NorthPark Business Center AUAR Update

AUAR UPDATE

#18-116

Prepared for:

Brooklyn Park

In cooperation with:

SCANNELL PROPERTIES

Prepared by:

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MARCH 2024

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1. Introduction

The NorthPark Business Center Alternative Urban Areawide Review (AUAR) study area encompasses approximately 227 acres of land located south of 109th Avenue N, between U.S. Highway 169 (US 169) and Winnetka Avenue N in Brooklyn Park.

The City of Brooklyn Park adopted the NorthPark Businesses Center Final AUAR and Mitigation Plan on May 6, 2013. Since that time, some development within the study area has occurred. Pursuant to Minnesota Rules, part 4410.3610, subpart 7, an AUAR and plan for mitigation must be revised every five years until all development in the study area has received final approval. Since the study area has not been fully developed, the purpose of this document is to update the NorthPark Business Center AUAR pursuant to Minnesota Rules.

The 2018 AUAR Update included analysis of three development scenarios as summarized below. The difference between these scenarios is that Scenario 1 includes industrial/office/warehouse in the northwest corner of the site whereas Scenario 2 includes retail in that location. In 2020, Brooklyn Park updated their Comprehensive plan to remove Residential as a future land use within the study area. Scenario 3 includes residential units on site; because this Scenario 2013-C is no longer compatible with the Brooklyn Park Comprehensive Plan, it is no longer being considered for development.

- Scenario 2018-A:
    - 4,074,000 gross square feet (GSF) industrial/office/warehouse/fulfillment center
    - 5,500 GSF commercial
- Scenario 2018-B:
    - 3,800,000 GSF industrial/office/warehouse/fulfillment center
    - 145,500 GSF commercial
- Scenario 2013-C (Scenario 1 from the 2013 AUAR):
    - 3,026,000 GSF industrial/office/warehousing
    - 8,500 GSF commercial
    - 300-600 residential units

This report is intended to serve as an update to the 2018 AUAR update and includes information on development to date, the updated development scenarios, an update to the environmental analysis where necessary, and a review of mitigation measures.

2. Existing Conditions

As of December 2023, 13 industrial buildings have been developed or are under construction within the study area. 11 industrial buildings have been completed totaling 1,785,000 square feet, one building is partially completed with 64,000 square feet completed and 192,000 square feet yet to be built and two buildings are approved but not completed, totaling 420,000 square feet. The approximately 32.5-acre area on the northwest portion of the site is the remaining area to be developed, with 140,000 square feet of development proposed. Oxbow Creek Drive and Xylon Avenue have been

constructed. These buildings and roads and shown on Figure 1 and were incorporated into the analyses completed for this AUAR Update. An updated Scenario 2024-D has been created to reflect the anticipated development for the remaining area:

- Scenario 2024-D
    - ~2,601,000 GSF – includes existing, under construction and remaining to be built. See Table 1 for breakdown of uses.

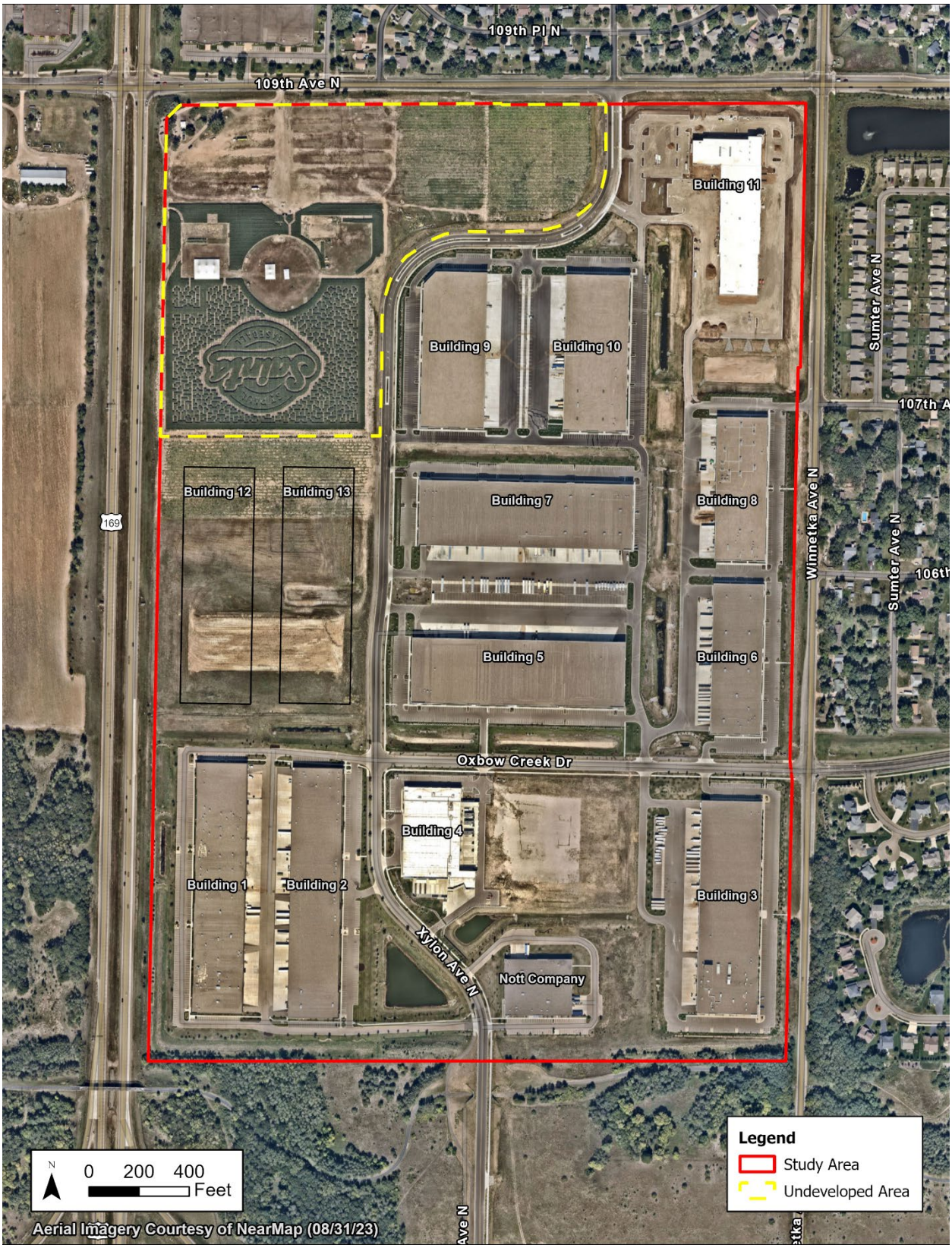
This 2024 AUAR update will provide the impact analysis on the 32.5-acres of undeveloped area. See **Attachment A** for the existing conditions and anticipated uses for Scenario 2024-D.

Table 1: Existing and Proposed Land Use Within AUAR Study Area (as of December 2023)

Building #	Land Use	Existing Intensity (S.F.)	Expansion of Proposed Intensity (S.F.)	Total Buildout Intensity (S.F.)	Building Status as of December 2023
1	Industrial Park	202,000	-	202,000	Completed
2	Industrial Park	202,000	-	202,000	Completed
3	Industrial Park	210,000	-	210,000	Completed
4	Industrial Park	64,000	192,000	256,000	Partially operational
5	Industrial Park	221,000	-	221,000	Completed
6	Industrial Park	120,000	-	120,000	Completed
7	Industrial Park	221,000	-	221,000	Completed
8	Industrial Park	115,000	-	115,000	Completed
9	Industrial Park	156,000	-	156,000	Completed
10	Industrial Park	-	-	157,000[1]	Completed
11	Industrial Park	-	-	120,000[1]	Completed
12	Industrial Park	-	-	210,000	Approved but not constructed
13	Industrial Park	-	-	210,000	Approved but not constructed
Nott Company	Industrial Park	61,000	-	61,000	Completed
NW Corner of Site 2024-2028	Retail/Restaurant/Business Park	-	-	140,000	Proposed
	Gas/ Convenience Store	-	-	10 Pumps	Proposed
Total		**1,572,000**	**192,000**	**2,601,000**	

[1] Buildings have been completed and begun leasing but are not operational from a traffic perspective.

Figure 1: Existing Conditions



3. Impact Analysis

3.1. Areas of No Anticipated Change

The analysis that was completed in 2013 for the following issue areas remains valid. While there have been changes related to these areas, the changes are not anticipated to exceed the thresholds established in the 2013 AUAR. Areas requiring updated analysis are discussed in section 3.2.

- Land use and Compatibility with Plans
- Cover types
- Fish, Wildlife, and Ecologically Sensitive Resources
- Water resources
- Water-related land use management districts
- Water surface use
- Erosion and sedimentation
- Geologic hazards and soil conditions
- Vehicle-related air emissions
- Solid Wastes, Hazardous Wastes, Storage Tanks
- Dust, odors, and noise
- Stationary source air emissions
- Sensitive resources
- Adverse visual impacts
- Cumulative potential effects
- Other potential environmental impacts

The impacts identified for these areas in the 2013 AUAR and current status are summarized in Section 4.

3.2. Areas Required Updated Analysis

3.2.1. Water Use

Scenario 2024 - D

The total water demand is determined using the Metropolitan Council of Environmental Services (MCES) standard flow rates for industrial, office/warehouse, and retail/restaurant. Based on these square footages for this scenario, the 2024-D concept has a projected flow rate of 162,450 to 165,780 gallons per day (GPD) or 59,294,2150 to 60,509,7000 gallons per year (GPY). These estimates are significantly lower than the 2018 AUAR Update and the original 2013 AUAR.

The remaining new development will connect to the new 16-inch watermain, which was extended to the north in Xylon Avenue North. The water will be looped through the development back to Xylon Ave at multiple points throughout the development to have a redundant supply.

The 2013 AUAR has a discussion on the need for a new well and potentially a new water tower in the area to provide a second water supply and additional storage to the city system to maintain the systems integrity and meet local demands. These improvements are

again mentioned in the 2040 Comprehensive Plan updated published by the City of Brooklyn Park. The 2013 AUAR suggests these improvements may occur on the development site, but with the requirement for infiltration of stormwater to meet the rate and volume restrictions by the City and watershed, a well site will not be feasible on the project site. A well cannot be sited in areas of infiltration due to the risk of contamination of the ground water for the infiltration practice. An alternative well site will need to be sought by the city, but the developer is willing to work with the City in the event the water tower needs to be in this area.

Scenario 2018-A

The total water demand is determined using the MCES standard conversions for industrial, office, and gas station uses. The resulting water demand based on the total square footage of the buildings is approximately 180,000 GPD or 65,714,299 GPY. This is less than the maximum demand assumed in the 2013 AUAR, which assumed 600 units of high-density housing that required additional demand. The maximum demand of the 2013 AUAR was approximately 312,000 GPD or 113,9000,000 GPY. Per tests from August 2018, the available flow is 1,144 GPM at hydrant (reference #W06027) along the southern edge of the AUAR study area. If it is determined that flow requirements for fire protection for the individual projects exceeds the existing flows in the area, fire mitigation improvements (tanks, pumps, etc.) will be constructed.

Scenario 2018-B

The total water demand is determined using the MCES standard conversions for industrial, office, retail, restaurant and gas station uses. The resulting water demand based on the total square footage of the buildings is approximately 177,465 GPD or 64,774,589 GPY. This is less than the maximum demand assumed in the 2013 AUAR, which assumed 600 units of high-density housing that resulted in additional demand. The maximum demand of the original AUAR was approximately 312,000 GPD or 113,9000,000 GPY.

Scenario 2013-C

It was estimated in the 2013 AUAR that development for Scenario 2013-C would use approximately 59 to 114 million GPY or 163,000 to 312,011 GPD. This estimate is based on office/warehouse, retail, and high-density housing uses. Water demand for Scenario 2013-C is unchanged from what was studied in the 2013 AUAR.

3.2.2. Water Quality – Stormwater Runoff

Scenario 2024 - D

Scenario 2024-D does not change the impervious calculation for the 2018 AUAR update. The stormwater runoff will be treated in the regional ponds constructed as part of the project and infiltrated based on the soil testing completed by AET. There is no change in how the stormwater will be treated or infiltrated from the 2018 AUAR update.

Scenarios 2018-A and 2018-B

The overall development will consist of approximately 160 acres of impervious area when fully developed. Based on previously completed geotechnical tests performed by American Engineering Testing Inc. (AET), infiltration rates were found to exceed upwards of 11 inches per hour. Using a safety factor of 2.5 from the previously approved stormwater management report, an infiltration rate of 4.5 inches per hour was used for design. The

overall development will consist of nine pretreatment wet ponds, designed to National Urban Runoff Program (NURP) standards, to treat the new impervious areas prior to discharging to the on-site infiltration basins. There will be six infiltration basins that are designed to infiltrate the 100-year back-to-back storm events as there is no adjacent existing storm sewer infrastructure provided to the overall development. Emergency overflows will be provided such that the finished floors of the proposed structures will provide sufficient freeboard above the overflow elevations.

Scenario 2013-C

Scenario 2013-C from the previous AUAR proposed a total of seven wet ponds and four infiltration basins. All stormwater for this site is expected to be captured entirely on-site; therefore, the ponds and basins are designed to capture 100-year back-to-back storms, with no flow leaving the site. Stormwater runoff for Scenario 2013-C is unchanged from what was studied in the 2013 AUAR.

3.2.3. Water Quality – Wastewater

Scenario 2024 - D

The total wastewater demand is determined using the MCES standard conversions for industrial/warehouse, office, and retail/restaurant uses. The resulting peak wastewater flow demand based on the total square footage of the buildings is 1.03 cubic feet per second (CFS). This is less than the maximum demand assumed in the 2018 AUAR update or the 2013 AUAR. The maximum peak flow demand of the 2018 AUAR was approximately 1.11 CFS and the 2013 AUAR that estimated flows to be 1.90 CFS. This area will connect to the existing 10-inch sewer line that was installed in Xylon Ave.

Scenario 2018-A

The total wastewater demand is determined using the MCES standard conversions for industrial/warehouse, office, and gas station uses. The resulting peak wastewater flow demand based on the total square footage of the buildings is 1.11 cubic feet per second (CFS). This is less than the maximum demand assumed in the 2013 AUAR, which assumed 600 units of high-density housing that added additional demand. The maximum peak flow demand of the 2013 AUAR was approximately 1.90 CFS. The 2013 AUAR identified a new 15-inch sewer line. This scenario includes a new 12-inch sanitary sewer line that will extend north through the property and will be reduced to 10-inch at the intersection with Oxbow Creek Drive.

Scenario 2018-B

The total wastewater demand is determined using the MCES standard conversions for industrial/warehouse, office, retail, restaurant and gas station uses. The resulting peak wastewater flow demand based on the total square footage of the buildings is 1.09 CFS. This is less than the maximum demand assumed in the 2013 AUAR, which assumed 600 units of high-density housing that added additional demand. The maximum peak flow demand of the original AUAR was approximately 1.90 CFS. This scenario includes a new 12-inch sanitary sewer line that will extend north through the property and will be reduced to 10-inch at the intersection with Oxbow Creek Drive.

Scenario 2013-C

Based on the anticipated maximum development size and the type of development proposed, the average peak flow for the area is estimated to range from 0.700 to 1.932 CFS. Wastewater for Scenario 2013-C is unchanged from what was studied in the 2013 AUAR.

3.2.4. Traffic

A traffic analysis was completed for Existing (2023), Year 2028 (Short-Term), and Year 2040 (Long-Term) conditions (see Attachment B for full report). The 2018 AUAR analyzed year 2018, 2021, and 2040 conditions. Overall, the majority of the industrial space is now developed (+/- 1,850,000 square feet of industrial park). The 2018 AUAR was used as a baseline when determining the site distribution and the proposed mitigations. A detailed traffic analysis has been performed to address the traffic related issues with the proposed NorthPark Business Center development and is provided in Attachment B. The following provides a summary of the anticipated traffic generation of the proposed NorthPark Business Center development and mitigation measures identified to ensure acceptable level of service (LOS).

Development Assumptions

The following tables outline the change in land use between the 2018 AUAR and this update.

Table 1 presents the trip generation forecast for Scenario 2018-A. Table 2 presents the trip generation forecast for Scenario 2018-B. Table 3 provides the trip generation forecast for Scenario 2013-C.

Table 2: Trip Generation Forecast for Scenario 2018-A

Land Use Description	Intensity (Square Feet)	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
EXISTING DEVELOPMENT								
Industrial Park (ITE LUC 130)	465,000 Square Feet	1,565	150	35	185	40	145	185
SHORT-TERM DEVELOPMENT								
Fulfillment Center	2,561,000 Square Feet	5,260	1,130	15	1,145	1,100	1,205	2,305
REMAINING DEVELOPMENT (YEARS 2021 to 2040)								
Industrial Park (ITE LUC 130)	1,424,000 Square Feet	4,800	460	110	570	120	450	570
Gas Station (ITE LUC 945)	10 Fueling Stations	2,055	65	60	125	70	70	140
TOTAL		***13,680***	***1,805***	***220***	***2,025***	***1,330***	***1,870***	***3,200***

Table 3: Trip Generation Forecast for Scenario 2018-B

Land Use Description	Intensity (Square Feet)	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
EXISTING DEVELOPMENT								

Industrial Park (ITE LUC 130)	465,000 Square Feet	1,565	150	35	185	40	145	185
SHORT-TERM DEVELOPMENT								
Fulfillment Center	2,561,000 Square Feet	5,260	1,130	15	1,145	1,100	1,205	2,305
REMAINING DEVELOPMENT (YEARS 2021 to 2040)								
Industrial Park (ITE LUC 130)	1,150,000 Square Feet	3,875	375	85	460	95	365	460
Commercial (ITE LUC 820)	115,000 Square Feet	4,340	70	40	110	210	230	440
Restaurant (ITE LUC 932)	25,000 Square Feet	2,805	140	110	250	150	95	245
Gas Station (ITE LUC 945)	10 Fueling Stations	2,055	65	60	125	70	70	140
TOTAL		***19,900***	***1,930***	***345***	***2,275***	***1,665***	***2,110***	***3,775***

Table 4: Trip Generation Forecast for Scenario 2013-C

Land Use Description	Intensity (Square Feet)	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
EXISTING DEVELOPMENT								
Industrial Park (ITE LUC 130)	465,000 Square Feet	1,565	150	35	185	40	145	185
REMAINING DEVELOPMENT (YEARS 2020 to 2040)								
Industrial Park (ITE LUC 130)	2,561,000 Square Feet	8,630	830	195	1,025	215	810	1,025
Commercial (ITE LUC 820)	8,500 Square Feet	3,210	50	30	80	155	170	325
Apartments (ITE LUC 220)	600 Dwelling Units	4,390	65	210	275	210	125	335
TOTAL		***17,795***	***1,095***	***470***	***1,565***	***620***	***1,250***	***1,870***

Trip Generation

The trip generation forecast has been updated based on the latest site plan. Trip generation forecasts for the remaining industrial park, retail, and gasoline station were based on information provided in ITE's Trip Generation 11th Edition. Trip generation for the completed portion of the development that is shown below is from the turning movement counts collected in 2023 rather than ITE.

Table 5: Trip Generation Forecast for Scenario 2024-D

Land Use Description	Intensity (Square Feet)	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
EXISTING DEVELOPMENT								
Industrial Park (Based on TMC data)	1,572,000 Square Feet	No Data	268	98	366	179	340	519
VESTED DEVELOPMENT[1]								

Industrial Park (ITE LUC 130)	889,000 Square Feet	2,996	245	57	302	66	236	302
REMAINING DEVELOPMENT (YEARS 2020 to 2040)								
Commercial (ITE LUC 821)	140,000 Square Feet	9,453	150	92	242	292	305	597
Gas Station (ITE LUC 945)	10 Fueling Positions	2,651	80	81	161	92	92	184
TOTAL		***Existing +15,100***	***743***	***328***	***1,071***	***629***	***973***	***1,602***

Note 1: Vested development is considered to consist of buildings that are approved, under construction, or completed but are not generating trips to their potential.

Based on the trip generation calculation, the proposed 2024-D scenario is anticipated to generate significantly fewer trips during both the AM and PM peak hours than any of the previously analyzed development scenarios.

Intersection Analysis

The capacity analysis was updated to reflect new traffic counts and the updated scenarios. The analysis was performed for weekday AM and PM peak hour conditions at the following intersections:

- TH 169 & 109th Avenue North
- 101st Avenue N & TH 169 SB Ramp
- 101st Avenue N & TH 169 NB Ramp
- 101st Ave N & Xylon Avenue N
- CSAH 103/CSAH 103 & 109th Avenue North
- CSAH 103 & 107th Avenue North
- CSAH 103 & Oxbow Creek Drive
- CSAH 103 & 101st Avenue North
- 109th Avenue North & Xylon Lane North
- Xylon Avenue N & Oxbow Creek Drive

The analysis was performed for five scenarios: 2023 Existing, 2028 No-Build, 2028 Build, 2040 No-Build, and 2040 Build. Some mitigation and planned improvements were assumed to be implemented by the year 2040 scenarios (see the traffic analysis in Attachment C). The following provides a summary of the analysis results for each of the five scenarios:

- **2023 Existing Conditions:** The intersection of US 169 & 109th Avenue N is currently operating below acceptable LOS.
- **2028 No-Build/Build Conditions:** Based on the traffic analysis, the following intersections are anticipated to operate below acceptable LOS in 2028: US 169 & 109th Avenue N, 101st Avenue N & Xylon Avenue N, CSAH 103 & 101st Avenue N.
- **2040 No-Build/Build Conditions**: Based on the traffic analysis, the following intersections are anticipated to operate below acceptable LOS in 2040: US 169 & 109th Avenue N and CSAH 103 & Oxbow Creek Drive.

Mitigation strategies have been developed to address the anticipated LOS deficiencies for the various analysis scenarios. Section 5 provides detailed information about the

transportation mitigation plan. The overall impact of the development on the surrounding roadway network is anticipated to be slightly lower than was previously estimated in the 2018 AUAR, with most mitigation changes from the previous AUAR still being recommended but others are not believed to be necessary.

3.2.5. Infrastructure and Public Services

As the NorthPark Business Center has been developed, infrastructure improvements have been constructed to serve the AUAR study area consistent with the City of Brooklyn Park subdivision policy. Since the 2013 AUAR a segment of Xylon Avenue has been constructed and then extended North to 109th Avenue and South to 101st Avenue as part of the project to serve site access needs. A grade separated crossing for the existing Rush Creek Regional Trail that runs east-west just south of the subject property has been constructed under the Xylon Avenue extension to 101st Avenue to the South. New water main and sanitary sewer trunk piping have been constructed within the Xylon Avenue extensions, and stormwater piping, stormwater basins, and infiltration basins have also been constructed along Xylon Avenue and throughout multiple completed sites within the development. The utility services for specific buildings have been provided in stages, and individual sites have been mass-graded throughout the progress of the development. Erosion and sediment controls have been utilized in each phase, as well as temporary and permanent vegetation establishment. The site is expected to generate some excess topsoil, which will be used in berms, buffer areas, lawns, and landscape areas.

As part of Scenarios 2018-A and 2018-B, two public roads have been constructed through the middle of the site to provide access. The main street has been designed and constructed as a two-lane street with shoulders and a center shared left turn lane to access individual properties.

4. Summary

Table 6 is a summary of the potential impacts identified in the 2018 AUAR and new or modified impacts identified in this AUAR Update.

