th Street N along the eastern part of the property (especially nearest to the pond), and the small, younger patch of woods in the northeast corner of the property.

   In the metro area, retaining forest, even the small and isolated remnants on the landscape, is especially important for wildlife habitat, clean water, and for the recreation/aesthetic values to the residents of Lake Elmo. We encourage the City to learn more about the DNR's School Forest Program, which provides an opportunity to use some of the retained forest as an outdoor classroom in one or more of its schools.

10. Page 19, Rare Features. We appreciate that the development will use native seed mixes and plants in landscaping and encourage the City to utilize native plantings to the greatest degree possible.

11. Page 51, Dust and Odors. Should water for dust control be taken from a lake, wetland, river or stream in volumes that exceed 10,000 gallons of water in a single day, then a DNR Water

Appropriation Permit will be needed for the taking of the water. Please do not use products containing chloride for dust control in areas that drain to Public Waters.

Thank you again for the opportunity to review this document. Please let me know if you have any questions.

Sincerely,

Melissa Collins

Regional Environmental Assessment Ecologist | Ecological and Water Resources
Minnesota Department of Natural Resources
1200 Warner Road
St. Paul, MN 55106
Phone: 651-259-5755
Email: melissa.collins@state.mn.us

CC: Christina Hubacek, NorthPoint Development

Equal Opportunity Employer

March 3, 2022

Kristina Handt, City Administrator
City of Lake Elmo
3880 Laverne Avenue North, Suite 100
Lake Elmo, MN 55042

RE: City of Lake Elmo – Draft Alternative Urban Areawide Review (AUAR) – Cyphers Logistic Park
Metropolitan Council Review File No. 22724-1
Metropolitan Council District No. 12

Dear Kristina Handt:

Metropolitan Council staff completed its review of the Cyphers Logistic Park Draft AUAR to determine its accuracy and completeness in addressing regional concerns. Staff concludes that the Draft 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
Wastewater (Roger Janzig, 651-602-1119)
The AUAR states that of the 190-acre study area, 110 acres lie to the north of 34th Street North. This area is not within the current 2030 MUSA and therefore, not available for extension of wastewater service through the Metropolitan Disposal System.

The AUAR refers to an intercommunity wastewater flow agreement with the City of Oakdale for full development of the AUAR to be served with regional sanitary sewer through Oakdale. A copy of the intercommunity wastewater flow agreement should be included in the AUAR.

Forecasts, (Todd Graham, 651-602-1322)
The AUAR discusses four development scenarios:

- Scenario 1 includes 1.8 million square feet of nonresidential space (mostly business park) and 400 apartments in mixed use development.
- Scenario 2 includes 1.7 million square feet of nonresidential space (mostly business park), 210 apartments in mixed use development, and 180 units in low- and medium density residential.
- Scenario 3 includes 2.3 million square feet of nonresidential space (mostly business park) and 56 houses in low-density residential.
- Scenario 4, consistent with current Comprehensive Plan, includes 1.1 million square feet of nonresidential space (business park) on the southern half, and 10 houses, rural residential, on the northern half.

The AUAR study site is part of Transportation Analysis Zone #2351 (north of 34th Avenue) and TAZ #2389 (south of 34th Avenue). TAZ allocations for 2040 have been prepared by the City and were updated following a 2021 plan amendment for the southern portion of the subject site. The TAZ allocation describes:

- TAZ #2351 will grow by +4 households and will have zero employment during 2020-2040.
- TAZ #2389 will lose -96 households and -310 population; and will grow by +800 jobs during 2020-2040.

Should the City pursue scenarios 1, 2, or 3, Lake Elmo would need to request MUSA extension and amend its comprehensive plan. The Metropolitan Council would also expect a households, population and employment forecast increase; and revised forecast allocations for Transportation Analysis Zones #2351 and #2389. (None of this is needed for Scenario 4.)