Table 6: Summary of Impacts

Resource Area	Potential Impact from 2018 AUAR	New Impact Identified in AUAR Update
Land Use	If Scenario 2013-C is developed, a Comprehensive Plan amendment will be required for adding residential land use to the site.	None
Cover Types	None	None
Fish, Wildlife, and Ecologically Sensitive Resources	DNR Blanding's Turtle Fact Sheet will be provided to all contractors working on site so that the appropriate measures can be followed if turtles are encountered during construction.	None
Water Use	Scenarios 2018-A and 2018-B are estimated to have less total water	• Estimates for 2024 remaining area to be developed are significantly

Resource Area	Potential Impact from 2018 AUAR	New Impact Identified in AUAR Update
	demand than the maximum demand assumed in the 2013 AUAR. Water supply to the development will be provided by an extension of the City of Brooklyn Park's water main system	lower than the 2018 AUAR Update and the original 2013 AUAR. • The remaining new development will connect to the new 16-inch watermain which was extended to the north in Xylon Avenue North.
Water-Related Land Use Management Districts	None	None
Water Surface Use	No impacts have been identified. The wetlands identified in the 2013 AUAR were determined to not meet wetland criteria by the City in 2015.	None
Erosion and Sedimentation	Same impact as identified in the 2013 AUAR.	None
Water Quality – Stormwater Runoff	For Scenarios 2018-A and 2018-B, the number of wet ponds increased from seven to nine and the infiltration basins increased from four to six compared to what was proposed in the 2013 AUAR.	None
Water Quality – Wastewater	• A new 12-inch sanitary sewer line will extend north through the property and will be reduced to 10" at the intersection with Oxbow Creek Drive. • Total wastewater demand is less for Scenarios 2018-A and 2018-B (1.11 CFS) compared to the maximum peak flow demand in the 2013 AUAR (1.90 CFS).	• The 12-inch sanitary sewer line has been constructed on site. • The total wastewater demand for the remaining area is less than the maximum demand assumed in the 2018 update.
Geologic Hazards and Soil Conditions	Same impact as identified in the 2013 AUAR.	None
Solid Wastes, Hazardous Wastes, Storage Tanks	With no residential buildings proposed in either Scenario 2018-A or 2018-B, municipal solid waste would be reduced by 3,750 pounds per day or 684 tons per year.	None
Traffic	Less impact on surrounding roadways than identified in the 2013 AUAR.	Overall impact of the development on the surrounding roadway network is anticipated to be slightly lower than was previously estimated in the 2018 AUAR, with most mitigation changes from the previous AUAR still

Resource Area	Potential Impact from 2018 AUAR	New Impact Identified in AUAR Update
		being recommended but others are not believed to be necessary
Vehicle-Related Air Emissions	• Same impact as identified in the 2013 AUAR.	None
Stationary Source Air Emissions	None	None
Dust, Odors, Noise	• Noise levels are anticipated to exceed both the MPCA thresholds and the voluntary thresholds at two of 14 modeled sites. The noise levels are anticipated to exceed the voluntary thresholds only at four additional sites, totaling six impacted sites. • A noise barrier will be constructed to mitigate the noise impacts from the proposed development.	None
Sensitive Resources	All three development scenarios show a new public road that will end at the south edge of the property that crosses the Rush Creek Trail.	None
Adverse Visual Impacts	None	None
Impact on Infrastructure and Public Services	Same impact as identified in the 2013 AUAR.	None
Cumulative Potential Effects	None	None
Other Potential Environmental Impacts	None	None

5. Mitigation Summary and Update

The mitigation measures developed in the AUAR process are outlined in Table 7, including a progress update or changes to the mitigation plan. The actual cost of the improvements on the project site will be evaluated through development agreements.

Table 7: Mitigation Summary

Resource Area	Mitigation	Responsible Party	Status			
			Ongoing from 2013 AUAR	Modified from 2013 AUAR	Modified from 2018 AUAR	2043 AUAR Update
Land Use	If Scenario 2013-C is developed, a Comprehensive Plan amendment will be required for adding residential land use to the site.	Developer will work with the City of Brooklyn Park			X	No longer applicable
Fish, Wildlife, and Ecologically Sensitive Resources	DNR Blanding's Turtle Fact Sheet will be provided to all contractors working on site so that the appropriate measures can be followed if turtles are encountered during construction.	Developer			X	In progress
	A grade separated crossing will be added for the Rush Creek Trail.	City of Brooklyn Park			X	Completed
Stormwater Management	The project will pose increased amounts of phosphates and other typical components of urban runoff. It will be treated in numerous on-site detention ponds and infiltration basins.	Developer		X		In progress
	The project requires a new storm sewer system, and infiltration rates are generally very high. All stormwater for this site is expected to be captured entirely on-site; therefore, ponds and basins are designed to capture 100-year back-to-back storms, with no flow leaving the site.	Developer	X			In progress
	Water quality and stormwater runoff for site development	Developer	X			In progress

Resource Area	Mitigation	Responsible Party	Status			
			Ongoing from 2013 AUAR	Modified from 2013 AUAR	Modified from 2018 AUAR	2043 AUAR Update
	requires review and approval from the Shingle Creek/West Mississippi Watershed Management Commission.					
Traffic	The proposed development will increase traffic on roadways near the study area. Mitigation will include the following: Add an extended dual left turn lane at the intersection of US 169 & 109th Avenue N.	MnDOT/City of Brooklyn Park/City of Champlin	X			Still applicable – to be constructed in 2026
	Install a traffic signal at the intersection of 109th Avenue / Xylon Ln – Xylon Ave in 2025 as part of the 109th Avenue Reconstruction Project	Developer	X			Still applicable – to be constructed in 2025
	Install traffic signals and turn lanes at the Int's of Winnetka Ave / Oxbow Cr Dr and 101st Ave / Xylon Ave when warranted	Developer, City of Brooklyn Park, Hennepin County				Still applicable – not constructed
	Installing turn lane and traffic signal at the intersection of Winnetka Avenue N & 114th Avenue N.	City of Champlin/Hennepin County	X			Not applicable
	Installing roundabout at the intersection of 109th Avenue N & Jefferson Highway N.	City of Brooklyn Park/City of Champlin		X		Still applicable – to be constructed in 2026
	Constructing second northbound lane along NB Winnetka Avenue N between Oak Grove	Developer (absent other benefiting developments)			X	Not applicable

Resource Area	Mitigation	Responsible Party	Status			
			Ongoing from 2013 AUAR	Modified from 2013 AUAR	Modified from 2018 AUAR	2043 AUAR Update
	Parkway and MN 610 (WB) ramps.					
	Constructing the interchange at US 169 & 101st Avenue North	City of Brooklyn Park/ MnDOT/ Developer	X			Completed
	Connecting Xylon Avenue across the Three Rivers Trail Corridor to 101st Avenue North.	Developer (absent other benefiting developments)		X		Completed
	Travel Demand Management Strategies for the NorthPark Business Center.	Developer and Individual Businesses	X			In progress
Odors, Noise and Dust	Measures to decrease noise levels in the vicinity of the development include: • Reduction of speed limit along noise-sensitive sections of local roadways	City of Brooklyn Park	X			In progress
	• Installation and maintenance of a noise barrier (e.g., berms, trees, walls)	Developer	X			In progress
Construction	Impacts due to noise will be mitigated by using properly muffled equipment and limiting hours of construction.	Developer	X			In progress
	Dust will be controlled using Best Management Practices (BMPs).	Developer	X			In progress
	Erosion will be controlled using BMPs to minimize damage.	Developer	X			In progress
	Street cleaning	Developer	X			In progress
Infrastructure and Public Services	Both City water and sewer will be extended into the NorthPark Business Center.	The City of Brooklyn Park will provide water service to the site.	X			Completed

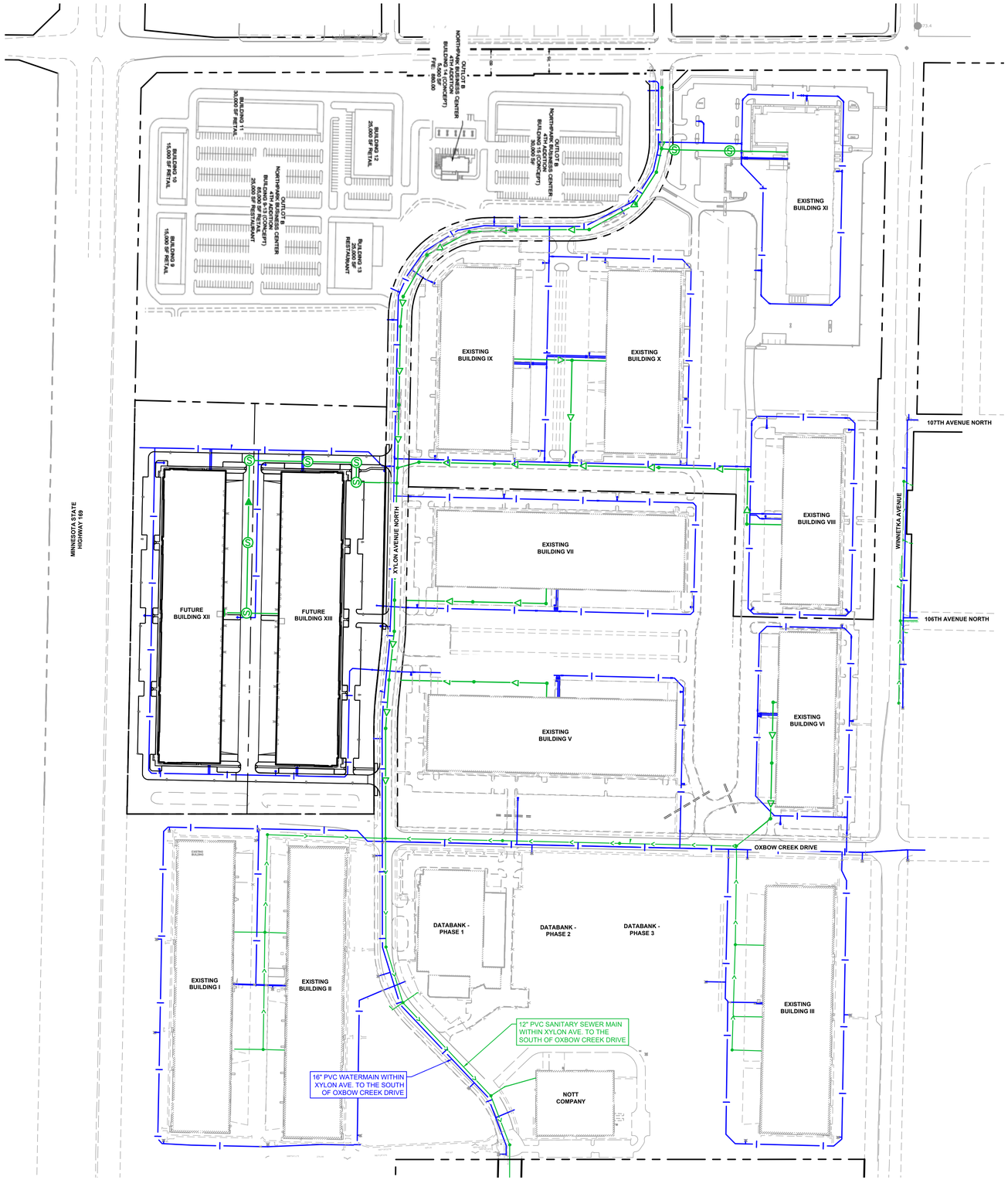
Resource Area	Mitigation	Responsible Party	Status			
			Ongoing from 2013 AUAR	Modified from 2013 AUAR	Modified from 2018 AUAR	2043 AUAR Update
	A new water tower and/or City water network improvements will be required to service the development before full build-out is complete.	City of Brooklyn Park will work with the developer on the design and schedule of this.	X			In progress

6. AUAR Update Review

Pursuant to Minnesota Rules, part 4410.3610, subpart 7, this AUAR update is available for a comment period of 10 business days. Once the comment period is over and if no objections are filed by state agencies or the Metropolitan Council, the City of Brooklyn Park will adopt the AUAR Update. The NorthPark Business Center AUAR will remain valid for an additional five years from the adoption date.

Attachment A

Existing Conditions and Proposed 2024 Scenario



NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

BUILDING NAME	PARCEL	TOTAL AREA	INITIAL IMPERVIOUS	TOTAL FUTURE IMPERVIOUS	IMPERVIOUS COVERAGE
NORTH PARK I	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER	13.63 AC 593,723 SF	10.61 AC 462,172 SF	10.61 AC 462,172 SF	77.84%
NORTHPARK II	LOT 2, BLOCK 2, NORTHPARK BUSINESS CENTER	15.23 AC 663,419 SF	8.12 AC 353,707 SF	8.12 AC 353,707 SF	53.32%
NOTT COMPANY	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SECOND	6.73 AC 293,159 SF	2.87 AC 125,017 SF	4.98 AC 216,929 SF	74.00%
NORTHPARK III	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER THIRD	13.42 AC 584,575 SF	10.18 AC 443,441 SF	10.18 AC 443,441 SF	75.86%
DATABANK PHASE 1-3	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER FOURTH	14.41 AC 627,700 SF	4.17 AC 181,645 SF	11.50 AC 500,940 SF	79.81%
NORTHPARK V	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER FIFTH	16.60 AC 723,096 SF	0.00 AC 0 SF	11.18 AC 487,001 SF	67.35%
NORTHPARK VI	LOT 2, BLOCK 1, NORTHPARK BUSINESS CENTER FIFTH	8.19 AC 356,756 SF	0.00 AC 0 SF	6.11 AC 266,152 SF	74.60%
NORTHPARK VII	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SIXTH	13.44 AC 585,446 SF	0.00 AC 0 SF	10.88 AC 473,933 SF	80.95%
NORTHPARK VIII	LOT 3, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	7.75 AC 337,590 SF	0.00 AC 0 SF	6.25 AC 272,250 SF	80.65%
NORTHPARK IX	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	9.54 AC 415,562 SF	0.00 AC 0 SF	7.50 AC 326,700 SF	78.62%
NORTHPARK X	LOT 3, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	12.47 AC 543,193 SF	0 AC 0 SF	8.50 AC 370,260 SF	68.16%
NORTHPARK XI	LOT 4 & 5, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	16.33 AC 711,512 SF	0.00 AC 0 SF	9.61 AC 418,612 SF	58.85%
NORTHPARK XII & XIII	LOT 1, BLOCK 1 NORTHPARK BUSINESS CENTER EIGHTH	27.46 AC 1,196,158 SF	0 AC 0 SF	18.82 AC 819,737 SF	68.54%
CUMULATIVE DEVELOPED ACRES		175.20 AC	35.95 AC	124.23 AC	71.17%
UNDEVELOPED AREAS OF NORTHPARK		32.59 AC 1,419,620 SF	0.00 AC 0 SF	21.20 AC 923,472 SF	65.05%
NET TOTAL NORTHPARK AREA		207.79 AC	35.95 AC	145.44 AC	69.99%

No.	REVISIONS	DATE	BY

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PRELIMINARY - NOT FOR CONSTRUCTION

KHA PROJECT 160846032
DATE 9/22/2023
SCALE AS SHOWN
DESIGNED BY TDS
DRAWN BY CPH
CHECKED BY TDS

NORTHPARK DEVELOPMENT
OVERALL UTILITY EXHIBIT

NORTHPARK BUSINESS CENTER
PREPARED FOR SCANNELL PROPERTIES
BROOKLYN PARK MN

SHEET NUMBER
EX-A

Attachment B

NorthPark Business Center Traffic Analysis Report

Attachment C
Traffic Analysis

NorthPark Business Center

AUAR Update

BROOKLYN PARK, MINNESOTA

DECEMBER 2023

Prepared By:

Kimley»Horn

Contents

TABLES

EXHIBITS (SEE APPENDIX A)

1.0 INTRODUCTION

This report serves as an updated traffic analysis for the NorthPark Business Center Alternative Urban Area Review (AUAR) which was originally completed in 2013 and updated in 2018. The NorthPark Business Center is surrounded by TH 169, Hennepin CSAH 103, the Rush Creek Regional Trail corridor, and 109th Avenue North in the City of Brooklyn Park, Minnesota. The location of the development is provided in **Exhibit 1**.

The forthcoming traffic analysis focused on two analysis years: the approximate completion date of the remaining development (2028) and a long term date (2040) which will demonstrate the effects of the development on the adjacent roadway system with future growth.

1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the AUAR guidelines. The following specific information, per AUAR recommended content, should be provided:

- *A description and map of the existing and proposed roadway system, including state, regional, and local roads to be affected by the development of the AUAR area. This information should include existing and proposed roadway capacities and existing and projected background (i.e. without the AUAR development) traffic volumes;*
- *Trip generation data – trip generation rates and trip totals – for each major development scenario broken down by land use zones and/or other relevant subdivisions of the area. The projected distributions onto the roadway system must be included;*
- *Analysis of impacts of the traffic generated by the AUAR area on the roadway system, including: comparison of peak period total flows to capacities and analysis of Level of Service and delay times at critical points (if any);*
- *A discussion of structural and non-structural improvements and traffic management measures that are proposed to mitigate problems.*

Note: in the above analyses the geographical scope must extend outward as far as the traffic to be generated would have a significant effect on the roadway system and traffic measurements and projections should include peak days and peak hours, or other appropriate measures related to identifying congestion problems, as well as ADTs (average daily traffic).

2.0 PROPOSED DEVELOPMENT

2.1 SITE LOCATION

The NorthPark Business Center is in the City of Brooklyn Park, Minnesota, and bordered by 109th Avenue North to the north, CSAH 103 (Winnetka Avenue) to the east, the Rush Creek Regional Trail corridor to the south, and TH 169 to the west. The overall project location is shown in **Exhibit 1**. The overall size of the property is approximately 230 acres.

2.2 SITE CIRCULATION

Currently, access to the site is provided via four connections: Oxbow Creek Drive & CSAH 103, Xylon Avenue N & 101st Avenue N, Xylon Avenue N & 109th Avenue N, and an access point off CSAH 103 making up the west approach of the intersection with 107th Avenue N.

Site traffic accesses the public roadway network primarily via the connections along Xylon Avenue North and Oxbow Creek Drive through the development.

2.3 EXISTING AND FUTURE LAND USE

The 2018 AUAR included three development plans, two of which (scenarios 1 and 2) proposed the buildout of a major Fulfillment center along with industrial park. Scenario 2 also included retail space along with a restaurant and gas station. The third scenario was predominately industrial park with a large multi-family housing development as well as some possible specialty retail. **Table 1** provides a summary of the three development scenarios that were considered in the 2018 AUAR.

TABLE 1: 2018 UPDATED AUAR DEVELOPMENT SCENARIOS

Development Scenario 1	
Fulfillment Center	2,561,000 Square Feet
LUC 130 – Industrial Park	1,424,000 Square Feet
Development Scenario 2	
Fulfillment Center	2,561,000 Square Feet
LUC 130 – Industrial Park	1,150,000 Square Feet[1]
LUC 820 – General Retail	115,000 Square Feet
LUC 932 – Restaurant	25,000 Square Feet
LUC 944 – Gas Station	10 Fueling Positions
Development Scenario 3	
LUC 130 – Industrial Park	3,026,000 Square Feet
LUC 220 – Multi-Family Housing	600 Dwelling Units
LUC 820 – Specialty Retail	8,500 Square Feet

Since the completion of the 2018 AUAR, much of the AUAR area has been developed. The northwest corner of the AUAR site is the only remaining portion of the site to not be approved or constructed. Therefore, only one development scenario will be analyzed as the build scenario.

At the time of the collection of this data, some buildings at the site had already been built or were under construction but were not generating trips at the rate they would if operating normally (Buildings 10-13 and the expansion of building 4 shown in **Exhibit 1**). These are considered vested developments and are included in all scenarios except for the existing traffic scenario. The trip generation of vested trips is shown in **Table 6** below and the distribution of these vested trips is shown in **Exhibit 4.** The overall trip assignment of vested trips is shown in **Exhibit 5**.

Table 2 provides a summary of the land uses assumed for the proposed development (located in the northwest corner of the AUAR area), which is significantly changed from the 2018 AUAR. Included in the table is industrial park which has already been built but was not yet operational (i.e., generating traffic) as of the collection of traffic data. It should be noted that the lease information for each building was provided by the developer. However, the lease numbers do not necessarily correlate to fully operational use of the buildings.

For the development scenario, it was assumed that the Short-Term (2028) would include all trip generation for the site. The development is anticipated to be completed by the Short-Term study year (2028). The Long-Term study scenario includes only added background growth.

TABLE 2: PROPOSED DEVELOPMENT SUMMARY

Building Number	Land Use / Description	Building Status as of December 2023[3]	Operational Intensity (SF)	Non-Operational / Planned Intensity (SF)	Proposed Intensity (SF)
1	Industrial Park	Fully Leased	202,000	-	-
2	Industrial Park	Fully Leased	202,000	-	-
3	Industrial Park	Fully Leased	210,000	-	-
4	Industrial Park	Partially Operational[1]	64,000	192,000	-
5	Industrial Park	Fully Leased	221,000	-	-
6	Industrial Park	Fully Leased	120,000	-	-
7	Industrial Park	Fully Leased	221,000	-	-
8	Industrial Park	Fully Leased	115,000	-	-
9	Industrial Park	Fully Leased	156,000		-
10	Industrial Park	Completed[2]	-	157,000	-
11	Industrial Park	Completed[2]	-	120,000	-
12	Industrial Park	Planned	-	210,000	-
13	Industrial Park	Planned	-	210,000	-
Nott Company	Industrial Park	Fully Leased	61,000	-	-
Future NW Corner (2024-2028)	Retail/Restaurant/Business Park	Proposed	-	-	140,000
	Gas Station		-	-	*10 Positions*
TOTAL			**1,572,000**	**889,000**	**140,000**
LUC 130 - Industrial Park			**2,461,000**		
LUC 821 - Shopping Plaza			**140,000**		
LUC 945 - Gas Station			**10 Fueling Positions**		

[1]*Partially built with 64,000 square feet fully operational and the remaining 192,000 square feet not yet constructed.*
[2]*Buildings have been completed and begun leasing but are not operational from a traffic perspective.*
[3]*Building lease information was provided by the developer.*

3.0 EXISTING CONDITIONS

3.1 PHYSICAL CHARACTERISTICS

The existing roadway network within the study area includes TH 169, 109th Avenue North, 101st Avenue North, CSAH 103, Oak Grove Parkway, Oxbow Creek Drive, and Xylon Avenue North. Several streets that compose the existing roadway network will carry trips generated by the AUAR development. Major characteristics of these roadways are summarized in **Table 3**.

TH 169 is a north-south US Highway that runs along the western boundary of the AUAR development. Since the previous AUAR, the at-grade intersection of Hwy 169 and 101st Avenue N has been converted into a full movement interchange.

109th Avenue North is an east-west roadway that runs along the northern boundary of the AUAR development. Since the previous AUAR, exclusive left and right turn lanes have been added along the road at the intersection with Xylon Avenue.

101st Avenue North is an east-west roadway that runs south of the AUAR development. 101st Avenue North has been expanded to four lanes at the interchange with TH 169 and connects across TH 169.

CSAH 103 (Winnetka Avenue N) is a north-south roadway that runs along the eastern boundary of the AUAR development. Additional turn lanes along CSAH 103 have been added at Oxbow Creek and 107th Avenue, and the CSAH 103 approaches to 109th Avenue have been restriped to exclusive left turn lanes since the previous AUAR.

Oxbow Creek Drive is an east-west collector roadway that serves as one of three major entrances to the site. It is a two-lane undivided roadway.

Xylon Avenue N is a north-south collector roadway which has been completed since the last AUAR to connect 101st Avenue N to 109th Avenue north at the previously existing intersection with Xylon Lane N. Note that Xylon Avenue N is also the name of a roadway which intersects 109th Ave to the north and is roughly aligned longitudinally with the Xylon Avenue N within the AUAR area but they do not connect directly to each other.

TABLE 3: SUMMARY OF EXISTING ROADWAY CONDITIONS

STREET NAME	STREET NUMBER	FUNCITONAL CLASSIFICATION	NUMBER OF LANES	POSTED SPEED	MEDIAN
TH 169	TH 169	Principal Arterial (1)	4	55 mph	Yes
109th Avenue North	--	"B" Minor Arterial (2)	2	40 mph	No
101st Avenue North	--	"A" Minor Expander (2)	2 - 4	40 mph	No (3)
Winnetka Avenue North	CSAH 103	"A" Minor Reliever (1)	2	50 mph	No
Oxbow Creek Drive	--	"B" Major Collector (1)	2	40 mph	No

(1) Metropolitan Councils' Functional Classification Plan

(2) City of Brooklyn Park 2040 Draft Comprehensive Plan

(3) Medians on bridge over TH 169 only

3.2 STUDY AREA

Based on discussion with City staff, the following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections. Some intersections which were studied in the 2018 AUAR update are not being studied in this update. This is because the trip generation projected from the proposed development is expected to be substantially smaller than the previous reports anticipated and thus the extent of impacts brought about by the development is expected to be smaller. Additionally, the TH 169 Ramps at 101st Avenue were completed

as planned and have opened since the last update. **Exhibit 2** summarizes the existing geometry and intersection control.

- TH 169 & 109th Avenue North (signalized)
- 101st Avenue N & TH 169 SB Ramp (signalized)
- 101st Avenue N & TH 169 NB Ramp (signalized)
- 101st Ave N & Xylon Avenue N (NB/SB stop-controlled)
- CSAH 103/CSAH 103 & 109th Avenue North (signalized)
- CSAH 103 & 107th Avenue North (EB/WB stop-controlled)
- CSAH 103 & Oxbow Creek Drive (EB/WB stop-controlled)
- CSAH 103 & 101st Avenue North (EB stop-controlled)
- 109th Avenue North & Xylon Lane North/Xylon Avenue (NB/SB stop-controlled)
- Xylon Avenue N & Oxbow Creek Drive (EB/WB stop-controlled)

3.3 EXISTING TRAFFIC VOLUMES

Average Annual Daily Traffic (AADT) volumes were obtained from the MnDOT's *Transportation Data and Analysis Traffic Volume Maps*. Daily volumes for existing roadways within the study area are summarized in **Table 4**. It should be noted that these volumes vary from 2017 to 2022 based on the data source.

TABLE 4: EXISTING AADT VOLUMES

ROADWAY	FROM	TO	AADT VOLUME 2017 - 2022
TH 169	North of TH 610	114th Avenue North	45,701 *(2019)*
	114th Avenue North	120th Avenue North	41,900 *(2019)*
CSAH 103/ CSAH 103	South of TH 610	TH 610	13,300 *(2017)*
	TH 610	101st Avenue North	10,900 *(2022)*
	101st Avenue North	114th Avenue North	6,600 *(2019)*
109th Avenue North	West of TH 169	TH 169	9,300 *(2019)*
	TH 169	CSAH 103	10,700 *(2019)*
	CSAH 103/CSAH 103	East of CSAH 103/CSAH 103	8,200 *(2019)*
101st Avenue North	West of TH 169	TH 169	1,300 *(2019)*
	TH 169	CSAH 103	1,350 *(2019)*
Oxbow Creek Drive North	Xylon Ave N	CSAH 103	5,600 *(2022)*
	CSAH 103	105th Trail North	2,375 *(2021)*

Kimley-Horn collected AM and PM peak hour turning movement counts (TMCs) at all study intersections on Thursday, September 14, 2023. The AM peak hour of the network was determined to be 7:00 AM to 8:00 AM while the network PM peak hour was determined to be 4:00 to 5:00 PM. **Exhibit 3** provides a summary of the 2023 Existing weekday AM and PM peak hour turning movement volumes.

4.0 FUTURE CONDITIONS

At the time of the collection of this data, some buildings at the site had already been built or are already approved/in the construction process but are not yet generating trips to their potential. These buildings are shown in yellow in **Exhibit 1** and are considered to be vested developments that are included in all future

traffic scenarios (including the No-Build scenarios). The distribution of these vested trips is shown in **Exhibit 4** while the overall trip assignment of vested trips is shown in **Exhibit 5**. The AUAR traffic analysis focused on two analysis years: Short-Term (2028) and Long-Term (2040). Following is a discussion of planned future roadway and intersection improvements within the project study area and volume development for 2040 no-build conditions. There are multiple major roadway improvements in the area which will affect the geometry and control of the adjacent intersections when they are completed.

4.1 FUTURE PLANNED ROADWAY IMPROVEMENTS

There are several roadway improvements planned to be constructed within the project's study area.

The following planned roadway project was assumed to be in place for the 2028 analysis year:

- **109th Avenue N Roadway improvement** – The Brooklyn Park 2040 Comprehensive Plan lists upgrading 109th Avenue to a four-lane divided roadway as a high priority. This improvement is planned to be carried out in the years 2025 and 2026. It would also include dual left turn lanes and extended right turn lanes at the intersection of TH 169 & 109th Avenue as was recommended in the 2018 update of this report. Because this is anticipated to be completed by the Opening Year (2028), it is included in all future scenarios.

The following planned roadway project was assumed to be in place for the 2040 analysis year:

- **BLRT Roadway Improvement** – The Blue Line Rail Transit extension will have a park and ride station built in the area south of site which will affect the roadways extensively. The intersection of 101st Avenue & CSAH 103 will be removed completely with 101st Avenue being realigned to join Oak Grove Parkway. The intersection of CSAH 103 & Oak Grove Parkway is shifted north and reconstructed as two intersections (separate intersections for northbound and southbound) with linked traffic signals. This is not anticipated to be completed by the Opening Year (2028), so it is included in Horizon Year (2040) scenarios only.

It was also stated in the city's comprehensive plan that CSAH 103 (Winnetka Avenue N) may be upgraded to a 3-lane road by 2040. Along with the development of the Northpark Business Center, the roadway has already seen the addition of full left-turn lanes at all intersections.

4.2 FUTURE TRAFFIC FORECASTING

Background traffic volumes were developed for the study intersections during the weekday AM and PM peak hours for both 2028 and 2040 No-Build traffic conditions. The following provides a summary of the background volume development for both analysis years.

2028 No-Build Volume Development

Background traffic volumes for Short-Term (2028) conditions were developed based on applying a background growth rate of 1.0% annually, as discussed with City staff and consistent with the growth used in the previous AUAR. The growth rate was applied to the existing turning movement volumes at the study intersections.

Exhibit 6 provides the 2028 No-Build turning movement volumes at the study intersections for weekday AM and PM peak hours. These volume forecasts include traffic from the full build-out of the 889,000 square feet of industrial park that is already constructed or planned for construction within the NorthPark

Business Center. The existing buildings are approximately 80% occupied. Traffic was generated, distributed, and assigned to the area roadways for the buildout of the 889,000 square feet of planned or non-operational industrial park. It should be noted that the traffic forecasts shown in **Exhibit 6** are not capacity restrained.

2040 No-Build Volume Development

Based on a review of the City's 2040 Comprehensive Plan and associated travel demand model, daily traffic growth is anticipated to grow annually by +/- 1.7% surrounding the NorthPark Business Center. This growth rate was estimated by comparing the cumulative AADT volumes along TH 169, CSAH 103, 109th Avenue North, and 101st Avenue for 2015 and 2040. These traffic forecasts include the proposed NorthPark Business Center, so to determine the actual background growth, the daily traffic generation forecasts for the NorthPark Business Center were reduced from the cumulative 2040 daily traffic volumes. When comparing this adjusted cumulative volume to the 2015 cumulative volume the area roadways are anticipated to grow at 1.0% annually. Therefore, the 2040 No-Build traffic volumes were developed by growing the 2028 No-Build background turning movement volumes to 2040 using a 1.0% annual growth. This growth rate is unchanged from the previous AUAR.

Exhibit 7 provides the 2040 No-Build turning movement volumes at the study intersections for weekday AM and PM peak hours. These volume forecasts include traffic from the full build-out of the 889,000 square feet of industrial park that is already constructed/planned within the NorthPark Business Center. It should be noted that the 2040 no-build volumes do not account for additional development near the AUAR site such as development south of 101st Avenue. If/when that land is developed a sperate traffic study should be competed to determine what mitigation would be required.

4.3 ANTICIPATED TRIP GENERATION

Trip generation for the 2018 AUAR was calculated based on the Institute of Transportation Engineers (ITE) *Trip Generation* 10th Edition. **Table 5** provides a summary of the anticipated trips generated by each development scenario included in the 2018 AUAR. These trip estimates are provided for the long-term development plans.

TABLE 5: TRIP GENERATION FORECAST (2018 AUAR)

Development Scenario	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Development Scenario 1	13,680	1,805	220	2,025	1,300	1,870	3,200
Development Scenario 2	19,900	1,930	345	2,275	1,665	2,110	3,775
Development Scenario 3	17,795	1,095	470	1,565	620	1,250	1,870

Table 6 provides a summary of the trip generation forecast for the proposed development using the existing counts and the Institute of Transportation Engineers (ITE) *Trip Generation* 11th Edition. Based on a comparison of **Table 5** and **Table 6**, total network trip generation for the full buildout of the Northpark Business Center AUAR area is anticipated to be significantly lower in the AM and PM peak hours than what was determined in the 2018 AUAR.

TABLE 6: TRIP GENERATION SUMMARY

ITE LUC	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Industrial Park (Existing)	**1572 KSF**	**Unknown[1]**	**268**	**98**	**366**	**179**	**340**	**519**
LUC 130 - Industrial Park (Vested)[2]	**889 KSF**	**2,996**	**245**	**57**	**302**	**66**	**236**	**302**
LUC 821 - Shopping Plaza (Proposed)	*140 KSF*	*9,453*	*150*	*92*	*242*	*292*	*305*	*597*
LUC 945 - Gas Station (Proposed)	*10 Pumps*	*2,651*	*80*	*81*	*161*	*92*	*92*	*184*
Retail and Gas Pass-By Trips (40%)		*4,842*	*92*	*69*	*161*	*153*	*159*	*312*
Net New Retail and Gas Trips		**7,262**	**138**	**104**	**242**	**230**	**238**	**469**
Total Build Trips		**Existing + 15,100**	**743**	**328**	**1071**	**629**	**973**	**1602**

Note 1: 24-hour Turning Movement counts were not collected so the daily trips generated by the existing development cannot be determined.
Note 2: Approved, Under Construction or Completed but not yet operational/generating trips. These are considered the vested site trips.

4.4 PROPOSED TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of site traffic for the proposed development (the northwest corner of the site which is primarily retail and gas and excludes vested trips) onto the study area roadway network and intersections was generally based on the information provided in the 2018 AUAR. The 2018 AUAR used Met Council's regional travel demand model to determine the global distribution of site traffic. Following provides the general global distribution based on the cardinal directions; 22% to/from the north, 21% to/from the west, 30% to/from the east and 27% to/from the south.

Proposed site traffic was assigned to the surrounding roadway network and study intersections by applying the trip distribution provided in **Exhibit 8** to the trip generation forecast for the Development Scenario as provided in **Table 6**. The vested site trips are not included in project traffic. **Exhibit 9** provides the project trip assignment for the remaining developments. It should be noted that these exhibits do not include development traffic from the build-out of the existing/under construction 889,000 square feet of development which is not yet operational but is accounted for separately as the vested traffic. Furthermore, since the remaining trips are generated from retail land uses, pass by trips were also calculated to get a more precise depiction of the traffic in the network. The pass by distribution applied to the network is shown in **Exhibit 10** and the resultant pass by trips on the adjacent roadways are shown in **Exhibit 11**.

4.5 TOTAL TRAFFIC

Exhibit 12 provides the 2028 Build total traffic volumes and **Exhibit 13** provides the 2040 Build total traffic volumes. These were determined by adding the background traffic volumes to the project traffic volumes.

5.0 INTERSECTION CAPACITY ANALYSIS

5.1 ANALYSIS SCENARIOS

As part of the 2018 AUAR, the Existing Year was assumed to be 2018, and the future years included Short-Term (2021) and Long-Term (2040). As part of this update to the traffic analysis, the study focused on 2023 Existing, Year 2028, and Year 2040 conditions. **Table 7** describes the conditions analyzed for the updated AUAR traffic analysis.

TABLE 7: ANALYSIS CONDITION SUMMARY

CONDITION	VOLUME AND ROADWAY NETWORK ASSUMPTIONS
Condition 1 2023 Existing	**VOLUMES:** Existing traffic volumes, as counted in September 2023.
	ROADWAY NETWORK: Existing Roadway Network
Condition 2 2028 No-Build	**VOLUMES:** Condition 1 traffic volumes grown at 1% annually to 2028; Addition of approved development traffic (889,000 SF Industrial Park);
	ROADWAY NETWORK: Existing Roadway Network plus 109th Avenue corridor improvements.
Condition 3 2028 Build	**VOLUMES:** Condition 2 traffic volumes; Addition of complete Northpark Business Center Traffic including commercial and gas station.
	ROADWAY NETWORK: Existing Roadway Network plus 109th Avenue corridor improvements.
Condition 4 2040 No-Build	**VOLUMES:** Condition 2 background traffic volumes grown at 1% annually from 2028 to 2040.
	ROADWAY NETWORK: Existing Roadway Network with 109th Avenue corridor improvements and BLRT improvements.
Condition 5 2040 Build	**VOLUMES:** Condition 4 traffic volumes with addition of remaining NorthPark traffic (Industrial Park, Retail, and Gas Station).
	ROADWAY NETWORK: Existing Roadway Network with 109th Avenue corridor improvements and BLRT improvements.

5.2 LEVEL OF SERVICE OVERVIEW

An intersection capacity analysis was performed at the study intersections for the five (5) scenarios listed in **Table 7**. The capacity analysis was performed for the weekday AM and PM peak hours, and traffic modeling software was used to determine intersection delay and level of service (LOS).

LOS is a quantitative measure used by traffic engineers to describe the operations of an intersection or along a roadway segment. 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 in the Twin Cities Metro area. Each study intersection was analyzed based on the *Highway Capacity Manual using Synchro 11/SimTraffic software.* For unsignalized intersections, LOS was reported for the worst approach and the overall intersection. This was done to ensure that the mainline LOS did not hide any potential issues on the minor street. The overall intersection LOS was reported for signalized intersections.

Table 8 provides the LOS grading criteria for unsignalized and signalized intersections. For the purposes of this traffic analysis, it was assumed that acceptable level of service for the overall intersection is LOS D or better and the acceptable level of service for an individual movement is LOS E or better.

TABLE 8: LEVEL OF SERVICE GRADING CRITERIA

Level of Service	Average Control Delay (seconds/vehicle) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

5.3 2023 EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for 2023 Existing traffic conditions at the study intersections to determine existing operating conditions. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes provided in **Exhibit 3**. Existing intersection control and geometry was assumed for this analysis.

Table 9 provides a summary of the capacity analysis at the study intersections. Based on the analysis, all intersections are operating at acceptable LOS during the AM and PM peak hours except for the intersection of TH 169 & 109th Avenue North. This intersection is anticipated to operate at LOS E during the AM peak hour.

TABLE 9: EXISTING (2023) CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
101st Ave & 169 SB Ramps	Signal	3.2	A	3.2	A
101st Ave & 169 NB Ramps	Signal	4.2	A	12.8	B
101st Ave & Xylon Ave	Side Street Stop	3.8 / 1.5	A / A	9.2 / 1.2	A / A
CSAH 103 & 101st Ave	Side Street Stop	11.0 / 4.6	B / A	30.1 / 11.1	D / B
CSAH 103 & Oxbow Creek Dr	Side Street Stop	17.2 / 5.4	C / B	14.8 / 4.3	B / A
CSAH 103 & 107th Ave	Side Street Stop	5.6 / 2.6	A / A	9.1 / 1.9	A / A
CSAH 103 & 109th Ave	Signal	28.4	C	29.8	C
109th Ave & Xylon Lane	Side Street Stop	9.5 / 2.0	A / A	13.1 / 2.8	B / A
US 169 & 109th Ave	Signal	**79.0**	**E**	53.7	D
Xylon Ave & Oxbow Creek	Side Street Stop	6.3 / 1.2	A / A	6.4 / 2.8	A / A

Note 1: Overall intersection delay and LOS reported for signal control. For side-street stop control, delay and LOS are reported for the worst movement followed by the overall intersection. Stop controlled intersections as part of a systemwide network, and accounts for gaps created by upstream and downstream intersections.

5.4 YEAR 2028 NO-BUILD LEVEL OF SERVICE ANALYSIS

A capacity analysis was conducted for Year 2028 No-Build traffic conditions at the study intersections to determine baseline conditions for Short-Term (2028). The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes provided in **Exhibit 6**. These volumes were developed by adding together the following:

- Existing Volumes (**Exhibit 3**)
- Background growth from 2023 to 2028
- Vested Development Traffic (**Exhibit 5**)

Analysis was carried out with intersection geometry and control including the 109th Avenue improvements which are anticipated to be completed by 2028 as shown in **Exhibit 14**. Signal timings at the study intersections were adjusted to account for the increase in traffic volumes.

Table 10 provides a summary of the capacity analysis at the study intersections. Based on the analysis, all intersections are anticipated to operate at acceptable LOS except for the following intersections:

- TH 169 & 109th Avenue North (AM peak hour)
- 101st Avenue & Xylon Avenue (PM peak hour, southbound left turn movement)
- CSAH 103 & 101st Avenue (PM peak hour)

TABLE 10: 2028 NO-BUILD CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
101st Ave & 169 SB Ramps	Signal	3.9	A	3.8	A
101st Ave & 169 NB Ramps	Signal	5.8	A	10.5	B
101st Ave & Xylon Ave	Side Street Stop	18.1 / 2.9	C / A	**40.4 / 5.8**	**E / A**
CSAH 103 & 101st Ave	Side Street Stop	18.7 / 6.1	C / A	**100+ / 37.6**	**F / E**
CSAH 103 & Oxbow Creek Dr	Side Street Stop	30.3 / 8.4	D / A	15.1 / 4.9	C / A
CSAH 103 & 107th Ave	Side Street Stop	12.7 / 2.7	B / A	10.2 / 2.0	B / A
CSAH 103 & 109th Ave	Signal	24.9	B	24.6	B
109th Ave & Xylon Lane	Signal	19.3	B	24.5	B
US 169 & 109th Ave	Signal	**80.1**	**F**	46.7	D
Xylon Ave & Oxbow Creek	Side Street Stop	7.4 / 1.6	A / A	7.3 / 2.4	A / A

Note 1: Overall intersection delay and LOS reported for signal control. For side-street stop control, delay and LOS are reported for the worst movement followed by the overall intersection. Stop controlled intersections as part of a systemwide network, and accounts for gaps created by upstream and downstream intersections.

5.5 YEAR 2028 BUILD LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for Year 2028 Build traffic conditions at the study intersections to determine if the addition of project traffic significantly impacts operating conditions of the study intersections. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes provided in **Exhibit 12**. These volumes were calculated by adding together the following:

- Opening Year (2028) No-Build Traffic Volumes (**Exhibit 6**)
- Primary Site Trips (**Exhibit 9**)
- Pass-By Site Trips (**Exhibit 11**)

Table 11 provides a summary of the capacity analysis at the study intersections. Based on the analysis, all intersections are operating LOS D or better with the exception of the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- 101st & Xylon Ave (PM Peak Hour)
- CSAH 103 & 101st Avenue (PM Peak Hour)
- CSAH 103 & Oxbow Creek Drive

TABLE 11: 2028 BUILD CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
101st Ave & 169 SB Ramps	Signal	4.1	A	4.2	A
101st Ave & 169 NB Ramps	Signal	6.2	A	10.9	B
101st Ave & Xylon Ave	Side Street Stop	13.2 / 3.0	B / A	**47.5 / 8.0**	**E / A**
CSAH 103 & 101st Ave	Side Street Stop	20.7 / 6.0	C / A	**100+ / 45.9**	**F / E**
CSAH 103 & Oxbow Creek Dr	Side Street Stop	**49.4 / 12.0**	**E / B**	15.3 / 5.5	C / A
CSAH 103 & 107th Ave	Side Street Stop	9.7 / 2.6	A / A	8.9 / 2.0	A / A
CSAH 103 & 109th Ave	Signal	26.1	C	25.9	C
109th Ave & Xylon Lane	Signal	18.8	B	21.1	B
US 169 & 109th Ave	Signal	**100+**	**F**	**58.3**	**E**
Xylon Ave & Oxbow Creek	Side Street Stop	8.3 / 1.8	B / A	9.5 / 3.3	A / A

Note 1: Overall intersection delay and LOS reported for signal control. For side-street stop control, delay and LOS are reported for the worst movement followed by the overall intersection. Stop controlled intersections as part of a systemwide network, and accounts for gaps created by upstream and downstream intersections.

5.6 YEAR 2028 MITIGATION LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for Year 2028 traffic conditions to determine mitigation measures necessary to ensure acceptable LOS at the study intersections for 2028 No-Build and 2028 Build conditions. There are no changes to the intersection geometry or control proposed as year 2028 mitigations, as is stated in **Exhibit 14**. The following provides a summary of the mitigation analysis for 2028.

The intersection of 101st Avenue & Xylon Avenue is anticipated to operate at LOS E during the PM peak hour in the model as a direct result of queueing at the intersection of CSAH 103 & 101st Avenue. Operations at the intersection of CSAH 103 & 101st Avenue are unacceptable, with the worst movement being LOS F and the intersection overall being LOS E. This intersection is already planned for improvements including installation of two signals (with the northbound and southbound approaches having separate intersections) in support of the planned BLRT station nearby. Because of this, no further mitigation is recommended here. However, signalization of the 101st Avenue & Xylon Avenue should still be considered if traffic operations are anticipated to be a problem in the future.

The intersection of TH 169 & 109th Avenue is anticipated to operate at LOS F in the AM peak hour and LOS D in the PM peak hour. The intersection is anticipated to operate better, with reduced delays in the PM peak hour and similar delays in the AM peak hour when compared to the Existing (2023) scenario, due to the planned improvements at the intersection and along 109th Avenue. No further mitigations are recommended at the intersection.

The intersection of CSAH 103 & Oxbow Creek Drive is anticipated to operate at an overall LOS B during the AM peak hour, with the worst side-street movement operating at LOS E. While the operations don't

indicate a major issue, the intersection should be carefully observed as the remaining parcels develop and a traffic signal should be installed if it is found to be warranted.

5.7 YEAR 2040 NO-BUILD LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for Year 2040 No-Build traffic conditions at the study intersections to determine baseline conditions for the 2040 analysis year. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes provided in **Exhibit 7**. These volumes were calculated by adding together the following:

- Opening Year (2028) No-Build Traffic Volumes (**Exhibit 6**)
- Background growth from 2028 to 2040
- Adjustment for BLRT roadway realignment

The roadway and intersection network geometry includes the improvements listed in **Table 7** for Condition 4 which includes realignment for the BLRT project as shown in **Exhibit 15**.

Table 12 provides a summary of the capacity analysis at the study intersections. Based on the analysis, all intersections are operating at acceptable LOS except for the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- CSAH 103 & Oxbow Creek Drive (AM peak hour)

Note that the intersection of 101st & Xylon Avenue is anticipated to operate similarly to the 2028 No-Build conditions in terms of overall operations, but the worst side street movement (southbound left) is anticipated to see a slight improvement with the installation of the signal at CSAH 103 & Oak Grove Parkway, and the realignment of the roadway creating more gaps in traffic on 101st Avenue for left turns.