Land Use (Jake Reilly, 651-602-1822):
As stated in the AUAR, scenarios 1 through 3 are not consistent with the City's 2040 Comprehensive Plan. In order to pursue those scenarios, the City would need to submit an amendment to the City's Land Use plan along with a request for a MUSA extension and adjustments (increases) to forecasts. A Master Plan for the AUAR study area was completed by the City in 2020. Development Scenarios 2 and 3 propose land use changes to the area, including increased density of residential uses. Because the City of Cottage Grove is a Suburban Edge community as described in Thrive MSP 2040, residential densities for new development and redevelopment must be built at a minimum of three units per acre.

Natural Resources (Eric Wojchik, 651-602-1330):
The development layout in Scenario 2 represents a more compact, efficient use of land and infrastructure, with a mix of uses, therefore preserving areas of open space for wildlife habitat and recreation. The three other scenarios would likely create higher VMT and emissions due to reduced traffic connectivity and less efficient use of the land. These environmental and infrastructure considerations should be taken into account in determining the appropriate development scenario.

Transit (Stephen Baisden, 612-349-7361)
No bus stops are located within walking distance of any residential land uses proposed within the various development scenarios and the AUAR does not include enough information to identify if pedestrian facilities are proposed within the development. Additional sidewalks should be considered, as well as providing sidewalks within the proposed development site to facilitate safe pedestrian access. Right-of-way should be set aside for the eventual construction of sidewalks if they are not planned to be constructed with the proposed development.

Long-term, the METRO Gold Line is planned to offer all-day transit service between downtown Saint Paul and Woodbury; 3.5 miles south at the Helmo Avenue Station. Additional expansion of the transit system will be considered by means of connecting local bus routes within Lake Elmo to the METRO Gold Line.

Given the current and planned transit investments in the area and the lower residential density that exists in this area now, this draft AUAR may have a marginal impact on the existing transit network depending on which development scenario is chosen (but not enough to warrant implementation of new transit service). This draft AUAR should not expect additional expansion of the existing transit network.

Item 10. Geology, Soils, and Topography/Land Forms *(Eric Wojchik, 651-602-1330):*
Item 10b states that earthwork on the study area south of 34th Street North is anticipated to generally balance and be kept onsite. The proposed project will require approximately 500,000 total cubic yards of excavation. This section of the EAW does not include detail or mitigation regarding the steep slopes (12-18% gradient, with some areas exceeding 18% gradient) on the

parcel south of 34th Street, which drains to the east. The EAW should consider mitigation to avoid or minimize slope erosion, ensure establishment or retention of stabilizing vegetation, and avoid placement of structures or land alterations near steep slopes. These measures should apply to all four development scenarios.

The Council will not take formal action on the Draft AUAR. If you have any questions or need further information, please contact Jake Reilly, Principal Reviewer, at 651-602-1822 or via email at jake.reilly@metc.state.mn.us.

Sincerely,

Angela R. Torres, AICP, Manager
Local Planning Assistance

CC: Tod Sherman, Development Reviews Coordinator, MnDOT - Metro Division
Francisco J. Gonzalez, Metropolitan Council District No.12
Judy Sventek, Water Resources Manager
Jake Reilly, Sector Representative/ Principal Reviewer
Reviews Coordinator

N:\CommDev\LPA\Communities\Lake Elmo\Letters\Lake Elmo 2022 Cyphers Logistic Park Draft AUAR 22724-1.docx

Metropolitan District
1500 County Road B-2 West
Roseville, MN 55113

February 16, 2022

Molly Just
City of Lake Elmo
3800 Laverne Ave N
Lake Elmo, Minnesota 55042

SUBJECT: Cyphers Logistic Park
MnDOT Review #AUAR22-001
Roughly 3/4 of a mile east of I-694 and Hwy 14 in west-central Lake Elmo
Control Section: 8286
Lake Elmo, Washington County

Dear Molly Just,

Thank you for the opportunity to review the Cyphers Logistic Park Draft alternative urban areawide review (AUAR). Please note that the Minnesota Department of Transportation's (MnDOT) review of this AUAR does not constitute approval of a regional traffic analysis and is not a specific approval for roadway modifications. As plans are refined, we would like the opportunity to review the updated information. MnDOT has reviewed the submitted documents and has the following comments:

Walking and Biking
Washington County is completing trail connections along CSAH 14/34th St further west under I-694. MnDOT recommends that the development of the study area considers safe and accessible connections to facilities for people walking and biking.