TABLE 12: 2040 NO-BUILD CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
101st Ave & 169 SB Ramps	Signal	5.1	A	4.5	A
101st Ave & 169 NB Ramps	Signal	6.6	A	15.6	B
101st Ave & Xylon Ave	Side Street Stop	17.8 / 35	C / A	33.4 / 8.7	D / A
CSAH 103 & Oak Grove Pkwy	Signal	7.4	A	47.9	D
CSAH 103 & Oxbow Creek Dr	Side Street Stop	**63.9 / 15.2**	**F / C**	20.3 / 6.4	C / A
CSAH 103 & 107th Ave	Side Street Stop	10.6 / 2.9	B / A	9.6 / 2.3	A / A
CSAH 103 & 109th Ave	Signal	27.0	C	26.5	C
109th Ave & Xylon Lane	Signal	19.6	B	24.8	C
US 169 & 109th Ave	Signal	**100+**	**F**	**100+**	**F**
Xylon Ave & Oxbow Creek	Side Street Stop	7.9 / 1.8	A / A	8.9 / 2.7	A / A

Note 1: Overall intersection delay and LOS reported for signal control. For side-street stop control, delay and LOS are reported for the worst movement followed by the overall intersection. Stop controlled intersections as part of a systemwide network, and accounts for gaps created by upstream and downstream intersections.

5.8 YEAR 2040 BUILD LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for Year 2040 Build traffic conditions at the study intersections to determine if the addition of project traffic significantly impacts operating conditions of the study intersections. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes provided in **Exhibit 13**. These volumes were calculated by adding together the following:

- Horizon Year (2040) No-Build Traffic Volumes (**Exhibit 7**)
- Primary Site Trips (**Exhibit 9**)
- Pass-By Site Trips (**Exhibit 11**)

The roadway geometry used for the 2040 No-Build scenario was used for this scenario. **Table 13** provides a summary of the capacity analysis at the study intersections. Based on the analysis, all intersections are operating at acceptable LOS with the exception of the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- CSAH 103 & Oxbow Creek Drive (AM peak hour)
- CSAH 103 & Oak Grove Parkway (PM peak hour)

TABLE 13: 2040 BUILD CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
101st Ave & 169 SB Ramps	Signal	4.9	A	4.6	A
101st Ave & 169 NB Ramps	Signal	6.5	A	11.7	B
101st Ave & Xylon Ave	Side Street Stop	20.9 / 4.5	C / A	20.5 / 8.7	C / A
CSAH 103 & Oak Grove Parkway	Signal	15.2	B	**87.5**	**F**
CSAH 103 & Oxbow Creek Dr	Side Street Stop	**68.5 / 16.3**	**F / C**	29.6 / 9.8	C / A
CSAH 103 & 107th Ave	Side Street Stop	9.4 / 3.0	A / A	9.4 / 2.6	A / A
CSAH 103 & 109th Ave	Signal	26.0	C	27.0	C
109th Ave & Xylon Lane	Signal	18.7	B	21.2	B
US 169 & 109th Ave	Signal	**100+**	**F**	**100+**	**F**
Xylon Ave & Oxbow Creek	Side Street Stop	9.5 / 2.0	A / A	9.4 / 3.6	B / A

Note 1: Overall intersection delay and LOS reported for signal control. For side-street stop control, delay and LOS are reported for the worst movement followed by the overall intersection. Stop controlled intersections as part of a systemwide network, and accounts for gaps created by upstream and downstream intersections.

5.9 YEAR 2040 MITIGATION LEVEL OF SERVICE ANALYSIS

A capacity analysis was performed for Year 2040 traffic conditions to determine mitigation measures necessary to ensure acceptable LOS at the study intersections for 2040 No-Build and 2040 Build conditions. The mitigations recommended for the year 2040 are shown in **Exhibit 15**. The following provides a summary of the mitigation analysis.

TH 169 & 109th Avenue North Intersection

Based on the 2040 Build capacity analysis, the signalized intersection of TH 169 & 109th Avenue North is anticipated to operate at LOS F during the AM and PM peak hours. With the addition of dual left turn lanes and extensions of many right turn lanes, the operations saw improvement in the Opening Year (2028) No-Build scenario, but with the addition of background growth and site traffic it is anticipated to worsen further. Since the intersection has very high traffic volumes during both peak hours, the operations are likely to be poor regardless of changes in lane geometry. No further mitigations are analyzed.

CSAH 103 & Oxbow Creek Drive

The worst side street movement of CSAH 103 & Oxbow Creek Drive (westbound left) is anticipated to operate at LOS F during the AM peak hour. Mitigation is likely needed for this intersection by 2040 so the intersection should be monitored, and at the point that the traffic volumes meet the MnMUTCD volume warrants, a traffic signal should be installed.

CSAH 103 & Oak Grove Parkway

The intersections of CSAH 103 & Oak Grove Parkway (NB & SB) are anticipated to operate at an overall LOS F during the PM peak hour due to a very high number of left turning movements at the westbound approach. It is recommended that, based on these volume projections, an additional westbound left turn lane may be needed in the Horizon Year (2040) Build scenario. This would likely entail two left turn lanes at the intersection of CSAH 103 Southbound & Oak Grove Parkway as well as an additional storage lane at the westbound approach of CSAH 103 Northbound & Oak Grove Parkway to provide storage sufficient for this movement. This intersection will be analyzed in further detail and mitigated as a part of the BLRT project.

Mitigation Analysis Summary

Table 14 provides a summary of the capacity analysis for the 2040 AM and PM peak hours with the proposed mitigation in place. With the installation of traffic signals, these intersections are anticipated to operate at an acceptable LOS (D or better) for the weekday AM and PM peak hours.

TABLE 14: 2040 MITIGATION CONDITIONS DELAY AND LOS SUMMARY

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		DELAY (Sec/Veh)	LOS	DELAY (Sec/Veh)	LOS
CSAH 103 & Oak Grove Pkwy	Signal	14.5	B	42.8	D
CSAH 103 & Oxbow Creek Dr	Signal	14.6	B	14.1	B

The following provides a list of mitigation measures for 2040 No-Build and 2040 Build conditions:

- 2040 No-Build Conditions
  - CSAH 103 & Oak Grove Parkway – Install dual left-turn lanes at the westbound approach of the southbound CSAH 103 intersection and a corresponding storage lane at the westbound approach of the northbound CSAH 103 intersection. This improvement would be carried out as part of the BLRT project.
  - CSAH 103 & Oxbow Creek Drive – Install traffic signal when volume warrants are met. This will require coordination with the City of Brooklyn Park and Hennepin County.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The NorthPark Development AUAR has been updated based on the current development plans. The 2018 AUAR traffic analysis provided a review of Existing (2018) Conditions, project traffic forecasts based on multiple development scenarios, and an analysis of future operating conditions to assist in developing a mitigation plan for Short-Term (2021) and Long-Term (2040) conditions. Below is a summary of the current (2023) traffic analysis.

6.1 EXISITNG LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for the Existing (2023) traffic conditions at the study intersections to determine existing operating conditions. The analysis was performed for weekday AM and PM peak hours. Existing intersection control and geometry was assumed for this analysis. Based on the analysis, the intersection of TH 169 & 109th Avenue North is operating at LOS E during the AM peak hour. Additionally, the intersection of CSAH 103 & 101st Avenue North is operating at LOS F during the PM peak hour.

6.2 TRIP GENERATION & TRAFFIC DEVELOPMENT

Based on the current development plans, the overall trip generation of the site is anticipated to be lower than what was shown in the 2018 and 2013 AUAR traffic analysis. The 2018 AUAR analysis analyzed three (3) scenarios, with the lowest peak hour trip generation being from Scenario 3 which was anticipated to generate 1,565 AM peak hour trips and 1,870 PM peak hour trips. The 2013 AUAR traffic analysis analyzed two (2) scenarios and the minimum AM and PM peak hours for either scenario was 2,661 AM peak hour trips (from Scenario 2) and 2,167 PM peak hour trips (from Scenario 1).

The trip generation for the Northpark Business Center AUAR area for the current (2023) AUAR Traffic Analysis is anticipated to be 15,100 daily trips generated in addition to the existing site trips. The AUAR area is anticipated to generate 1,070 trips during the AM peak hour (740 entering and 330 exiting) and 1,600 trips during the PM peak hour (630 entering and 970 exiting). The current (2023) trip generation is anticipated to be 495 less trips during the AM peak hour and 270 less trips in the PM peak hour than the 2018 AUAR Scenario 3.

6.3 YEAR 2028 NO-BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Year 2028 No-Build traffic conditions at the study intersections to determine baseline conditions for the 2028 analysis year. Existing intersection control and geometry was assumed for this analysis. Improvements from the planned 109th Avenue reconstruction were included in the analysis. Signal timings at the study intersections were adjusted to account for the increase in traffic volumes.

Based on the analysis, all intersections are anticipated to operate at acceptable LOS except for the following intersections:

- TH 169 & 109th Avenue North (AM peak hour)
- 101st Avenue & Xylon Avenue (PM peak hour, southbound left turn movement)
- CSAH 103 & 101st Avenue (PM peak hour)

6.4 YEAR 2028 BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Year 2028 Build traffic conditions at the study intersections to determine if the addition of project traffic significantly impacts operating conditions of the study intersections. As documented in **Table 11**, the same network was used for 2028 Build as used in 2028 No-Build.

Based on the analysis, all intersections are operating at acceptable LOS with the exception of the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- 101st & Xylon Ave (PM peak hour)
- CSAH 103 & 101st Avenue (PM peak hour)
- CSAH 103 & Oxbow Creek Drive (AM peak hour)

6.5 YEAR 2040 NO-BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Year 2040 No-Build traffic conditions at the study intersections to determine baseline conditions for the 2040 analysis year. Improvements listed in the City of Brooklyn Park's 2040 Comprehensive Plan and mitigations recommended for the 2028 No-Build scenario were included in the model. Improvements listed in Table 11 for Scenario 4 were incorporated into the traffic model that included the mitigation listed as part of the 2028 No-Build and 2028 Build analyses.

Based on the analysis, all intersections are operating at acceptable LOS with the exception of the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- CSAH 103 & Oxbow Creek Drive (AM peak hour)

6.6 YEAR 2040 BUILD LEVEL OF SERVICE ANALYSIS SUMMARY

A capacity analysis was performed for Year 2040 Build traffic conditions at the study intersections to determine if any additional improvements are necessary as a result of the increase in traffic due to the development. Roadway and intersection geometry from the 2040 No-Build and associated No-Build mitigation was included for this analysis.

Based on the analysis, all intersections are operating at acceptable LOS with the exception of the following intersections:

- TH 169 & 109th Avenue North (AM and PM peak hour)
- CSAH 103 & Oxbow Creek Drive (AM peak hour)
- CSAH 103 & Oak Grove Parkway

6.7 MITIGATION PLAN

The following provides a summary of mitigation improvements that were identified as part of the traffic analysis for the NorthPark Development. All mitigation improvements that are recommended were previously identified in the 2018 AUAR. If these improvements are in place, the traffic operations at the study intersections (besides the TH 169 & 109th Avenue North) are expected to be acceptable in all

scenarios. The year 2028 geometry, traffic control, and mitigations are shown in **Exhibit 14**, while year 2040 is shown in **Exhibit 15**.

2021 No-Build Conditions (Recommendations from 2018 AUAR)

- TH 169 & 109th Avenue North – Extend eastbound and westbound right-turn lanes. This will need to be coordinated with the cities of Brooklyn Park and Champlin, and MnDOT.
  - **2023 AUAR Update – This improvement will be implemented as part of the planned improvement project for the 109th Avenue corridor which will take place in 2025 and 2026.**
- CSAH 103 & 114th Avenue North – Construct northbound left-turn lane. This improvement will need to be coordinated between City of Champlin and Hennepin County.
  - **2023 AUAR Update – This improvement has not yet been implemented and there is no change in recommendation from this AUAR update.**

2021 Build Conditions (Recommendations from 2018 AUAR)

- 109th Avenue North & Xylon Lane North – Construct eastbound right turn-lane. When volume warrants are met, install traffic signal and eastbound/westbound left-turn lanes. The traffic signal and left-turn lanes will need to be coordinated with the cities of Brooklyn Park and Champlin.
  - **2023 AUAR Update – An eastbound left and right turn lane as well as a westbound left turn lane have been installed as was previously advised. A traffic signal is planned as part of the 109th Avenue improvements and the intersection is anticipated to operate acceptable with a signal in all scenarios.**
- 101st Avenue North & Xylon Avenue North – Construct westbound right-turn lane and install traffic signal when volume warrants are met.
  - **2023 AUAR Update – A westbound left turn lane has been installed. Volume projections from the latest analysis indicate that a traffic signal is not likely to be warranted with only the AUAR development, the intersection should still be monitored to determine if a signal will be required as development occurs south of the AUAR site.**
- Widen CSAH 103 northbound to two lanes between Oak Grove Parkway and TH 610 (WB). This will need to be coordinated with the City of Brooklyn Park and Hennepin County.
  - **2023 AUAR Update – This improvement has not yet been implemented but is planned as part of the BLRT project which is expected to be completed between the years 2028 and 2040.**
- In order to encourage truck traffic to utilize the proposed TH 169 & 101st Avenue North interchange, a restricted ¾ access median is proposed along Oxbow Creek Drive to provide a dedicated turn lane for entering trucks traffic and force all exiting truck traffic to westbound Oxbow Creek Drive to the intersection of Oxbow Creek Drive & Xylon Avenue North.
  - **2023 AUAR Update – This improvement has not yet been implemented and it is no longer recommended as a mitigation due to the fact that the overall trip generation of the AUAR area is anticipated to be significantly lower than what was determined in the 2018 AUAR traffic analysis.**
- Although the intersection of CSAH 103 & Oxbow Creek Drive is anticipated to operate at an acceptable LOS under stop-control conditions, it is recommended to monitor this intersection for possible signalization if travel patterns to/from the NorthPark development differ from what was analyzed in this traffic study. The intersection volumes should be monitored and if the volumes

meet MnMUTCD volume warrant thresholds, a traffic signal should be installed. This will require Hennepin County approval.

- **2023 AUAR Update – This intersection is anticipated to operate unacceptably in the Year 2040 build analysis. It is advised that this intersection should be closely monitored and may require signalization within the 2028 to 2040 timeframe if the volumes are shown to meet MnMUTCD volume thresholds for signal warrants**.

2040 No-Build Conditions (Recommendations from 2018 AUAR)

- TH 169 & 109th Avenue North – Construct dual left-turn lanes on all four intersection approaches and a second westbound through lane. This will need to be coordinated with the cities of Brooklyn Park and Champlin, and MnDOT.
  - **2023 AUAR Update – This improvement will be implemented as part of the 109th Avenue corridor project which is planned to take place in 2025-2026. The operations of the intersection are shown to improve significantly as a result of the dual left turn lanes and turn lane extensions.**
- CSAH 103 & 114th Avenue North – Install traffic signal when volume warrants are met, contingent on Hennepin County approval. The intersection will need to exceed the Hennepin County minimum signal priority factor.
  - **2023 AUAR Update – This improvement has not yet been implemented and there is no change in recommendation from this AUAR update.**
- 109th Avenue North & Jefferson Highway – Install roundabout.
  - **2023 AUAR Update – This improvement has not yet been implemented but is currently planned as part of the 109th Avenue reconstruction project which will occur in 2025-2026.**

2040 Build Conditions (Recommendations from 2018 AUAR)

- CSAH 103 & Oxbow Creek Drive – Install traffic signal when volume warrants are met, contingent on Hennepin County approval. The intersection will need to exceed the Hennepin County minimum signal priority factor.
  - **2023 AUAR Update – This improvement has not yet been implemented and is recommended as a mitigation for the 2028-2040 time frame, provided it has met signal warrants by then.**

At the request of the City of Brooklyn Park, an Alternative Condition analysis was performed as part of the 2018 AUAR for the 2021 Build condition. This analysis considered impacts of the traffic increase from the Short-Term development would have if the TH 169 & 101st Avenue North interchange was not constructed and the connection of Xylon Avenue North to 109th Avenue North were not constructed by the 2021 Build Year. Both of these improvements have been completed as of 2023 and thus the alternative build conditions are no longer applicable, and the improvements recommended for these alternatives are not listed here.

In order to accommodate long-term demands of the 109th Avenue North corridor, the Cities of Brooklyn Park and Champlin have been working collaboratively on conceptual roadway and intersection improvements along 109th Avenue North between Jefferson Highway and CSAH 103. A traffic study was performed and finalized in September 2017 that analyzed existing and 2040 operating conditions of the study corridor. A preferred layout has been developed which includes provide a four-lane roadway between Jefferson Highway and CSAH 103. Although some of these improvements were not identified as

required mitigation as part of this AUAR to provide acceptable operating conditions, including the widening of 109th Avenue North to four-lanes, the construction of the preferred alternative is expected to improve operating conditions of the 109th Avenue North corridor.

Furthermore, the BLRT project will realign the roadways south of the study. The intersections around the area of these improvements should be carefully observed when the project is completed to ensure operations are acceptable.

The development should consider the implementation of traffic demand management (TDM) strategies such as carpooling, transit opportunities/incentives, bike storage facilities, telecommuting, flexible work hours and schedule and off-peak truck and service scheduling. The developer will continue working with the City of Brooklyn Park to establish a Travel Demand Management Plan (TDMP) that will outline specific TDM strategies.

The traffic forecasts used in this analysis are conservatively high as they are based on the worst-case development scenario, and they do not account for trip generation reductions due to internal capture or TDM measures or reductions due to the proposed BLRT. The forecasts are also not restrained by capacity.

Future travel demand may vary significantly from the forecasts due to emerging technologies, changes in travel behavior, or land use and network changes different from those assumed. This is likely the last complete update to this document, but further analysis may need to be conducted regarding the implementation of the mitigations outlined in this report.

The developer should continue to work with the city to determine appropriate access design, spacing, and control for the future roadway connections in support of the proposed development located in the northwest corner of the AUAR area. This would include any proposed connections to Xylon Avenue or 109th Avenue.

APPENDICIES

APPENDIX A: EXHIBITS

APPENDIX B: PROPOSED SITE PLAN

APPENDIX C: TURNING MOVEMENT COUNTS

APPENDIX D: SIMTRAFFIC REPORTS

I. EXISTING SIMTRAFFIC REPORTS
II. 2028 NO-BUILD SIMTRAFFIC REPORTS
III. 2040 NO-BUILD SIMTRAFFIC REPORTS
IV. 2028 BUILD SIMTRAFFIC REPORTS
V. 2040 BUILD SIMTRAFFIC REPORTS
VI. 2028 NO-BUILD SIMTRAFFIC REPORTS (MITIGATED)
VII. 2040 NO-BUILD SIMTRAFFIC REPORTS (MITIGATED)
VIII. 2028 BUILD SIMTRAFFIC REPORTS (MITIGATED)
IX. 2040 BUILD SIMTRAFFIC REPORTS (MITIGATED)

Appendix A: Exhibits

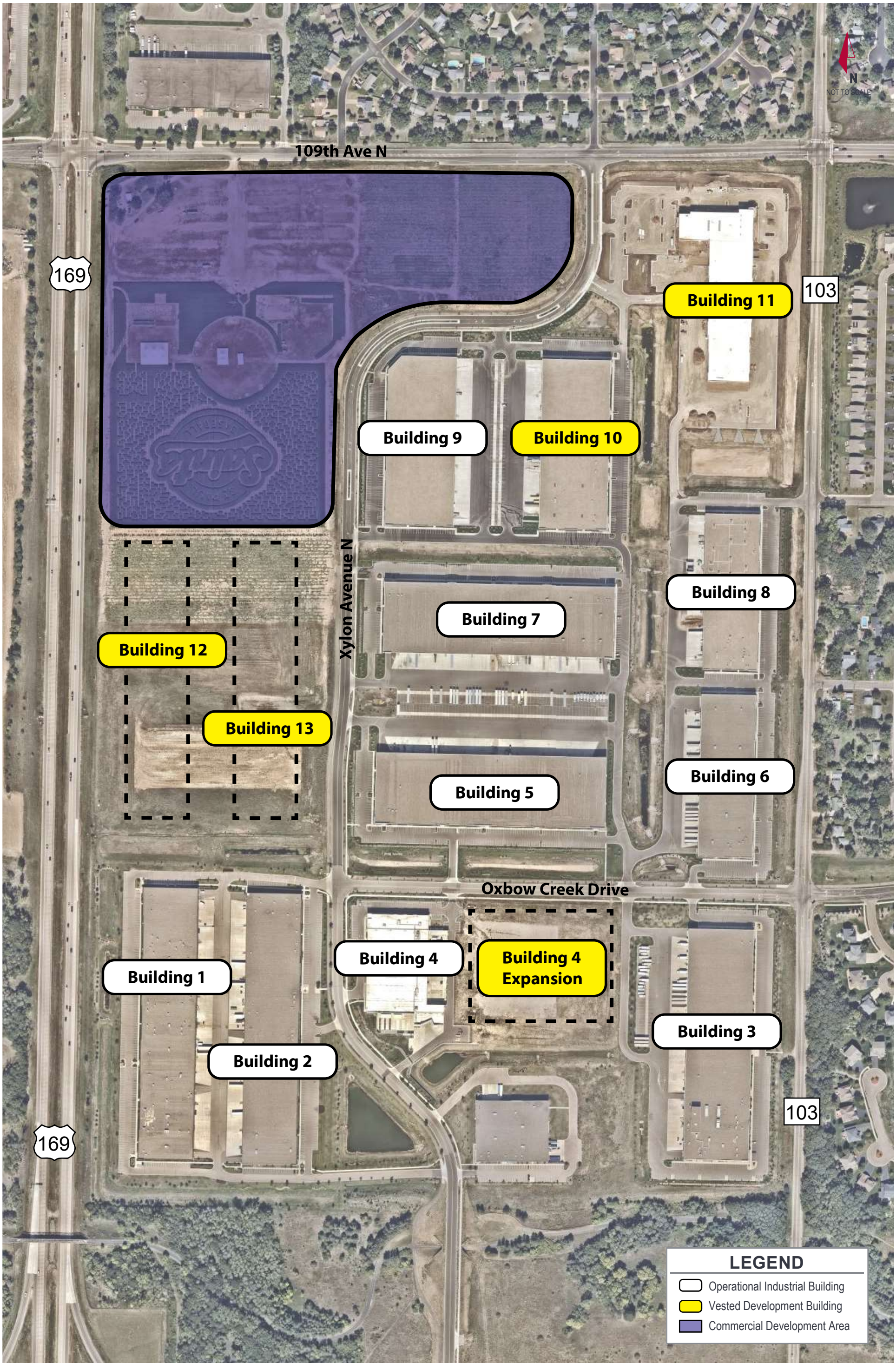


EXHIBIT 1
DETAILED SITE MAP
NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

109th Avenue

169

Xylon Lane

109th Avenue

107th Avenue

Oxbow Creek Drive

103

Xylon Ave

101st Avenue

MINNESOTA

610

103

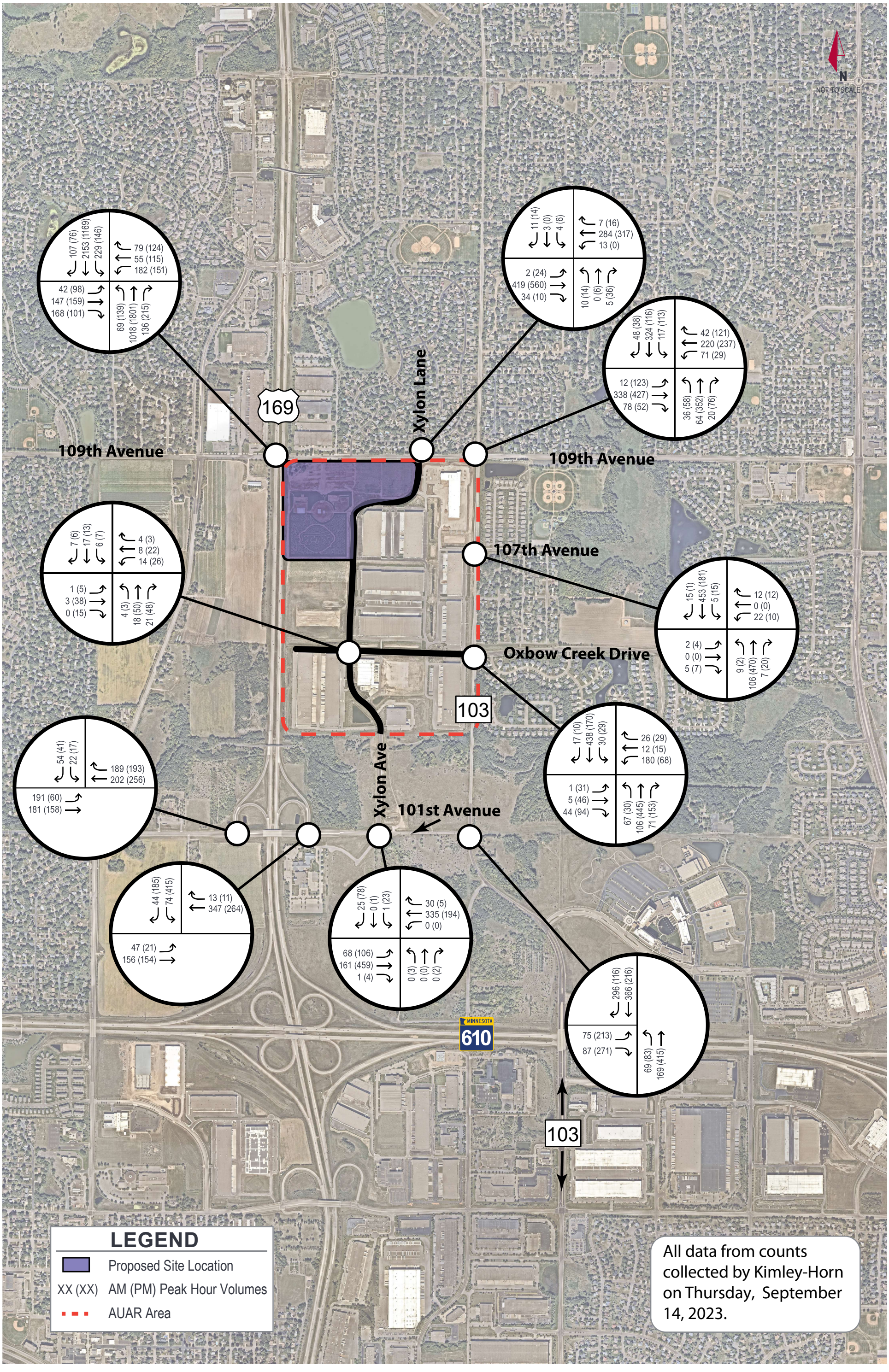
LEGEND

- Proposed Site Location
- Existing Signal Control
- Existing Stop Control
- AUAR Area

Kimley»Horn

EXHIBIT 2

EXISTING INTERSECTION CONTROL AND GEOMETRY
NORTHPARK BUSINESS CENTER



Kimley»Horn

EXHIBIT 3

2023 EXISTING TRAFFIC VOLUMES
NORTHPARK BUSINESS CENTER

N
NOT TO SCALE

12%
5%
2%
109th Avenue
3%
107th Avenue
2%
Oxbow Creek Drive
4%
101st Avenue
39%
33%
169
103
610
Xylon Lane
Xylon Ave
10
11
12
13
Building 4 Expansion
MINNESOTA

LEGEND

- Vested Building Locations
- XX% [XX%] — IN [OUT] Vested Development Trip Distribution
- AUAR Area

Kimley»Horn

EXHIBIT 4

VESTED DEVELOPMENT TRIP DISTRIBUTION
NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

29 (8)
7 (28)
1 (5)
5 (1)

12 (3)
34 (9)
8 (33)
3 (12)

7 (2)
5 (1)
5 (1)
2 (1)
2 (7)
1 (5)
1 (5)
1 (2)

169

Xylon Lane

109th Avenue

109th Avenue

38 (156)
9 (35)
37 (10)
162 (44)

11
10
12
13

107th Avenue

7 (2)
2 (7)

Oxbow Creek Drive

Building 4 Expansion

103

22 (92)
2 (9)
10 (3)

7 (2)
5 (1)
2 (7)
1 (5)
6 (24)
25 (7)

Xylon Ave

101st Avenue

96 (26)
25 (101)
10 (3)

25 (101)
13 (54)
56 (15)
105 (28)

6 (24)
13 (54)
56 (15)
25 (7)

MINNESOTA
610

103

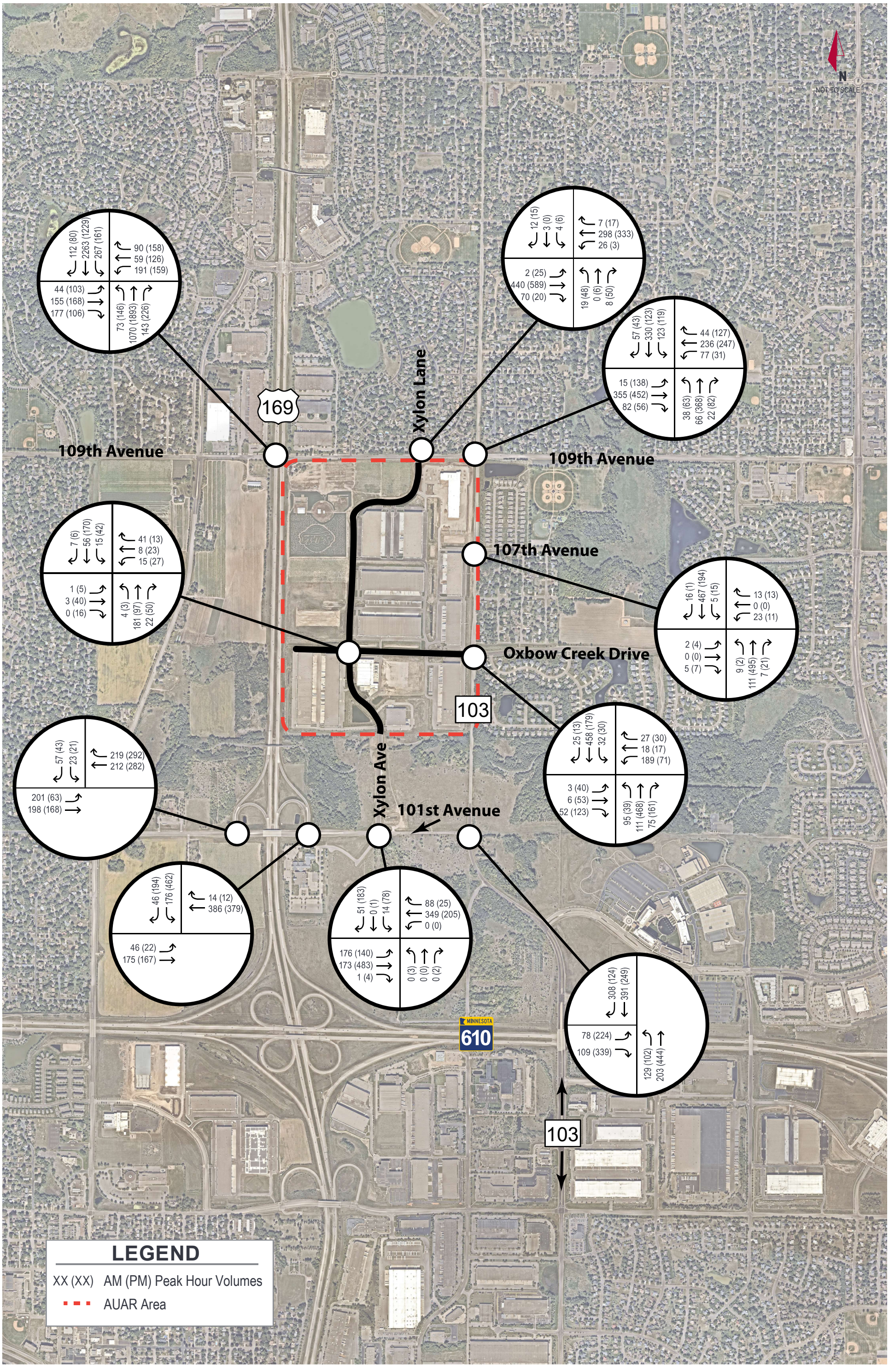
LEGEND

	Vested Building Locations
XX [XX]	AM [PM] Vested Development Trip Assignment
▪ ▪ ▪	AUAR Area

Kimley»Horn

EXHIBIT 5

VESTED DEVELOPMENT TRIP ASSIGNMENT
NORTHPARK BUSINESS CENTER



Kimley»Horn

EXHIBIT 6

2028 NO-BUILD TRAFFIC VOLUMES
NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

169

109th Avenue

Xylon Lane

109th Avenue

107th Avenue

Oxbow Creek Drive

103

Xylon Ave

101st Avenue

MINNESOTA 610

103

LEGEND

XX (XX) AM (PM) Peak Hour Volumes

AUAR Area

Kimley»Horn

EXHIBIT 7

2040 NO-BUILD TRAFFIC VOLUMES

NORTHPARK BUSINESS CENTER

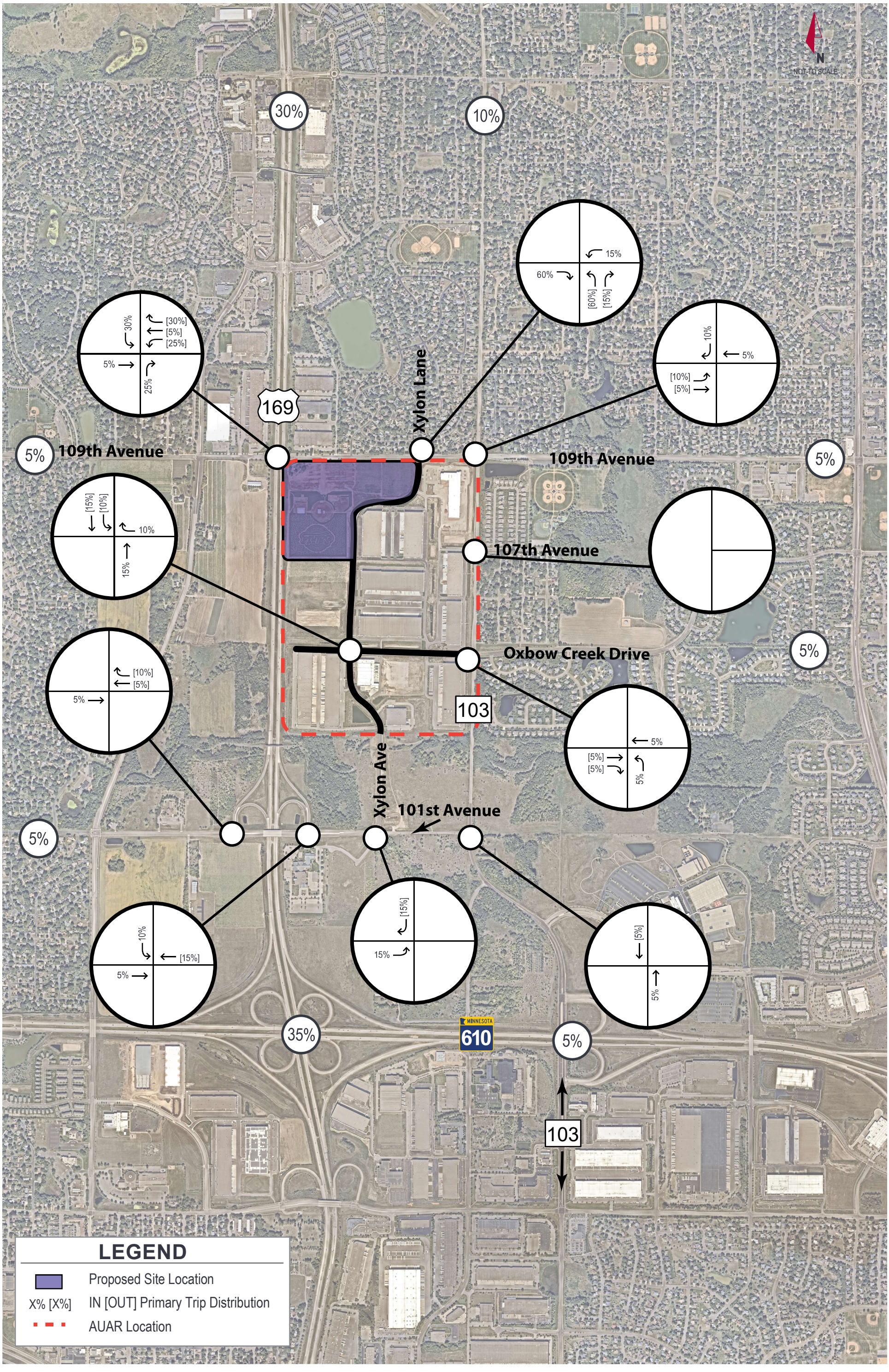


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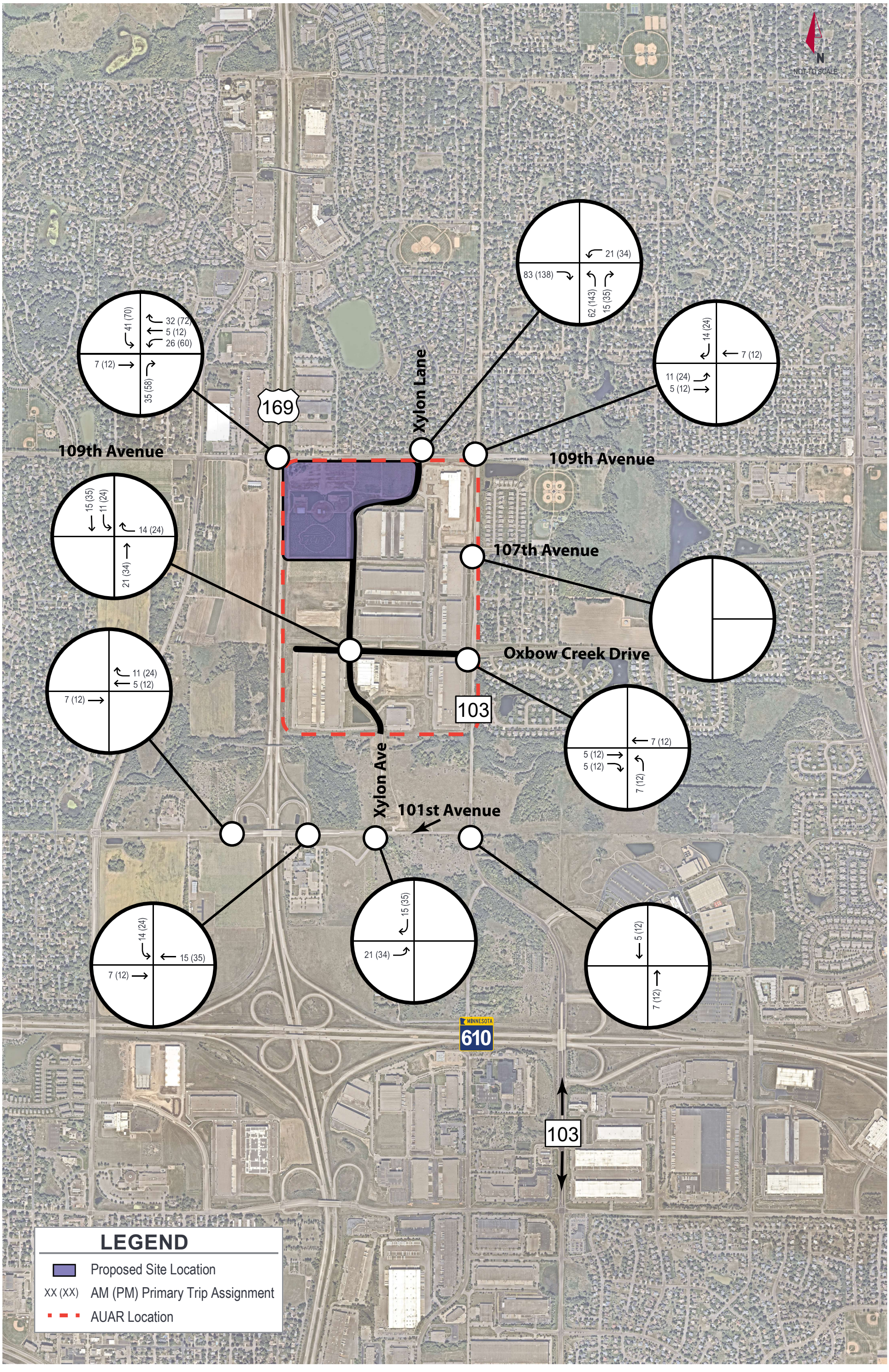
EXHIBIT 8

PROPOSED SITE TRIP DISTRIBUTION
NORTHPARK BUSINESS CENTER



Kimley»Horn

EXHIBIT 9

SITE TRIP ASSIGNMENT

NORTHPARK BUSINESS CENTER

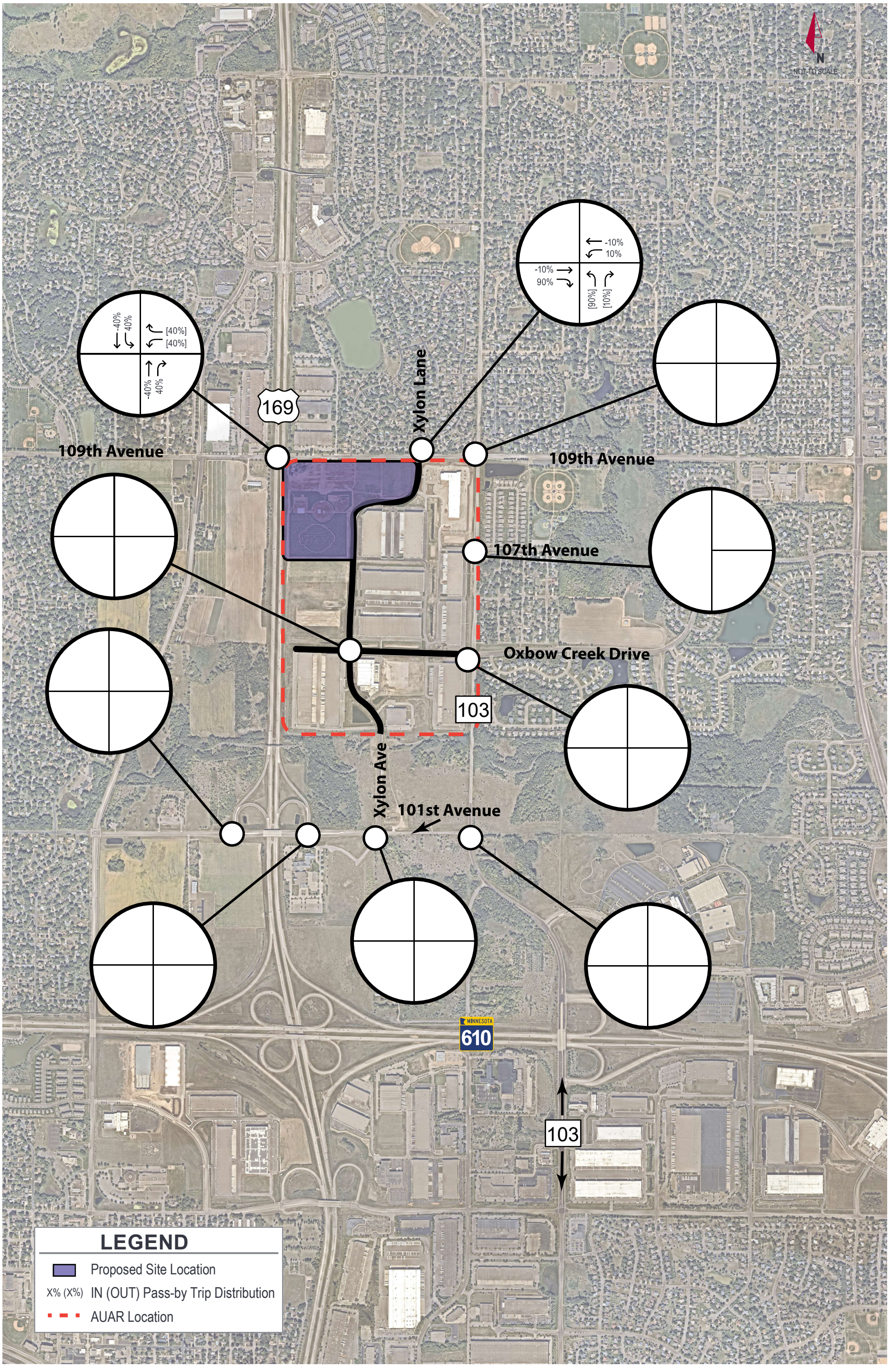


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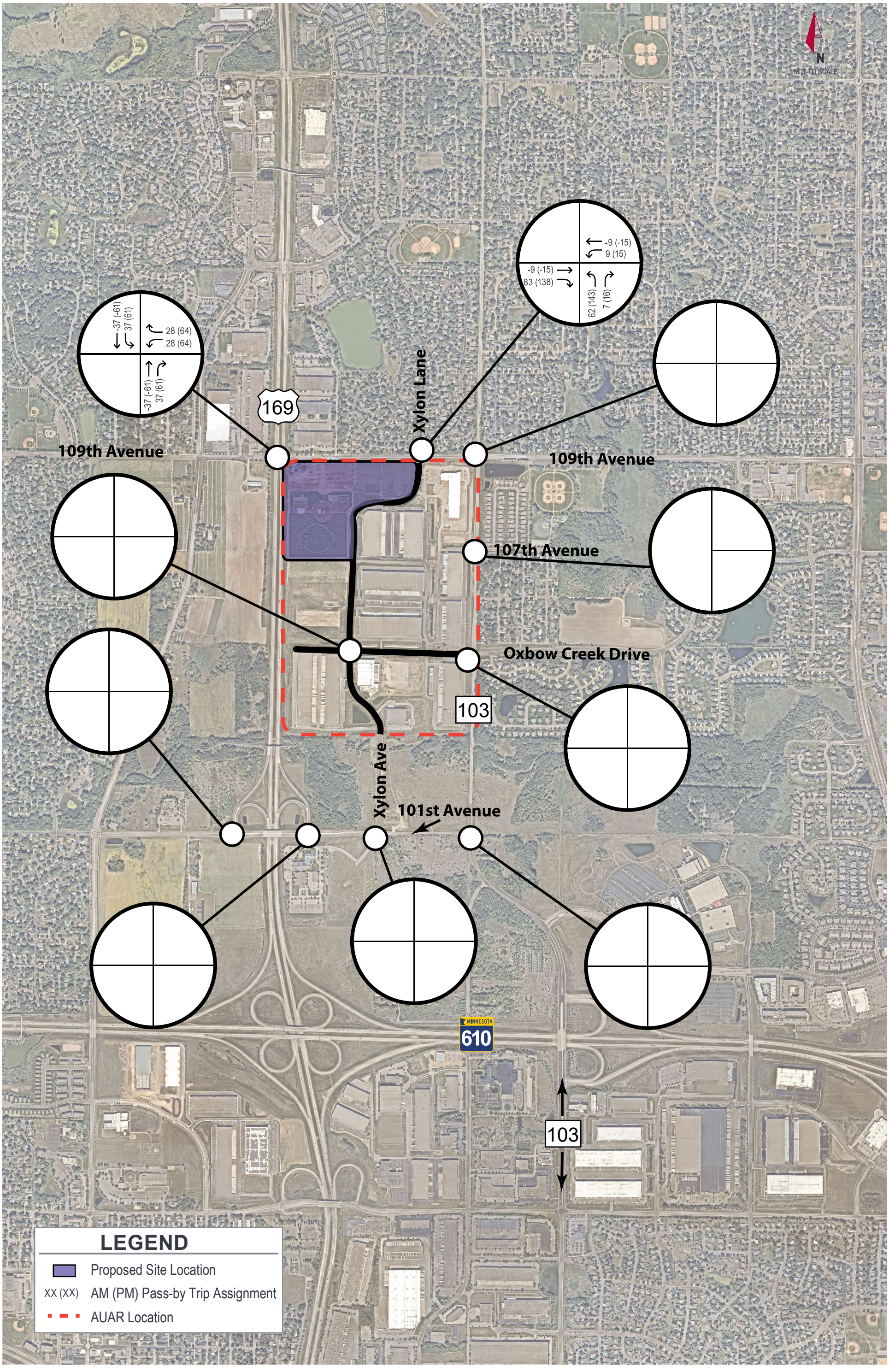
EXHIBIT 10