For questions regarding these comments, contact Jesse Thornsen, Metro Multimodal, at Jesse.Thornsen@state.mn.us or 651-234-7788.

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 in PDF format to metrodevreviews.dot@state.mn.us. Attachments may not exceed 20 megabytes per email. Documents can be zipped as well. If multiple emails are necessary, number each message.
2. For files over 20 megabytes, upload the PDF file(s) to MnDOT's Web Transfer Client site: https://mft.dot.state.mn.us. Contact MnDOT Planning development review staff using the same email above for uploading instructions, and send an email listing the file name(s) after the document(s) has/have been uploaded.

You are welcome to contact me at 651 234-7785, or Jake.Schutt@state.mn.us with any questions.

Sincerely,

Jake Schutt
Principal Planner

Copy sent via email:
Jason Swenson, Water Resources
Buck Craig, Permits
Michael Lynch, Right of Way
Ashley Hansen, Traffic
Brandi Kastner, Traffic
Jason Junge, Transit
Ryan Coddington, Area Engineer
Lance Schowalter, Design
Mike Samuelson, Ped/Bike Planning
Mackenzie Turner Barger, Multimodal Planning
Jesse Thornsen, Ped/Bike Planning
Tod Sherman, Planning
Cameron Muhic, Planning
David Elvin, Planning
David Kratz, Planning
Russell Owen, Metropolitan Council
Molly Just, City of Lake Elmo

8- Feb- 2022

City of Lake Elmo
190A 3M land

I wish to make comment regarding future use of the 190 Acres of 3M land by the Maintence Building.

Scenario #4 is the best. The Approved Comp Plan senario.

Please do not put Truck Terminals etc. on that area.

Respectfully.

Susan Dunn
11018 Upper 33rd St. N.
Lake Elmo Mn. 55042

From: djbucheck@comcast.net
To: Molly Just
Subject: Comments on Draft AUAR
Date: Sunday, February 27, 2022 6:22:02 PM

I urge the city council to vote for Development Scenario 4. This land uses includes agricultural, rural residential, public works, and business park. This scenario is the only scenario that is consistent with the adopted Comprehensive Plan. It protects the existing neighborhoods from the more intense development patterns contemplated in the other scenarios. The trip generation forecast is the lowest and will have the least congestion impact on the affected roads and will be the least costly in terms of roadways. Although not addressed, water supply to this area may be affected by the decisions regarding allowance of water supply to any lands within five miles of White Bear Lake. This area is clearly within the five-mile radius and the need for water supply is of paramount importance. It is also unfortunate the AUAR does not show the buried pipelines nor the energy lines that will have an impact on any proposed scenario. The future land use plan as shown in the comprehensive plan continues to be the best plan at this time and should not be changed. Please vote for scenario 4.

Ann Bucheck
2301 Legion Avenue N.
Lake Elmo MN 55042

From:	Benjamin Pepin
To:	Molly Just
Cc:	Breanna Pepin
Subject:	Cyphers Logistic Park Draft AUAR Feedback
Date:	Wednesday, March 2, 2022 10:47:59 PM

Hello Ms. Just,

We are writing to provide feedback to you on the Cyphers Logistic Park draft AUAR per direction on the Lake Elmo website. Our preference for this area would be that it remains as open as possible, which would ideally mean maintaining it as agricultural land and the public works building. We would prefer there to be no business or residential development in this space. However, if the only path forward is one of the 4 proposed development plans, we would be in favor of the one that develops this space the least and maintains the open and green spaces that exist today, which would appear to be development scenario 4 (agriculture and rural residential).