PASS-BY TRIP DISTRIBUTION

NORTHPARK BUSINESS CENTER



Kimley»Horn

EXHIBIT 11
PASS-BY TRIP DISTRIBUTION
NORTHPARK BUSINESS CENTER

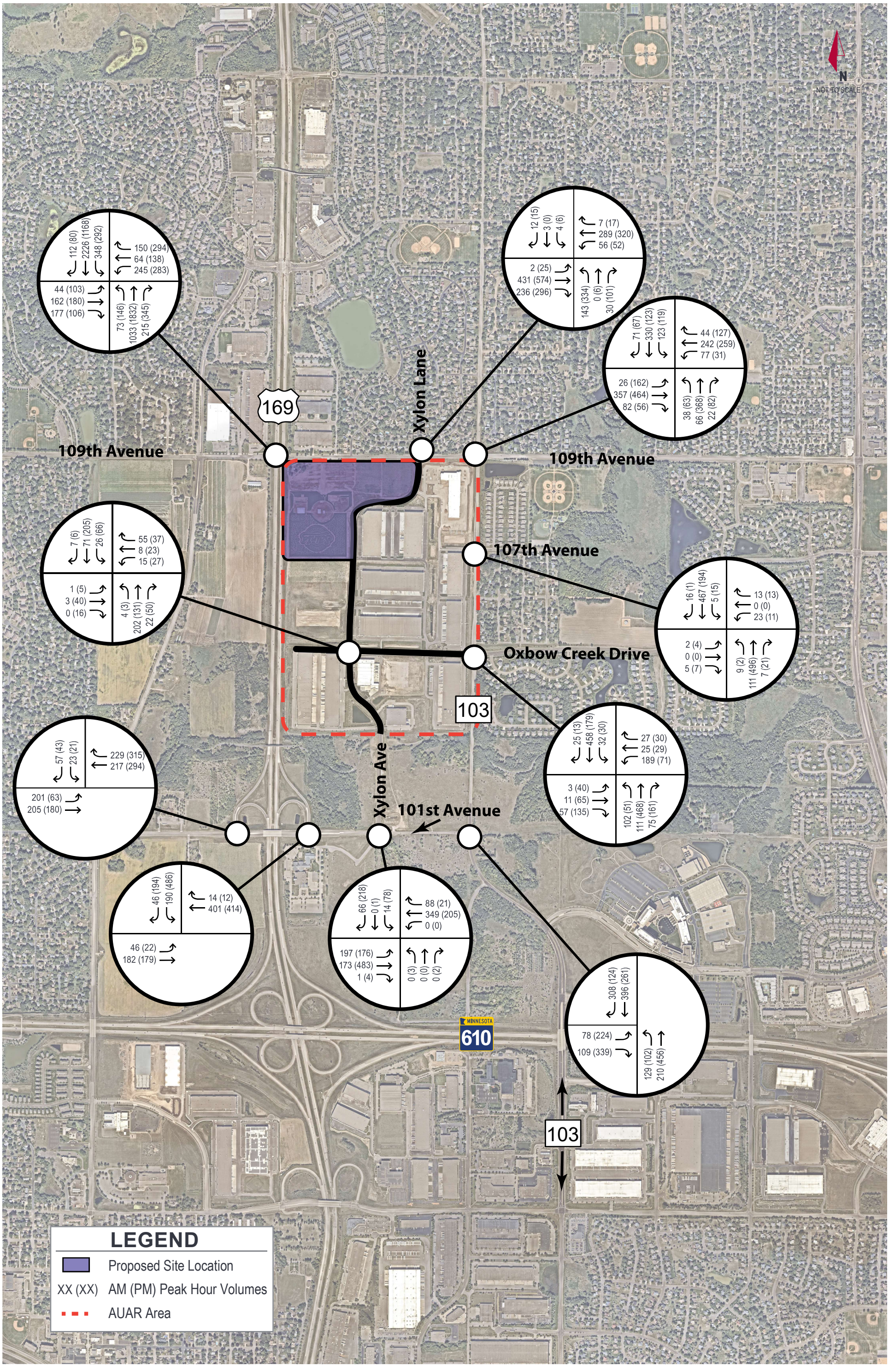


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EXHIBIT 12

2028 BUILD TRAFFIC VOLUMES
NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

126 (90) 2513 (1324) 382 (312)
161 (314) 71 (154) 269 (303)
50 (116) 182 (201) 199 (119)
82 (165) 1169 (2072) 233 (374)

14 (17) 3 (0) 5 (7)
8 (19) 327 (360) 59 (54)
2 (28) 487 (649) 245 (299)
145 (340) 0 (7) 31 (107)

78 (72) 371 (139) 139 (134)
50 (143) 273 (290) 87 (35)
29 (181) 402 (520) 92 (63)
43 (71) 74 (415) 25 (93)

8 (7) 78 (227) 28 (71)
60 (39) 9 (26) 17 (30)
1 (6) 3 (45) 0 (18)
5 (3) 225 (143) 25 (56)

18 (1) 526 (219) 6 (17)
15 (15) 0 (0) 26 (12)
2 (5) 0 (0) 6 (8)
10 (2) 125 (559) 8 (24)

64 (48) 26 (24)
258 (353) 243 (329)
226 (71) 230 (201)

28 (15) 516 (202) 36 (34)
30 (34) 27 (31) 213 (80)
3 (45) 12 (72) 64 (151)
114 (56) 125 (527) 84 (181)

52 (219) 212 (545)
15 (13) 450 (462)
52 (25) 204 (200)

72 (241) 0 (1) 16 (88)
100 (24) 393 (231) 0 (0)
219 (193) 195 (544) 1 (5)
0 (3) 0 (0) 0 (2)

247 (140) 446 (238) 100 (55)
30 (60) 150 (40) 55 (745)
58 (192) 70 (180) 83 (262)
95 (75) 236 (512) 750 (230)

169
Xylon Lane
109th Avenue
109th Avenue
107th Avenue
Oxbow Creek Drive
103
Xylon Ave
101st Avenue
MINNESOTA
610
103

LEGEND

- Proposed Site Location
- XX (XX) AM (PM) Peak Hour Volumes
- AUAR Area

Kimley»Horn

EXHIBIT 13

2040 BUILD TRAFFIC VOLUMES

NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

169

109th Avenue

Xylon Lane

109th Avenue

107th Avenue

Oxbow Creek Drive

103

Xylon Ave

101st Avenue

MINNESOTA

610

103

LEGEND

- Proposed Site Location
- Existing Signal Control
- Existing Stop Control
- Planned Signal Control
- Planned Lane Use Change
- AUAR Area

Note:
No further mitigation changes to the geometry or intersection control are recommended for year 2028.

Kimley»Horn

EXHIBIT 14

2028 FUTURE GEOMETRY AND MITIGATION PLAN
NORTHPARK BUSINESS CENTER

N

NOT TO SCALE

169

109th Avenue

Xylon Lane

109th Avenue

107th Avenue

Oxbow Creek Drive

103

Xylon Ave

101st Avenue

MINNESOTA
610

103

Note:
Signal at 101st Avenue & Xylon Avenue is a potential future mitigation.

LEGEND

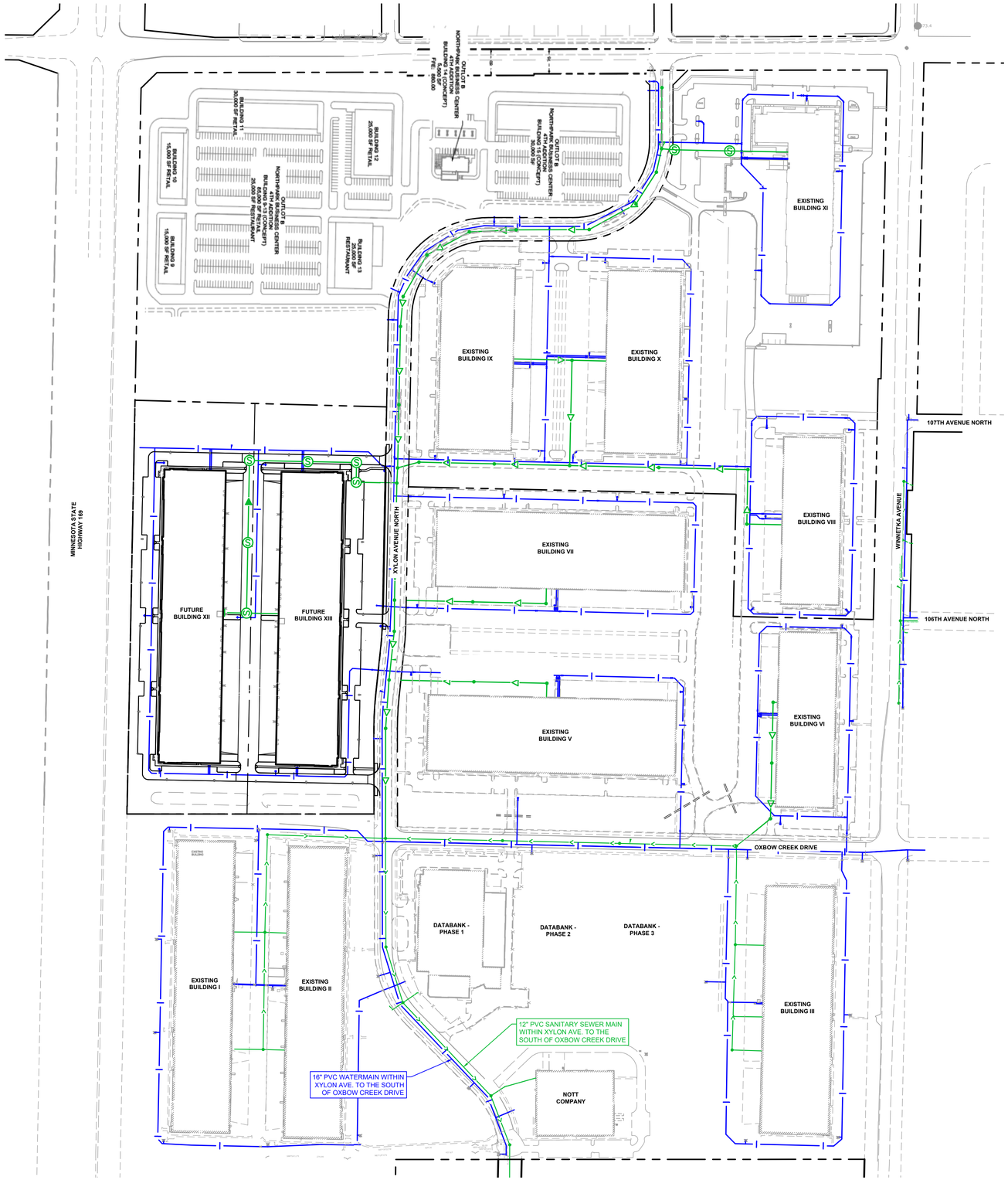
- Proposed Site Location
- Existing Signal Control
- Existing Stop Control
- Planned Signal (2040)
- Proposed Signal Mitigation
- Planned Lane Use Change (2040)
- Proposed Lange Change Mitigation
- AUAR Area

Kimley»Horn

EXHIBIT 15

2040 FUTURE GEOMETRY AND MITIGATION PLAN
NORTHPARK BUSINESS CENTER

Appendix B: Proposed Site Plan



NORTH

GRAPHIC SCALE IN FEET
0 100 200 400

BUILDING NAME	PARCEL	TOTAL AREA	INITIAL IMPERVIOUS	TOTAL FUTURE IMPERVIOUS	IMPERVIOUS COVERAGE
NORTH PARK I	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER	13.63 AC 593,723 SF	10.61 AC 462,172 SF	10.61 AC 462,172 SF	77.84%
NORTHPARK II	LOT 2, BLOCK 2, NORTHPARK BUSINESS CENTER	15.23 AC 663,419 SF	8.12 AC 353,707 SF	8.12 AC 353,707 SF	53.32%
NOTT COMPANY	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SECOND	6.73 AC 293,159 SF	2.87 AC 125,017 SF	4.98 AC 216,929 SF	74.00%
NORTHPARK III	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER THIRD	13.42 AC 584,575 SF	10.18 AC 443,441 SF	10.18 AC 443,441 SF	75.86%
DATABANK PHASE 1-3	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER FOURTH	14.41 AC 627,700 SF	4.17 AC 181,645 SF	11.50 AC 500,940 SF	79.81%
NORTHPARK V	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER FIFTH	16.60 AC 723,096 SF	0.00 AC 0 SF	11.18 AC 487,001 SF	67.35%
NORTHPARK VI	LOT 2, BLOCK 1, NORTHPARK BUSINESS CENTER FIFTH	8.19 AC 356,756 SF	0.00 AC 0 SF	6.11 AC 266,152 SF	74.60%
NORTHPARK VII	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SIXTH	13.44 AC 585,446 SF	0.00 AC 0 SF	10.88 AC 473,933 SF	80.95%
NORTHPARK VIII	LOT 3, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	7.75 AC 337,590 SF	0.00 AC 0 SF	6.25 AC 272,250 SF	80.65%
NORTHPARK IX	LOT 1, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	9.54 AC 415,562 SF	0.00 AC 0 SF	7.50 AC 326,700 SF	78.62%
NORTHPARK X	LOT 3, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	12.47 AC 543,193 SF	0 AC 0 SF	8.50 AC 370,260 SF	68.16%
NORTHPARK XI	LOT 4 & 5, BLOCK 1, NORTHPARK BUSINESS CENTER SEVENTH	16.33 AC 711,512 SF	0.00 AC 0 SF	9.61 AC 418,612 SF	58.85%
NORTHPARK XII & XIII	LOT 1, BLOCK 1 NORTHPARK BUSINESS CENTER EIGHTH	27.46 AC 1,196,158 SF	0 AC 0 SF	18.82 AC 819,737 SF	68.54%
CUMULATIVE DEVELOPED ACRES		175.20 AC	35.95 AC	124.23 AC	71.17%
UNDEVELOPED AREAS OF NORTHPARK		32.59 AC 1,419,620 SF	0.00 AC 0 SF	21.20 AC 923,472 SF	65.05%
NET TOTAL NORTHPARK AREA		207.79 AC	35.95 AC	145.44 AC	69.99%

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

PRELIMINARY - NOT FOR CONSTRUCTION

KHA PROJECT 160846032
DATE 9/22/2023
SCALE AS SHOWN
DESIGNED BY TDS
DRAWN BY CPH
CHECKED BY TDS

NORTHPARK DEVELOPMENT
OVERALL UTILITY EXHIBIT

NORTHPARK BUSINESS CENTER
PREPARED FOR SCANNELL PROPERTIES
BROOKLYN PARK MN

SHEET NUMBER
EX-A

Appendix C: Turning Movement Counts

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

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

Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023

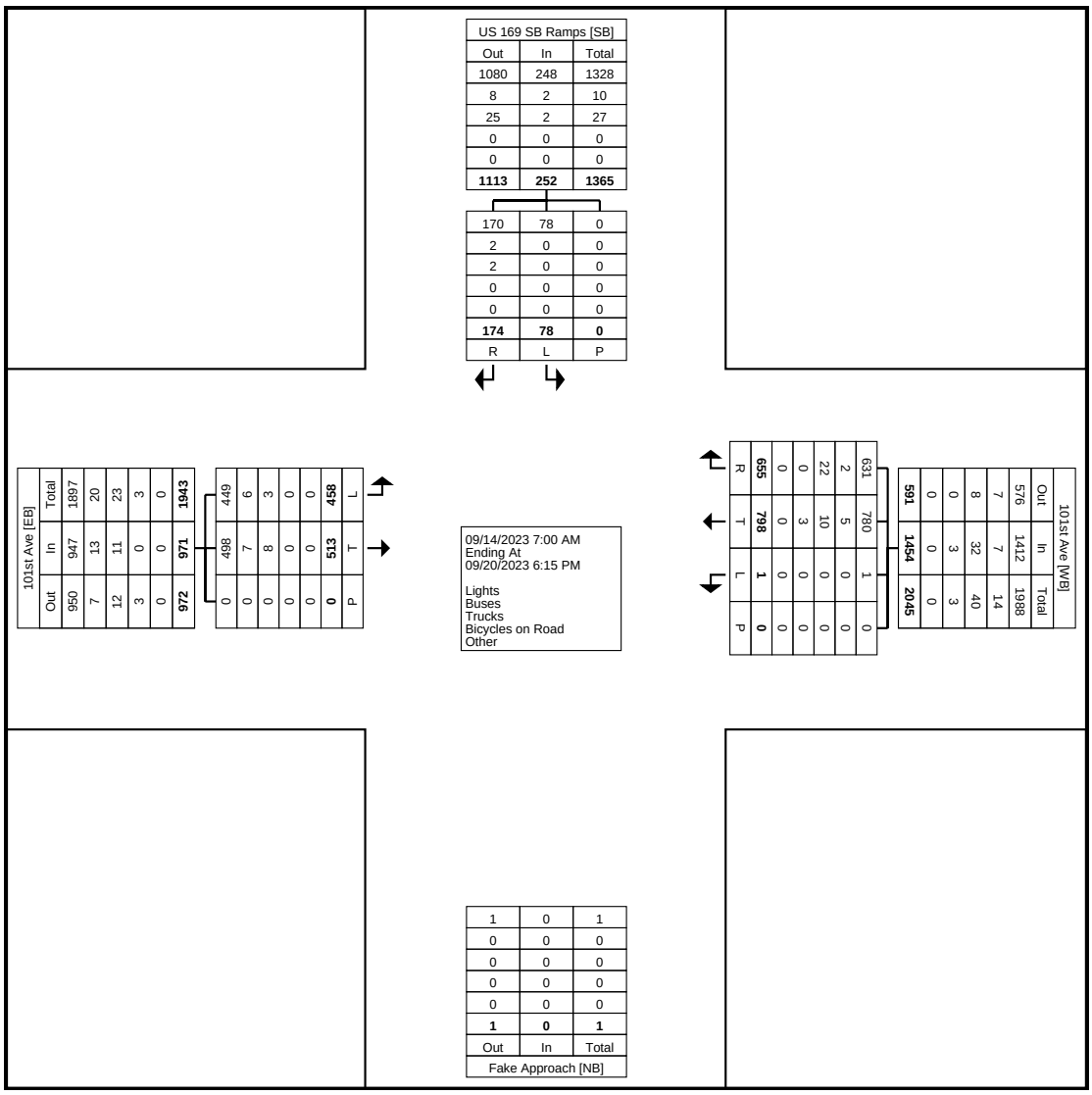
Turning Movement Data

Start Time	101st Ave Eastbound				101st Ave Westbound					US 169 SB Ramps Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	45	38	0	83	0	56	36	0	92	2	15	0	17	192
7:15 AM	71	53	0	124	0	60	57	0	117	2	16	0	18	259
7:30 AM	54	63	0	117	0	40	54	0	94	7	10	0	17	228
7:45 AM	21	27	0	48	0	46	42	0	88	11	13	0	24	160
Hourly Total	191	181	0	372	0	202	189	0	391	22	54	0	76	839
8:00 AM	36	18	0	54	0	37	39	0	76	6	7	0	13	143
8:15 AM	27	20	0	47	1	19	27	0	47	5	9	0	14	108
8:30 AM	36	18	0	54	0	25	32	0	57	3	4	0	7	118
8:45 AM	37	26	0	63	0	20	21	0	41	3	7	0	10	114
Hourly Total	136	82	0	218	1	101	119	0	221	17	27	0	44	483
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	17	36	0	53	0	62	44	0	106	4	10	0	14	173
4:15 PM	15	34	0	49	0	72	56	0	128	3	7	0	10	187
4:30 PM	13	34	0	47	0	71	46	0	117	2	12	0	14	178
4:45 PM	15	28	0	43	0	58	47	0	105	8	12	0	20	168
Hourly Total	60	132	0	192	0	263	193	0	456	17	41	0	58	706
5:00 PM	15	29	0	44	0	70	40	0	110	4	15	0	19	173
5:15 PM	19	36	0	55	0	59	38	0	97	2	15	0	17	169
5:30 PM	20	24	0	44	0	41	43	0	84	8	11	0	19	147
5:45 PM	17	29	0	46	0	62	33	0	95	8	11	0	19	160
Hourly Total	71	118	0	189	0	232	154	0	386	22	52	0	74	649
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	458	513	0	971	1	798	655	0	1454	78	174	0	252	2677
Approach %	47.2	52.8	-	-	0.1	54.9	45.0	-	-	31.0	69.0	-	-	-
Total %	17.1	19.2	-	36.3	0.0	29.8	24.5	-	54.3	2.9	6.5	-	9.4	-
Lights	449	498	-	947	1	780	631	-	1412	78	170	-	248	2607
% Lights	98.0	97.1	-	97.5	100.0	97.7	96.3	-	97.1	100.0	97.7	-	98.4	97.4
Buses	6	7	-	13	0	5	2	-	7	0	2	-	2	22
% Buses	1.3	1.4	-	1.3	0.0	0.6	0.3	-	0.5	0.0	1.1	-	0.8	0.8
Trucks	3	8	-	11	0	10	22	-	32	0	2	-	2	45
% Trucks	0.7	1.6	-	1.1	0.0	1.3	3.4	-	2.2	0.0	1.1	-	0.8	1.7
Bicycles on Road	0	0	-	0	0	3	0	-	3	0	0	-	0	3
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.2	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