Please keep us updated if there will be specific meetings/sessions where this land use is discussed.

Thank you,
Ben and Breanna Pepin
8690 Lake Jane Trl N

From: tomhenderson136@comcast.net
To: Molly Just
Subject: Cyphers Logistic Park
Date: Saturday, February 26, 2022 1:30:54 PM

I strongly favor Scenario 1.

Tom Henderson

11070 39th St N. apt 313

Lake Elmo, MN

I was contacted and encouraged to write to you in favor of Scenario 4. I believe that #4 is not practical…to attempt to develop and maintain this location as "rural residential" is unrealistic. In my opinion, it should be zoned for commercial and/or industrial due to proximity to the freeway ramps. Maybe a portion could be successful as high density residential.

Tom Henderson

Molly Just, Planning Director

Sunday, February 27, 2022

City of Lake Elmo

3800 Laverne Ave. N.

Lake Elmo, MN 55042

Ms. Just,

My name is Dan Novak. I am a resident of Lake Elmo. I live at 8520 Ironwood Trail N. in Tablyn Park, located about 2 blocks from the south most edge of the business park being proposed by Cyphers Logistic Park AUAR.

My biggest concern is the business park. The following are my written comments on the draft AUAR and Mitigation Plan:

1. The word "criminal activity" isn't even mentioned in the AUAR. 1.1-2.2 x 10^6 ft^2 of business park will bring with it some criminal activity. When I think of what is being proposed, I want to draw an analogy to a truck stop along an interstate. Only this one will be off the beaten path.
2. The smell of diesel engines is not mentioned. There are residences on 3 sides of the proposed business park. I feel sorry for the people living on the west side of Ideal Ave. In addition to the train, they now get to bear the noise, lights, and smell of diesel fumes the business park will bring.
3. The intersection of Inwood and Stillwater Blvd., regarding traffic, isn't even mentioned in the AUAR. It looks like they are predicting a 5% increase in traffic volume on Inwood. I live on the corner of Inwood and Ironwood. Right now, today, I often have to wait minutes (yes, minutes), to turn onto Inwood and get back onto Ironwood from Inwood. This proposed business park with 10,000 proposed trips per day, is going to be a traffic nightmare, especially along Ideal. Traffic lights are going to be needed at both entrances to Tablyn Park. And, what about the Regional Park's west entrance? I don't want any more stop lights, and more so, I don't want to have to pay for them. These are the type of problems that will emerge AFTER the developers are long gone.
4. The words "traffic accidents" are not at all addressed in the AUAR. Take a look at the intersections of Inwood and Minnehaha, Inwood and Stillwater, and all intersections that open onto Inwood.
5. The City of Lake Elmo has not been able to meet the water needs of its current residents. How is it going to meet the needs of this new business park? How about taking care of the residents first? For myself, I'd love to see Tablyn Park sewered FIRST!
6. I am not in favor of amending the city's comp plan to accommodate this developer!! I am in favor of amending the city's comp plan to keep this developer out! I believe that a developer serves the purpose of maximizing exploitation of a city and leaving the city with mitigation costs for decades to come.
7. My city taxes are up 39.8% this year! We are on fixed incomes! I hope the city council will do everything in it's power to stop this proposed business park. This developer is proposing to implement this development over an 18 year period. There is no one who can anticipate all the problems this development will bring. The city will be mitigating problems this business park brings for decades to

come. Increased revenue from more businesses and homes do not offset the cost of services that will be needed. City council members, please tell me my city taxes are not going to go up next year and the next, and the next...

I don't want to see the Cyphers Logistic Park business park go in!

Ms. Just, I specifically ask that you read this letter, in its entirety, at any council meeting this subject comes up.