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

Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

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

Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	101st Ave Eastbound				101st Ave Westbound					US 169 SB Ramps Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:00 AM	45	38	0	83	0	56	36	0	92	2	15	0	17	192
7:15 AM	71	53	0	124	0	60	57	0	117	2	16	0	18	259
7:30 AM	54	63	0	117	0	40	54	0	94	7	10	0	17	228
7:45 AM	21	27	0	48	0	46	42	0	88	11	13	0	24	160
Total	191	181	0	372	0	202	189	0	391	22	54	0	76	839
Approach %	51.3	48.7	-	-	0.0	51.7	48.3	-	-	28.9	71.1	-	-	-
Total %	22.8	21.6	-	44.3	0.0	24.1	22.5	-	46.6	2.6	6.4	-	9.1	-
PHF	0.673	0.718	-	0.750	0.000	0.842	0.829	-	0.835	0.500	0.844	-	0.792	0.810
Lights	188	176	-	364	0	198	178	-	376	22	53	-	75	815
% Lights	98.4	97.2	-	97.8	-	98.0	94.2	-	96.2	100.0	98.1	-	98.7	97.1
Buses	3	2	-	5	0	1	0	-	1	0	1	-	1	7
% Buses	1.6	1.1	-	1.3	-	0.5	0.0	-	0.3	0.0	1.9	-	1.3	0.8
Trucks	0	3	-	3	0	3	11	-	14	0	0	-	0	17
% Trucks	0.0	1.7	-	0.8	-	1.5	5.8	-	3.6	0.0	0.0	-	0.0	2.0
Bicycles on Road	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn and Associates, Inc.
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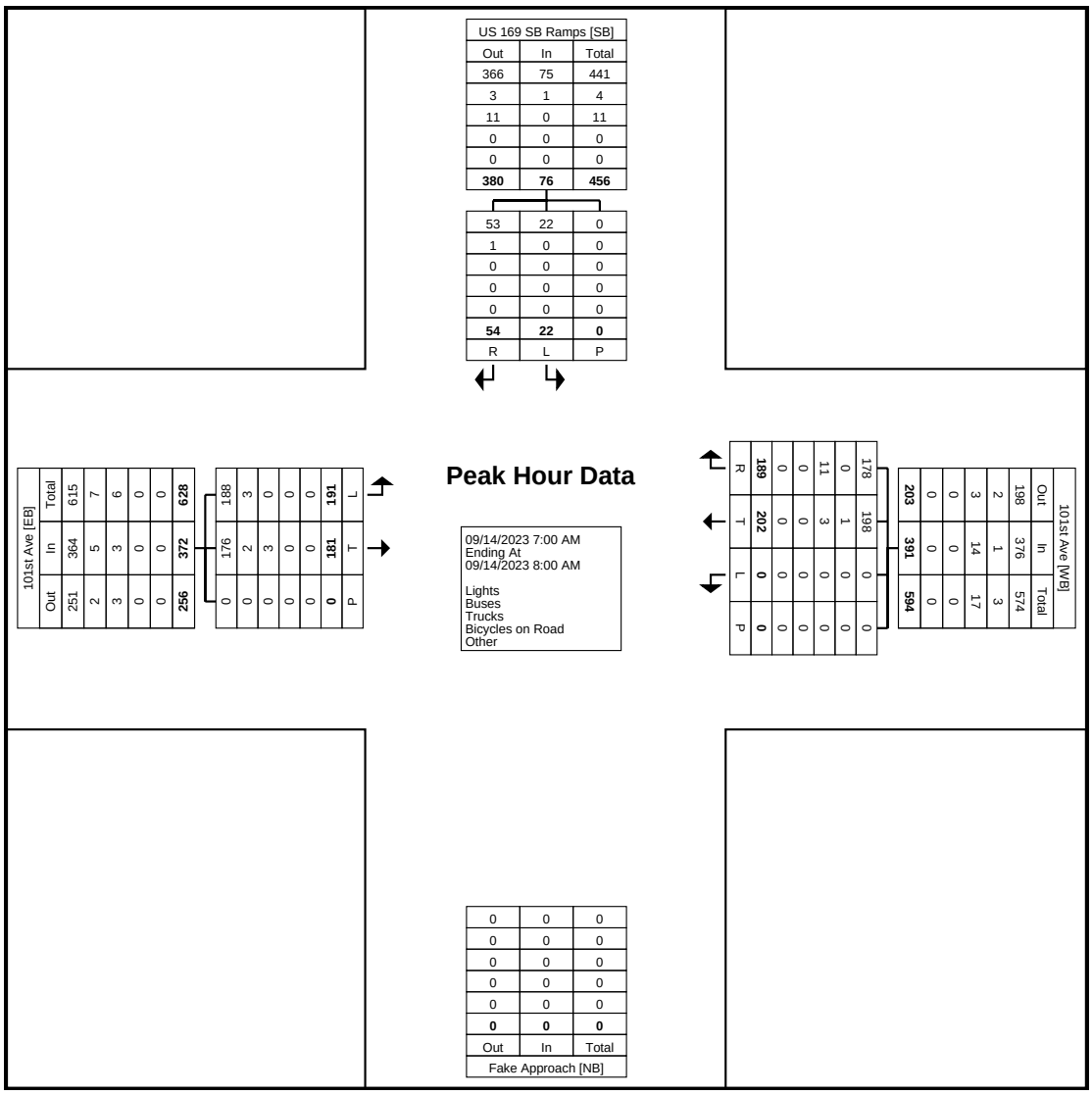
Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

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

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

Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	101st Ave Eastbound				101st Ave Westbound					US 169 SB Ramps Southbound				
	Left	Thru	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:00 PM	17	36	0	53	0	62	44	0	106	4	10	0	14	173
4:15 PM	15	34	0	49	0	72	56	0	128	3	7	0	10	187
4:30 PM	13	34	0	47	0	71	46	0	117	2	12	0	14	178
4:45 PM	15	28	0	43	0	58	47	0	105	8	12	0	20	168
Total	60	132	0	192	0	263	193	0	456	17	41	0	58	706
Approach %	31.3	68.8	-	-	0.0	57.7	42.3	-	-	29.3	70.7	-	-	-
Total %	8.5	18.7	-	27.2	0.0	37.3	27.3	-	64.6	2.4	5.8	-	8.2	-
PHF	0.882	0.917	-	0.906	0.000	0.913	0.862	-	0.891	0.531	0.854	-	0.725	0.944
Lights	59	127	-	186	0	256	189	-	445	17	40	-	57	688
% Lights	98.3	96.2	-	96.9	-	97.3	97.9	-	97.6	100.0	97.6	-	98.3	97.5
Buses	0	2	-	2	0	3	2	-	5	0	1	-	1	8
% Buses	0.0	1.5	-	1.0	-	1.1	1.0	-	1.1	0.0	2.4	-	1.7	1.1
Trucks	1	3	-	4	0	4	2	-	6	0	0	-	0	10
% Trucks	1.7	2.3	-	2.1	-	1.5	1.0	-	1.3	0.0	0.0	-	0.0	1.4
Bicycles on Road	0	0	-	0	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley»Horn

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

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

Count Name: 101st Ave & US 169 SB Ramps
Site Code:
Start Date: 09/14/2023

Peak Hour Data

09/20/2023 4:00 PM
Ending At
09/20/2023 5:00 PM

Lights
Buses
Trucks
Bicycles on Road
Other

US 169 SB Ramps [SB]

Out	In	Total
248	57	305
2	1	3
3	0	3
0	0	0
0	0	0
253	**58**	**311**

R	L	P
40	17	0
1	0	0
0	0	0
0	0	0
0	0	0
41	**17**	**0**

101st Ave [EB]

Out	In	Total
296	186	482
4	2	6
4	4	8
0	0	0
0	0	0
304	**192**	**496**

L	T	P
59	127	0
0	2	0
1	3	0
0	0	0
0	0	0
60	**132**	**0**

101st Ave [WB]

R	T	L	P
189	256	0	0
2	3	0	0
2	4	0	0
0	0	0	0
0	0	0	0
193	**263**	**0**	**0**

Out	In	Total
144	445	589
2	5	7
3	6	9
0	0	0
0	0	0
149	**456**	**605**

Fake Approach [NB]

Out	In	Total
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
0	**0**	**0**

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 ethan.scowcroft@kimley-horn.com

Count Name: 101st Ave N & US 169 NB Ramps
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	101st Ave Eastbound				101st Ave Westbound				US 169 NB Ramp Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	10	27	0	37	76	6	0	82	15	13	0	28	147
7:15 AM	10	39	0	49	106	2	0	108	18	10	0	28	185
7:30 AM	17	59	0	76	89	2	0	91	19	4	0	23	190
7:45 AM	7	30	0	37	67	3	0	70	22	17	0	39	146
Hourly Total	44	155	0	199	338	13	0	351	74	44	0	118	668
8:00 AM	3	22	0	25	56	2	0	58	20	19	0	39	122
8:15 AM	6	20	0	26	42	1	0	43	12	6	0	18	87
8:30 AM	5	13	0	18	39	2	0	41	14	13	0	27	86
8:45 AM	12	17	0	29	29	7	0	36	10	13	0	23	88
Hourly Total	26	72	0	98	166	12	0	178	56	51	0	107	383
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	35	0	39	80	1	0	81	83	41	0	124	244
4:15 PM	4	34	0	38	68	3	0	71	111	37	0	148	257
4:30 PM	5	52	0	57	65	0	0	65	122	57	0	179	301
4:45 PM	8	33	0	41	50	7	0	57	99	50	0	149	247
Hourly Total	21	154	0	175	263	11	0	274	415	185	0	600	1049
5:00 PM	6	40	0	46	52	1	0	53	93	44	0	137	236
5:15 PM	5	40	0	45	54	7	0	61	61	47	0	108	214
5:30 PM	7	32	0	39	60	3	0	63	49	41	0	90	192
5:45 PM	3	29	0	32	43	6	0	49	35	34	0	69	150
Hourly Total	21	141	0	162	209	17	0	226	238	166	0	404	792
Grand Total	112	522	0	634	976	53	0	1029	783	446	0	1229	2892
Approach %	17.7	82.3	-	-	94.8	5.2	-	-	63.7	36.3	-	-	-
Total %	3.9	18.0	-	21.9	33.7	1.8	-	35.6	27.1	15.4	-	42.5	-
Lights	111	509	-	620	944	50	-	994	754	441	-	1195	2809
% Lights	99.1	97.5	-	97.8	96.7	94.3	-	96.6	96.3	98.9	-	97.2	97.1
Buses	0	6	-	6	4	0	-	4	3	2	-	5	15
% Buses	0.0	1.1	-	0.9	0.4	0.0	-	0.4	0.4	0.4	-	0.4	0.5
Trucks	1	7	-	8	28	3	-	31	26	3	-	29	68
% Trucks	0.9	1.3	-	1.3	2.9	5.7	-	3.0	3.3	0.7	-	2.4	2.4
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Warrenville, Illinois, United States 60555
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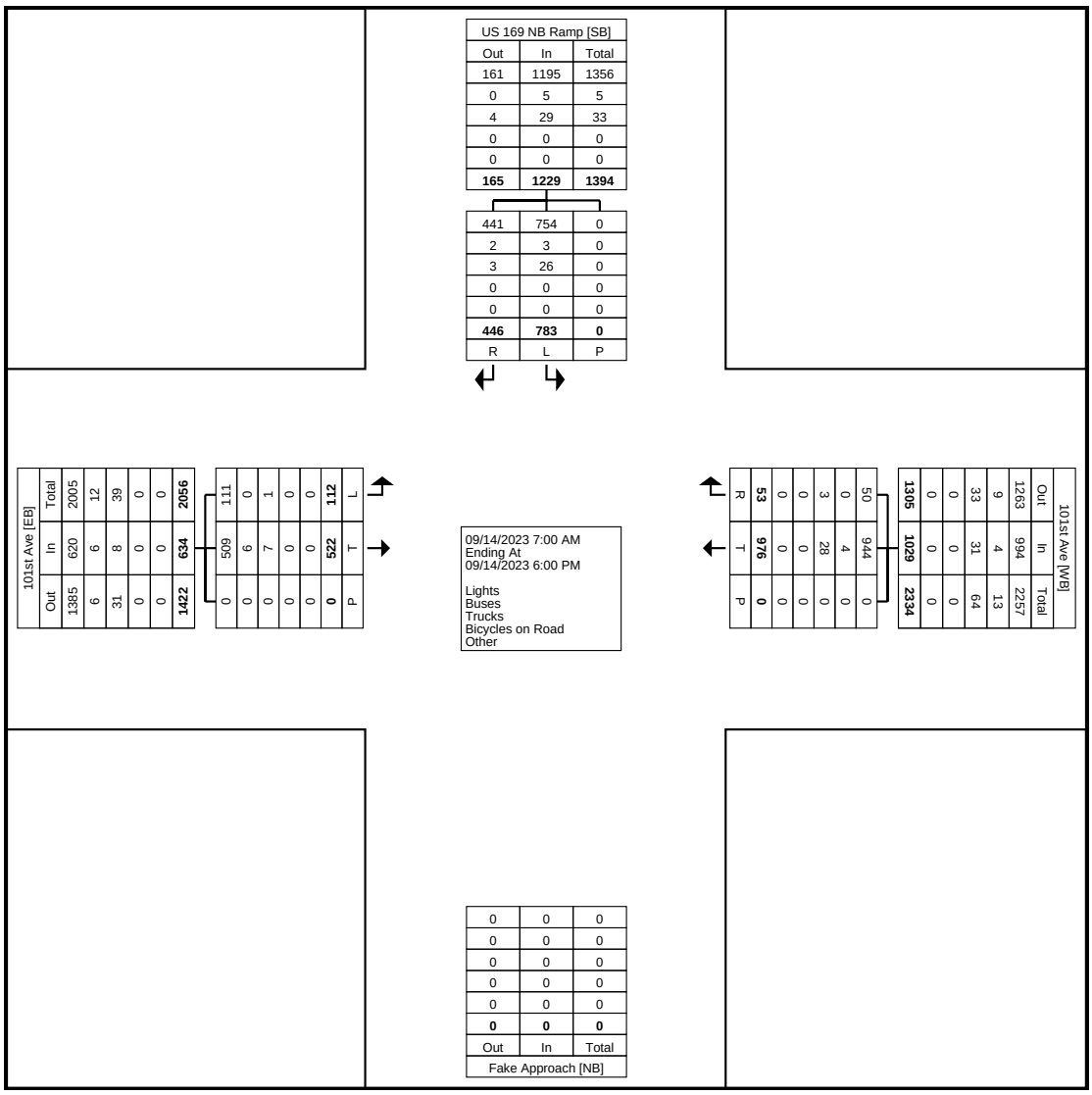
Count Name: 101st Ave N & US 169 NB Ramps
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

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

Count Name: 101st Ave N & US 169 NB Ramps
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	101st Ave Eastbound				101st Ave Westbound				US 169 NB Ramp Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	10	27	0	37	76	6	0	82	15	13	0	28	147
7:15 AM	10	39	0	49	106	2	0	108	18	10	0	28	185
7:30 AM	17	59	0	76	89	2	0	91	19	4	0	23	190
7:45 AM	7	30	0	37	67	3	0	70	22	17	0	39	146
Total	44	155	0	199	338	13	0	351	74	44	0	118	668
Approach %	22.1	77.9	-	-	96.3	3.7	-	-	62.7	37.3	-	-	-
Total %	6.6	23.2	-	29.8	50.6	1.9	-	52.5	11.1	6.6	-	17.7	-
PHF	0.647	0.657	-	0.655	0.797	0.542	-	0.813	0.841	0.647	-	0.756	0.879
Lights	44	150	-	194	325	12	-	337	68	43	-	111	642
% Lights	100.0	96.8	-	97.5	96.2	92.3	-	96.0	91.9	97.7	-	94.1	96.1
Buses	0	2	-	2	1	0	-	1	2	0	-	2	5
% Buses	0.0	1.3	-	1.0	0.3	0.0	-	0.3	2.7	0.0	-	1.7	0.7
Trucks	0	3	-	3	12	1	-	13	4	1	-	5	21
% Trucks	0.0	1.9	-	1.5	3.6	7.7	-	3.7	5.4	2.3	-	4.2	3.1
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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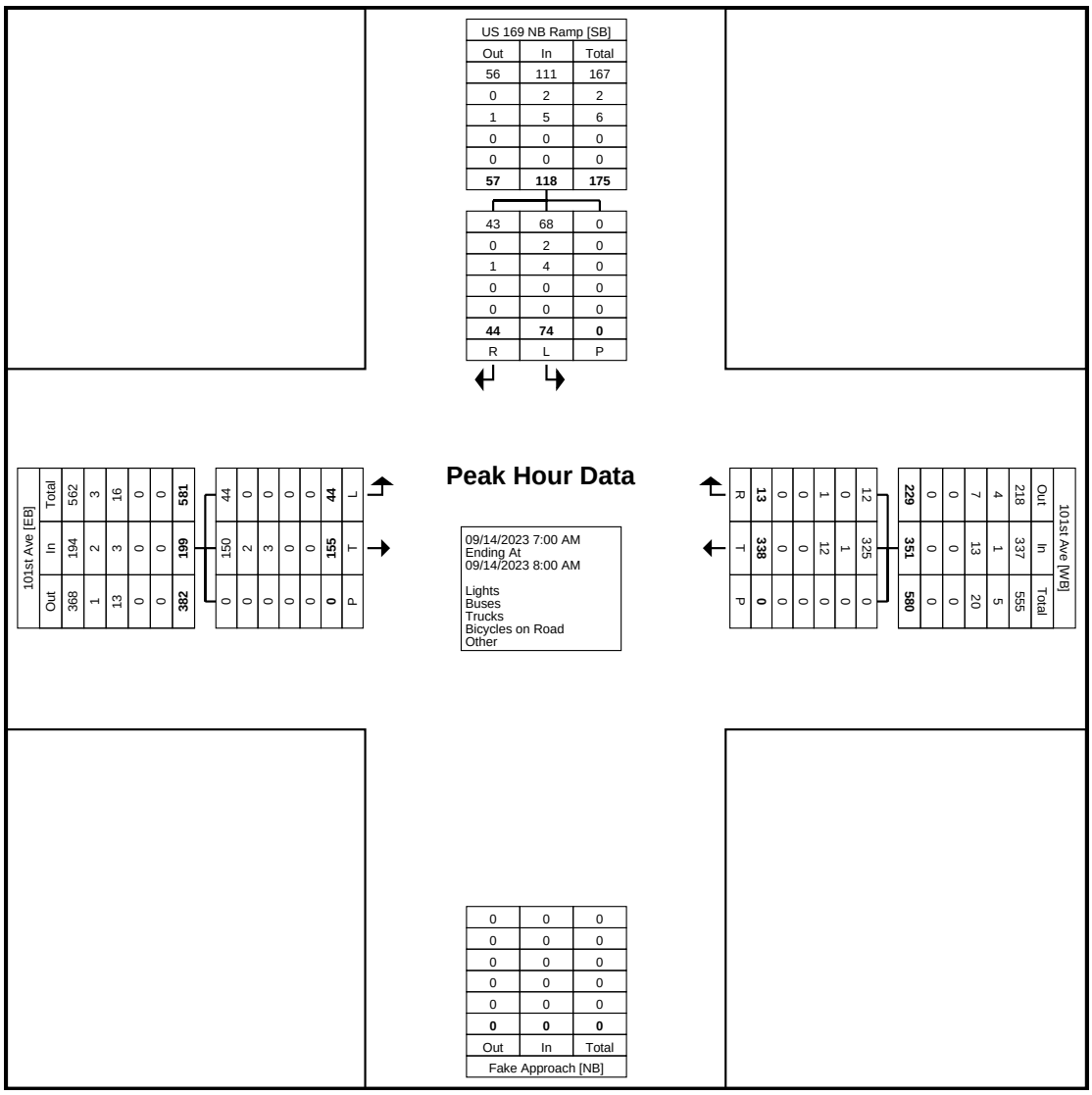
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

Kimley-Horn and Associates, Inc.
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Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: 101st Ave N & US 169 NB Ramps
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	101st Ave Eastbound				101st Ave Westbound				US 169 NB Ramp Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
4:00 PM	4	35	0	39	80	1	0	81	83	41	0	124	244
4:15 PM	4	34	0	38	68	3	0	71	111	37	0	148	257
4:30 PM	5	52	0	57	65	0	0	65	122	57	0	179	301
4:45 PM	8	33	0	41	50	7	0	57	99	50	0	149	247
Total	21	154	0	175	263	11	0	274	415	185	0	600	1049
Approach %	12.0	88.0	-	-	96.0	4.0	-	-	69.2	30.8	-	-	-
Total %	2.0	14.7	-	16.7	25.1	1.0	-	26.1	39.6	17.6	-	57.2	-
PHF	0.656	0.740	-	0.768	0.822	0.393	-	0.846	0.850	0.811	-	0.838	0.871
Lights	20	150	-	170	253	10	-	263	402	182	-	584	1017
% Lights	95.2	97.4	-	97.1	96.2	90.9	-	96.0	96.9	98.4	-	97.3	96.9
Buses	0	1	-	1	3	0	-	3	1	2	-	3	7
% Buses	0.0	0.6	-	0.6	1.1	0.0	-	1.1	0.2	1.1	-	0.5	0.7
Trucks	1	3	-	4	7	1	-	8	12	1	-	13	25
% Trucks	4.8	1.9	-	2.3	2.7	9.1	-	2.9	2.9	0.5	-	2.2	2.4
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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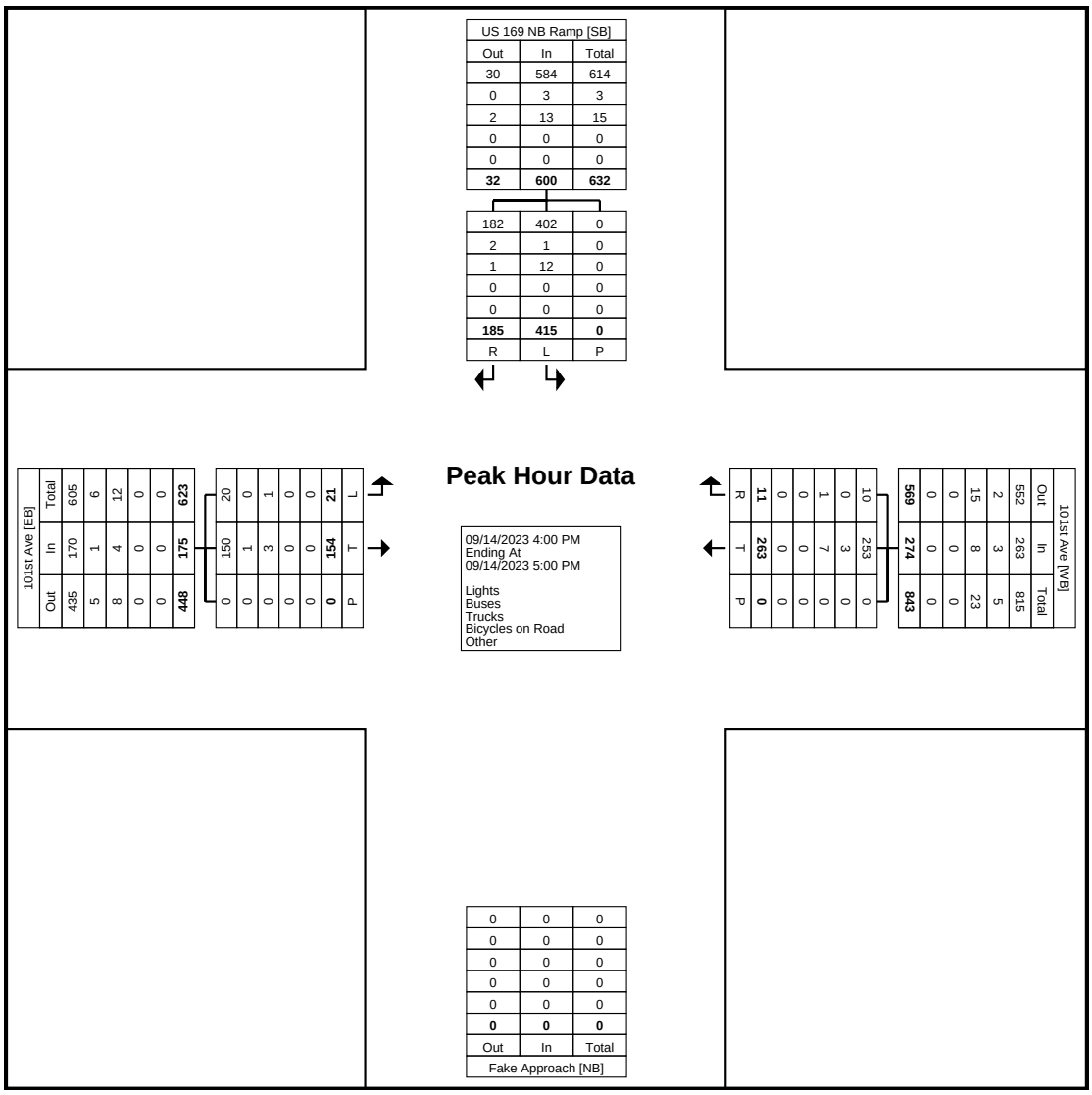