Thank you,

Dan Novak

Dan Novak

Land line: (651)748-1631

Email: 'dan_novak_outa10@outlook.com'

Address: 8520 Ironwood Trail N., Lake Elmo, MN 55042

P.S. Please come back immediately on receipt so I know you are in receipt b4 March 3rd.

This PC/Documents/cyphers logistic park AUAR

From:	Steve DeLapp
To:	Molly Just
Subject:	Revised: Proposal for former 3M land surrounding Public Works.
Date:	Thursday, March 3, 2022 9:22:05 AM
Attachments:	3M Property Development 3-02--22.jpg

REVISED

Steve DeLapp
8468 Lake Jane Trail
777-1001 or 651-999-9940

Molly,

I have some comments and a drawing that after 7 years on the Planning Commission, 2 on the Planning Commission, 16 on the Council, 10 years on the County Planning Commission, and 36 years as a City resident, I am convinced the people living within 1/2 mile of this land will want and most benefit from the attached draft plan as a first choice. The earlier proposal for a tax exempted, 1 million s.f. foot warehouse with hundreds of cars, low paid workers and semi's is beyond belief. Who would move to wooded, 1 to 5 acre lots to have a 24 hour a day trucking operation surrounded by an 8 foot high, barb wire topped chain link fence and intense, floodlights anywhere near them. Neither our voters, our environment or our taxpayers, should be forced to accept something totally inappropriate for a city once called the Orono of the East Metro by the **Minneapolis Tribune.**

To the Lake Elmo City Council:

Here is my response to your offer to let residents consider development, and the 3M property directly impacts at least 200 semi-rural households, including mine.

Instead, I am certain that my proposal, **an extension of Wildflower Shores real OP ordinance**, is consistent with the long time values of the City for development above 10th St.

This alternative would have many key advantages over alternative proposals. It would:

1. be consistent with our desire to maintain our low public service, semi-rural lifestyle,
2. reduce traffic impacts far below what alternative proposals would impose,
3. provide far more in taxes than the cost of required services from the City,
4. eliminate any need for Met Council sewer extension from Oakdale, which would be strongly opposed by area voters when the costs and future implications were made known.
5. provide considerably improved environmental enhancement over current or alternatively proposed land uses.
6. greatly reduce the spread of noise to existing city residents from train and highway traffic.
7. put new commercial development in the Old Village, which was planned to become a viable center with a completely planned downtown, instead of putting commercial business that typically provides NO BENEFITS to the residents. (If it did, the local taxes on my house, with no city water or sewer and a fine, rural road, would not have gone up almost 40% last year.)
8. Allow a few residents to build a house that reflects **their interests** rather than the monolithic, solely financial, interests of national tract housing builders.

The development proposal below was superimposed on existing maps from the County, and shows the addition of 110 houses on **172.6** acres, including City and County rights of way and wetlands, but excluding the intermittent stream and permanent wetlands adjacent to CSAH 6 **that were retained by 3M** according to current County maps. 110 houses is about 20 more than would have been permitted in our existing nationally recognized Open Space developments, one of which was awarded **First Place for National Developments with Under 100 Houses** by the National Builders Association. The extra houses were drawn to show an extreme level of development that would preferably be reduced to be comparable to Wildflower Shores and all other OP developments and account for wetlands created locally and from additional water coming from the 1,100 adjacent housing units under construction in Oakdale and additional associated runoff from a major expansion of CSAH 13B.

Having been instrumental in the creation of the Open Space Ordinance, and as an architect, who studied city planning extensively over 23 years on the Planning Commission and Council and attending many seminars with regional and national experts, I would be glad to work with the Council - **at no cost to our residents** - to further alter and develop this initial concept plan, with more accurate delineation of undevelopable wetlands, the power highline, the gas pipeline, rights of way, and any other undevelopable land. I have no expectation that this would be a final design. A rough model of this proposed Open Space development is the design of Prairie Ridge, right next to Highway 36. With heavy planting by the owner, power lines over the site, and custom, tasteful housing, I think we can all agree this OP development is one of many developments worth learning form. The trees planted over 20 years ago by the owner/developer are impressive and benefit the residents on 56th and 58th Streets to the south of Prairie Ridge.

The former 3M site may be the largest opportunity for the City residents to provide what have become rare homesite opportunities, where quality and environmental sensitivity are joined and which are unavailable in Woodbury, Oakdale and yet provide easy access to major north-south and east-west highways. They will be highly sought after. It should be an example for the nation to see.

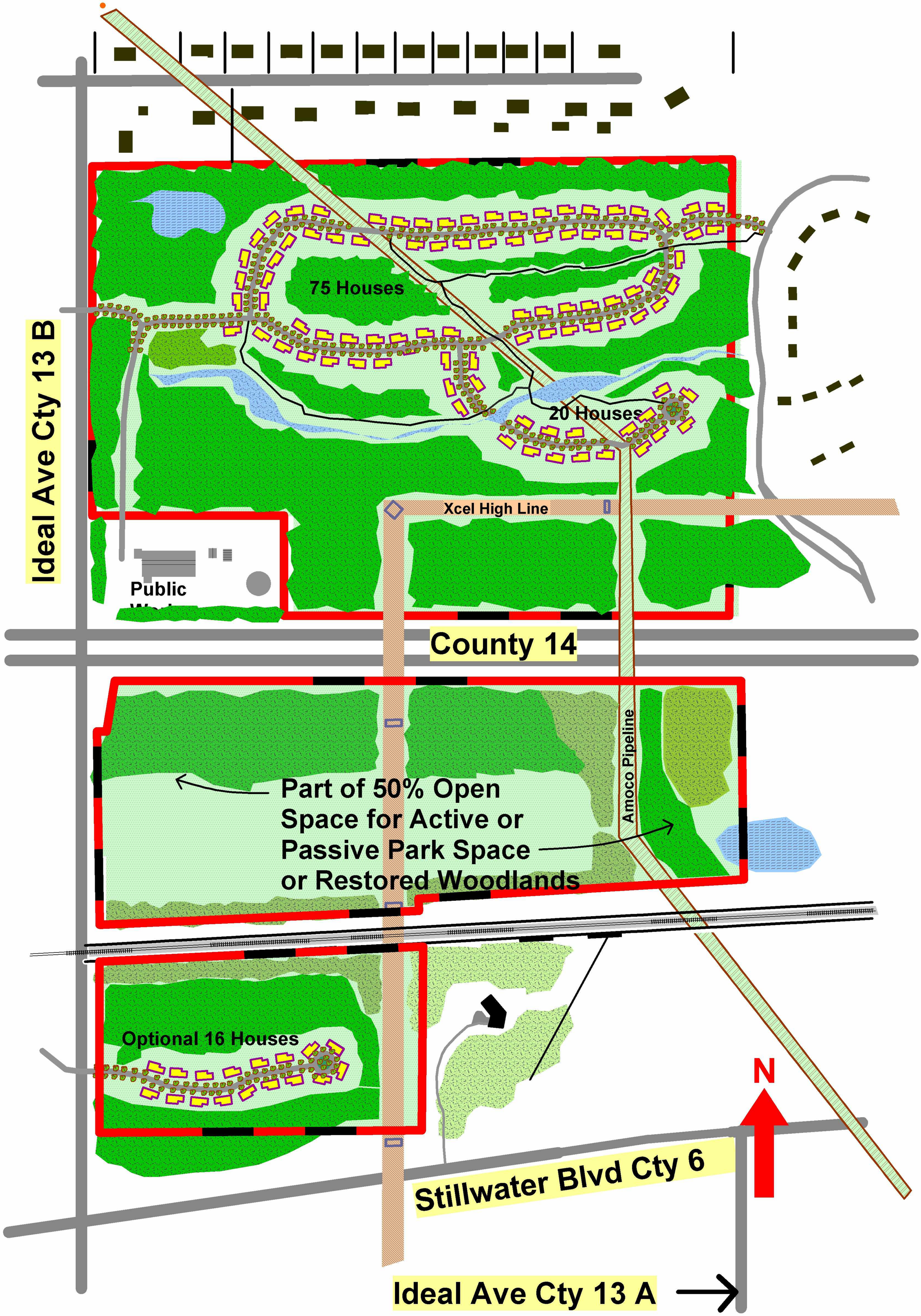
Because of the train and County road traffic, it is imperative that future residents be provided with extensive noise screening from trees and maybe some berming. It will take some time, but I helped plant the trees on Cty 14 provided by the State and they are doing a great job of visual screening, but need more trees to be an even better noise barrier.

Currently, both former 3M parcels are an environmental wasteland for both adjacent residents and wildlife, which is soon to lose hundreds of acres of seasonal hunting grounds across Ideal Ave in Oakdale where most of us know the "resident" red tailed hawk and where I observed a Sandhill Crane a couple years ago.

This proposal is a win-win for the city budget, for new residents looking for a less dense development and our greatly threatened remaining environment. As a bonus, the new tree cover will greatly reduce the incessant highway and train noise that row crops and winter snow cover

barely muffle.

Thanks. I hope this helps in rejuvenating our City. Becoming "North Woodbury" or a re-imagined East Oakdale is not our destination.



Proposal for Development of former 3M Land at Cty 13B and Cty 14

3-02-22 SCD

From:	C. Case Jr
To:	Molly Just
Cc:	Jeff Strong; D K; LEE BLOOMQUIST; Mary Pat; Daniel Gerding; Comcast; Jennifer Stoltenow; Scott Smith; Jeff; Shari; Tim; Lorrie; Mark A Johnson; Dennis; Brad; Mark; Mary; Gus; Tim; Hayden; Jackie; JOHN HEALY; Lora Sempf; Mary; Nate and Jen Stoltenow; Gina Kalis; Kathy; Scott Mellick; Jill Gerding; Michael Karcher; Lisa; Bill; Margaret Heininger; Erin C; Lainie
Subject:	Wildflower Shores HOA Feedback on Cyphers Logistics Park AUAR
Date:	Wednesday, March 2, 2022 10:02:35 PM

Dear Ms. Just:

We, the Board, represent the 25 homes of the Wildflower Shores development immediately east of the property on the north side of Hwy 14 and east of Ideal Ave. We love our little corner of Lake Elmo; in particular, the serenity of the area amid the suburbs, the greenery and the exceptionally low light pollution in our corner of the city comes to mind. We would like to maintain as much of that as possible.

We realize that development is inevitable on the property but hope that you will endeavor to incorporate the following into any development option chosen:

To attempt to keep any new development consistent with the housing developments to both the north and east of the property. Given the 80 acres of business park development planned for the property south of Hwy 14, we ask that the development plan is majority residential, lots of trees / greenery, and landscaping.

- To be aware of the difference in land elevation. Wildflower Shores is roughly 30 feet below the property to our west, so any construction will tower over our neighborhood.
- To include a park area on the east side of any development option.
- To keep the light pollution to a minimum.
- To keep the increase in traffic away from residential areas and traffic noise to a minimum. Noted on page 57, three of the development options introduce an additional 10,000 vehicle trips into/out of the area daily.
- To limit the entrance/exit to our association to the one existing entrance. This would eliminate any new traffic into our association and to continue to provide a safe neighborhood for the young kids to play.

Thank you in advance for your time and consideration.

The Wildflower Shores Homeowners Association Board
Dan Gerding, President (3693 37th Street N, Lake Elmo, MN 55042)
Karen Schwingler, Treasurer (3923 Ironwood Tr N, Lake Elmo, MN 55042)
Cullen Case Jr., Secretary (4083 35th St. N, Lake Elmo, MN 55042)

CC: all homes within the Wildflower Shores development.