Turning Movement Peak Hour Data Plot (4:00 PM)

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

Count Name: 101st Ave N & Xylon Ave
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	101st Ave Eastbound					101st Ave Westbound					Xylon Ave Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	13	26	0	0	39	0	80	8	0	88	0	0	0	0	0	0	0	5	0	5	132
7:15 AM	17	42	0	0	59	0	105	6	0	111	0	0	0	0	0	0	0	10	0	10	180
7:30 AM	19	59	0	0	78	0	79	7	0	86	0	0	0	0	0	1	0	6	0	7	171
7:45 AM	19	34	1	0	54	0	71	9	0	80	0	0	0	0	0	0	0	4	0	4	138
Hourly Total	68	161	1	0	230	0	335	30	0	365	0	0	0	0	0	1	0	25	0	26	621
8:00 AM	12	27	1	0	40	0	54	2	0	56	1	0	1	0	2	3	0	7	0	10	108
8:15 AM	9	21	0	0	30	1	39	5	0	45	0	0	1	0	1	0	0	4	0	4	80
8:30 AM	5	21	0	0	26	1	45	1	0	47	0	0	0	0	0	2	0	4	0	6	79
8:45 AM	4	21	4	0	29	0	32	6	0	38	1	0	0	0	1	0	0	4	0	4	72
Hourly Total	30	90	5	0	125	2	170	14	0	186	2	0	2	0	4	5	0	19	0	24	339
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	18	102	1	0	121	0	51	1	0	52	0	0	1	0	1	6	0	24	0	30	204
4:15 PM	26	110	3	0	139	0	59	0	0	59	0	0	1	0	1	7	0	20	0	27	226
4:30 PM	45	123	0	0	168	0	37	2	0	39	2	0	0	0	2	7	0	22	0	29	238
4:45 PM	18	124	0	0	142	0	43	2	0	45	1	0	0	0	1	3	1	12	0	16	204
Hourly Total	107	459	4	0	570	0	190	5	0	195	3	0	2	0	5	23	1	78	0	102	872
5:00 PM	13	113	1	0	127	0	43	1	0	44	0	0	0	0	0	9	0	14	0	23	194
5:15 PM	12	80	11	0	103	5	47	3	0	55	2	0	1	0	3	0	0	15	0	15	176
5:30 PM	7	76	3	0	86	2	44	3	0	49	0	0	1	0	1	1	0	16	0	17	153
5:45 PM	7	58	3	0	68	1	38	4	0	43	2	0	0	1	2	5	0	12	0	17	130
Hourly Total	39	327	18	0	384	8	172	11	0	191	4	0	2	1	6	15	0	57	0	72	653
Grand Total	244	1037	28	0	1309	10	867	60	0	937	9	0	6	1	15	44	1	179	0	224	2485
Approach %	18.6	79.2	2.1	-	-	1.1	92.5	6.4	-	-	60.0	0.0	40.0	-	-	19.6	0.4	79.9	-	-	-
Total %	9.8	41.7	1.1	-	52.7	0.4	34.9	2.4	-	37.7	0.4	0.0	0.2	-	0.6	1.8	0.0	7.2	-	9.0	-
Lights	221	1018	27	-	1266	10	851	57	-	918	8	0	5	-	13	41	1	159	-	201	2398
% Lights	90.6	98.2	96.4	-	96.7	100.0	98.2	95.0	-	98.0	88.9	-	83.3	-	86.7	93.2	100.0	88.8	-	89.7	96.5
Buses	0	9	1	-	10	0	3	1	-	4	1	0	1	-	2	0	0	0	-	0	16
% Buses	0.0	0.9	3.6	-	0.8	0.0	0.3	1.7	-	0.4	11.1	-	16.7	-	13.3	0.0	0.0	0.0	-	0.0	0.6
Trucks	23	9	0	-	32	0	13	2	-	15	0	0	0	-	0	3	0	19	-	22	69
% Trucks	9.4	0.9	0.0	-	2.4	0.0	1.5	3.3	-	1.6	0.0	-	0.0	-	0.0	6.8	0.0	10.6	-	9.8	2.8
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	2
% Bicycles on Road	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.6	-	0.4	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-

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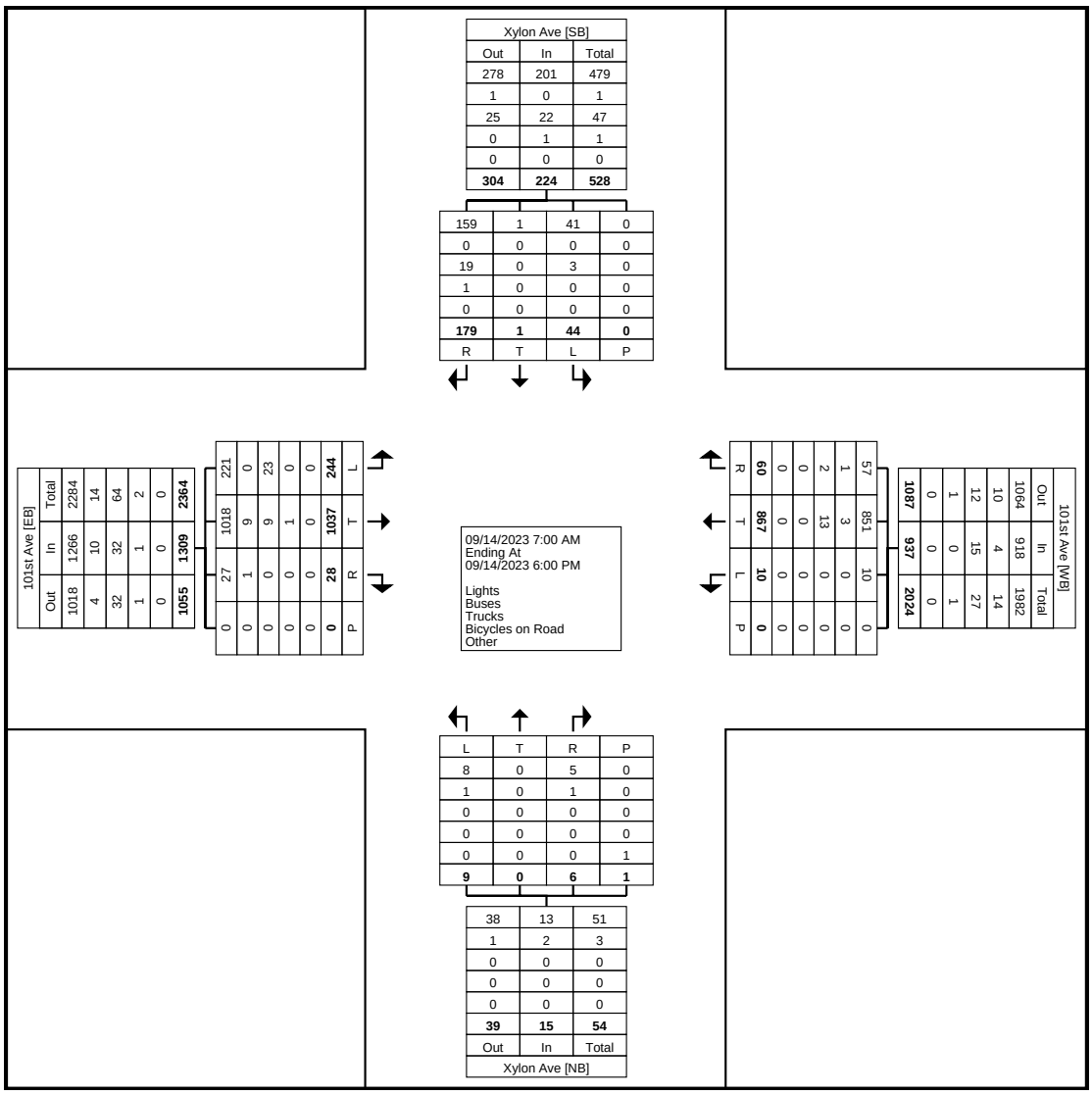
Start Date: 09/14/2023



Turning Movement Data Plot

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Count Name: 101st Ave N & Xylon Ave
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Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	101st Ave Eastbound					101st Ave Westbound					Xylon Ave Northbound					Xylon Ave Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	13	26	0	0	39	0	80	8	0	88	0	0	0	0	0	0	0	5	0	5	132
7:15 AM	17	42	0	0	59	0	105	6	0	111	0	0	0	0	0	0	0	10	0	10	180
7:30 AM	19	59	0	0	78	0	79	7	0	86	0	0	0	0	0	1	0	6	0	7	171
7:45 AM	19	34	1	0	54	0	71	9	0	80	0	0	0	0	0	0	0	4	0	4	138
Total	68	161	1	0	230	0	335	30	0	365	0	0	0	0	0	1	0	25	0	26	621
Approach %	29.6	70.0	0.4	-	-	0.0	91.8	8.2	-	-	0.0	0.0	0.0	-	-	3.8	0.0	96.2	-	-	-
Total %	11.0	25.9	0.2	-	37.0	0.0	53.9	4.8	-	58.8	0.0	0.0	0.0	-	0.0	0.2	0.0	4.0	-	4.2	-
PHF	0.895	0.682	0.250	-	0.737	0.000	0.798	0.833	-	0.822	0.000	0.000	0.000	-	0.000	0.250	0.000	0.625	-	0.650	0.863
Lights	63	157	0	-	220	0	326	29	-	355	0	0	0	-	0	1	0	20	-	21	596
% Lights	92.6	97.5	0.0	-	95.7	-	97.3	96.7	-	97.3	-	-	-	-	-	100.0	-	80.0	-	80.8	96.0
Buses	0	3	1	-	4	0	1	1	-	2	0	0	0	-	0	0	0	0	-	0	6
% Buses	0.0	1.9	100.0	-	1.7	-	0.3	3.3	-	0.5	-	-	-	-	-	0.0	-	0.0	-	0.0	1.0
Trucks	5	1	0	-	6	0	8	0	-	8	0	0	0	-	0	0	0	5	-	5	19
% Trucks	7.4	0.6	0.0	-	2.6	-	2.4	0.0	-	2.2	-	-	-	-	-	0.0	-	20.0	-	19.2	3.1
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	-	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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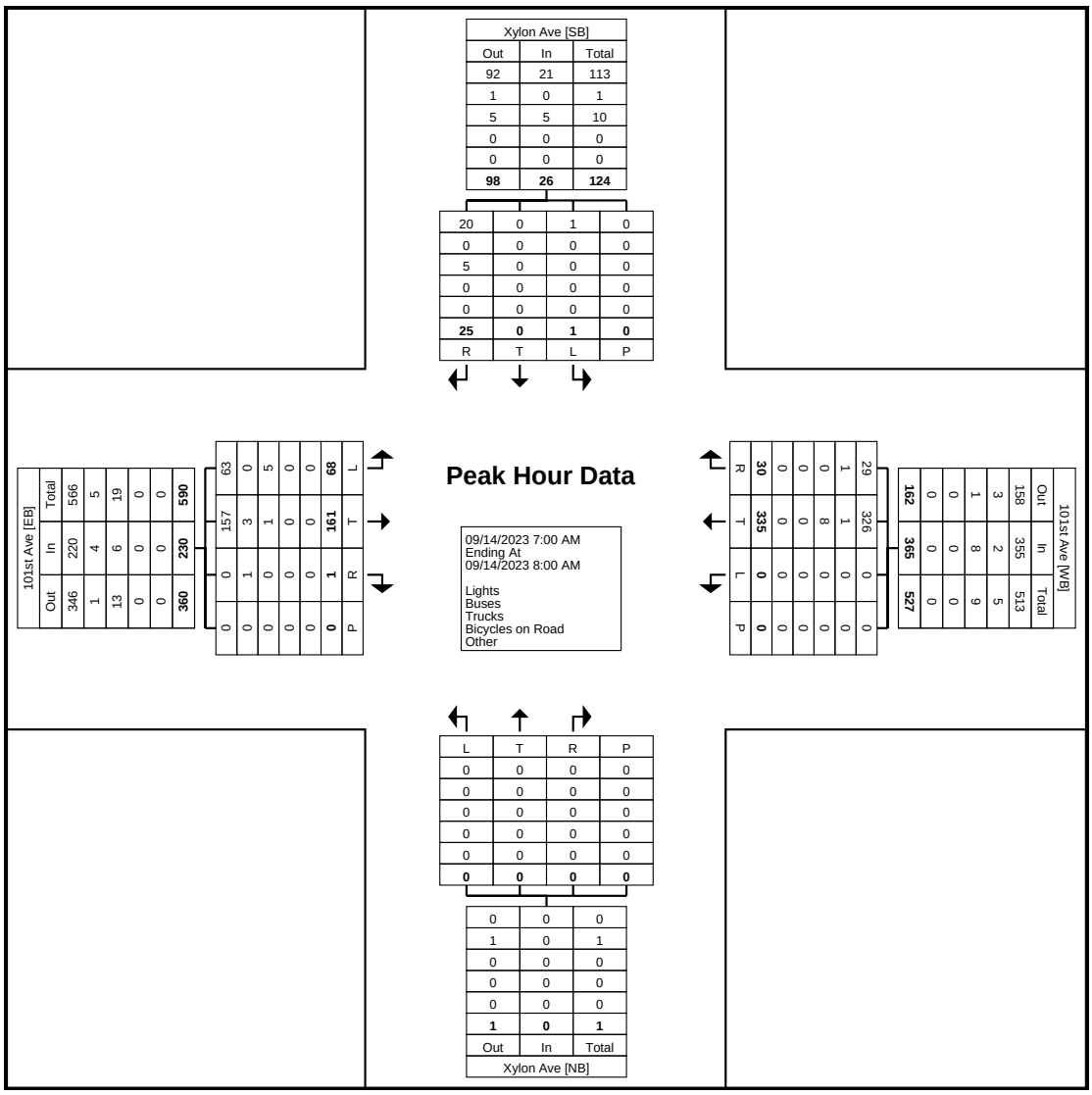

Turning Movement Peak Hour Data Plot (7:00 AM)

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Count Name: 101st Ave N & Xylon Ave
Site Code:
Start Date: 09/14/2023

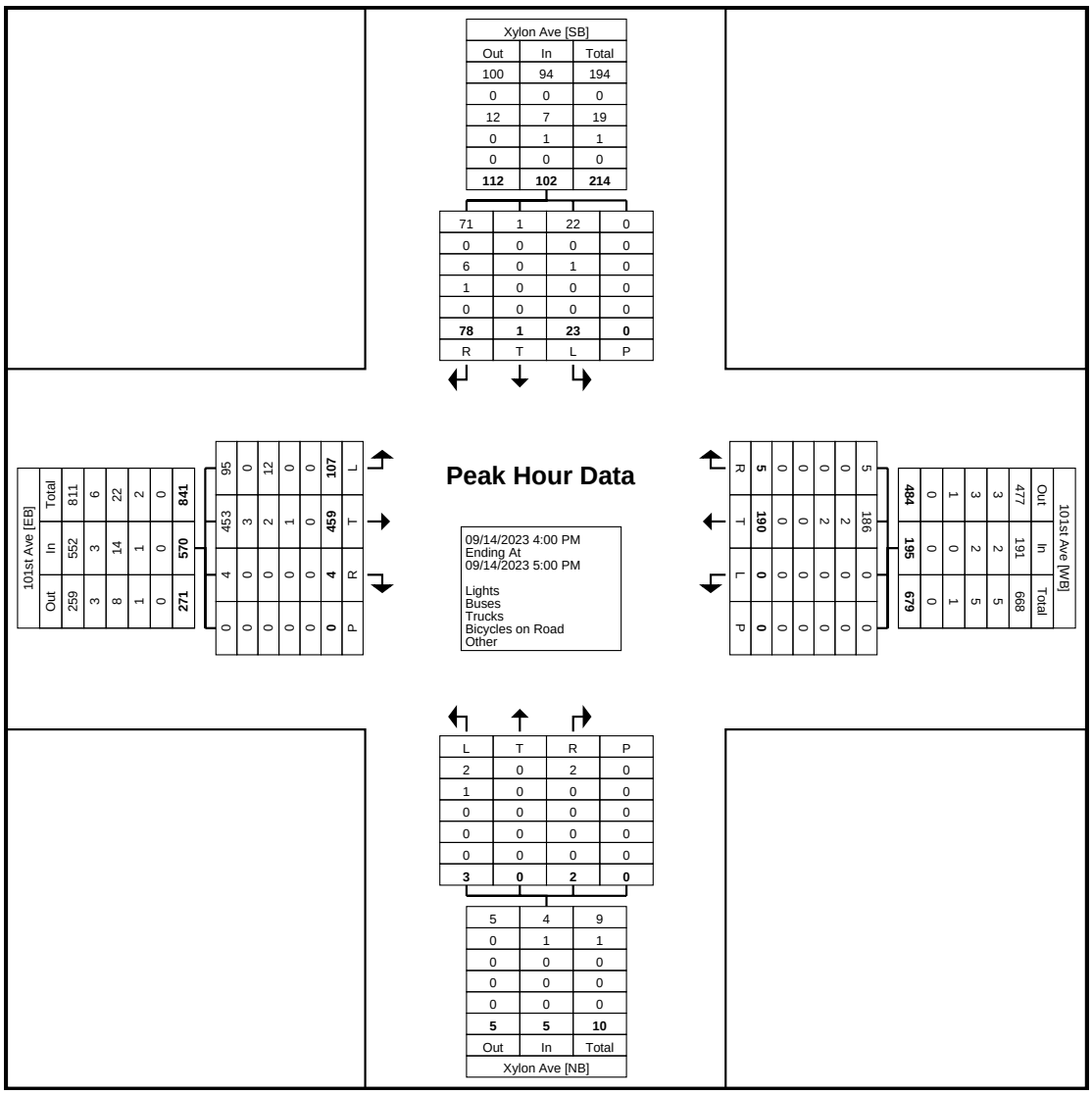
Turning Movement Peak Hour Data (4:00 PM)

Start Time	101st Ave Eastbound					101st Ave Westbound					Xylon Ave Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	18	102	1	0	121	0	51	1	0	52	0	0	1	0	1	6	0	24	0	30	204
4:15 PM	26	110	3	0	139	0	59	0	0	59	0	0	1	0	1	7	0	20	0	27	226
4:30 PM	45	123	0	0	168	0	37	2	0	39	2	0	0	0	2	7	0	22	0	29	238
4:45 PM	18	124	0	0	142	0	43	2	0	45	1	0	0	0	1	3	1	12	0	16	204
Total	107	459	4	0	570	0	190	5	0	195	3	0	2	0	5	23	1	78	0	102	872
Approach %	18.8	80.5	0.7	-	-	0.0	97.4	2.6	-	-	60.0	0.0	40.0	-	-	22.5	1.0	76.5	-	-	-
Total %	12.3	52.6	0.5	-	65.4	0.0	21.8	0.6	-	22.4	0.3	0.0	0.2	-	0.6	2.6	0.1	8.9	-	11.7	-
PHF	0.594	0.925	0.333	-	0.848	0.000	0.805	0.625	-	0.826	0.375	0.000	0.500	-	0.625	0.821	0.250	0.813	-	0.850	0.916
Lights	95	453	4	-	552	0	186	5	-	191	2	0	2	-	4	22	1	71	-	94	841
% Lights	88.8	98.7	100.0	-	96.8	-	97.9	100.0	-	97.9	66.7	-	100.0	-	80.0	95.7	100.0	91.0	-	92.2	96.4
Buses	0	3	0	-	3	0	2	0	-	2	1	0	0	-	1	0	0	0	-	0	6
% Buses	0.0	0.7	0.0	-	0.5	-	1.1	0.0	-	1.0	33.3	-	0.0	-	20.0	0.0	0.0	0.0	-	0.0	0.7
Trucks	12	2	0	-	14	0	2	0	-	2	0	0	0	-	0	1	0	6	-	7	23
% Trucks	11.2	0.4	0.0	-	2.5	-	1.1	0.0	-	1.0	0.0	-	0.0	-	0.0	4.3	0.0	7.7	-	6.9	2.6
Bicycles on Road	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	2
% Bicycles on Road	0.0	0.2	0.0	-	0.2	-	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	1.3	-	1.0	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
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: 101st Ave N & Xylon Ave
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	101st Ave Eastbound				Winnetka Ave Northbound				Winnetka Ave Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	18	9	0	27	22	48	0	70	81	66	0	147	244
7:15 AM	27	17	0	44	15	44	0	59	76	91	0	167	270
7:30 AM	25	37	0	62	13	31	0	44	105	77	0	182	288
7:45 AM	8	28	0	36	19	46	0	65	104	60	0	164	265
Hourly Total	78	91	0	169	69	169	0	238	366	294	0	660	1067
8:00 AM	8	23	0	31	16	32	0	48	79	38	0	117	196
8:15 AM	11	12	0	23	11	38	0	49	60	33	0	93	165
8:30 AM	14	8	0	22	13	31	0	44	45	33	0	78	144
8:45 AM	7	14	0	21	19	48	0	67	52	20	0	72	160
Hourly Total	40	57	0	97	59	149	0	208	236	124	0	360	665
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	51	55	0	106	21	117	0	138	46	37	0	83	327
4:15 PM	57	65	0	122	23	106	0	129	55	30	0	85	336
4:30 PM	53	74	0	127	16	100	0	116	74	27	0	101	344
4:45 PM	52	77	0	129	23	94	0	117	41	24	0	65	311
Hourly Total	213	271	0	484	83	417	0	500	216	118	0	334	1318
5:00 PM	51	71	0	122	19	90	0	109	47	22	0	69	300
5:15 PM	38	51	0	89	30	108	0	138	59	26	0	85	312
5:30 PM	43	32	0	75	17	95	0	112	44	32	0	76	263
5:45 PM	32	32	0	64	22	83	0	105	47	22	0	69	238
Hourly Total	164	186	0	350	88	376	0	464	197	102	0	299	1113
Grand Total	495	605	0	1100	299	1111	0	1410	1015	638	0	1653	4163
Approach %	45.0	55.0	-	-	21.2	78.8	-	-	61.4	38.6	-	-	-
Total %	11.9	14.5	-	26.4	7.2	26.7	-	33.9	24.4	15.3	-	39.7	-
Lights	486	592	-	1078	292	1065	-	1357	955	625	-	1580	4015
% Lights	98.2	97.9	-	98.0	97.7	95.9	-	96.2	94.1	98.0	-	95.6	96.4
Buses	3	5	-	8	2	8	-	10	8	2	-	10	28
% Buses	0.6	0.8	-	0.7	0.7	0.7	-	0.7	0.8	0.3	-	0.6	0.7
Trucks	5	8	-	13	5	38	-	43	52	11	-	63	119
% Trucks	1.0	1.3	-	1.2	1.7	3.4	-	3.0	5.1	1.7	-	3.8	2.9
Bicycles on Road	1	0	-	1	0	0	-	0	0	0	-	0	1
% Bicycles on Road	0.2	0.0	-	0.1	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Kimley-Horn and Associates, Inc.
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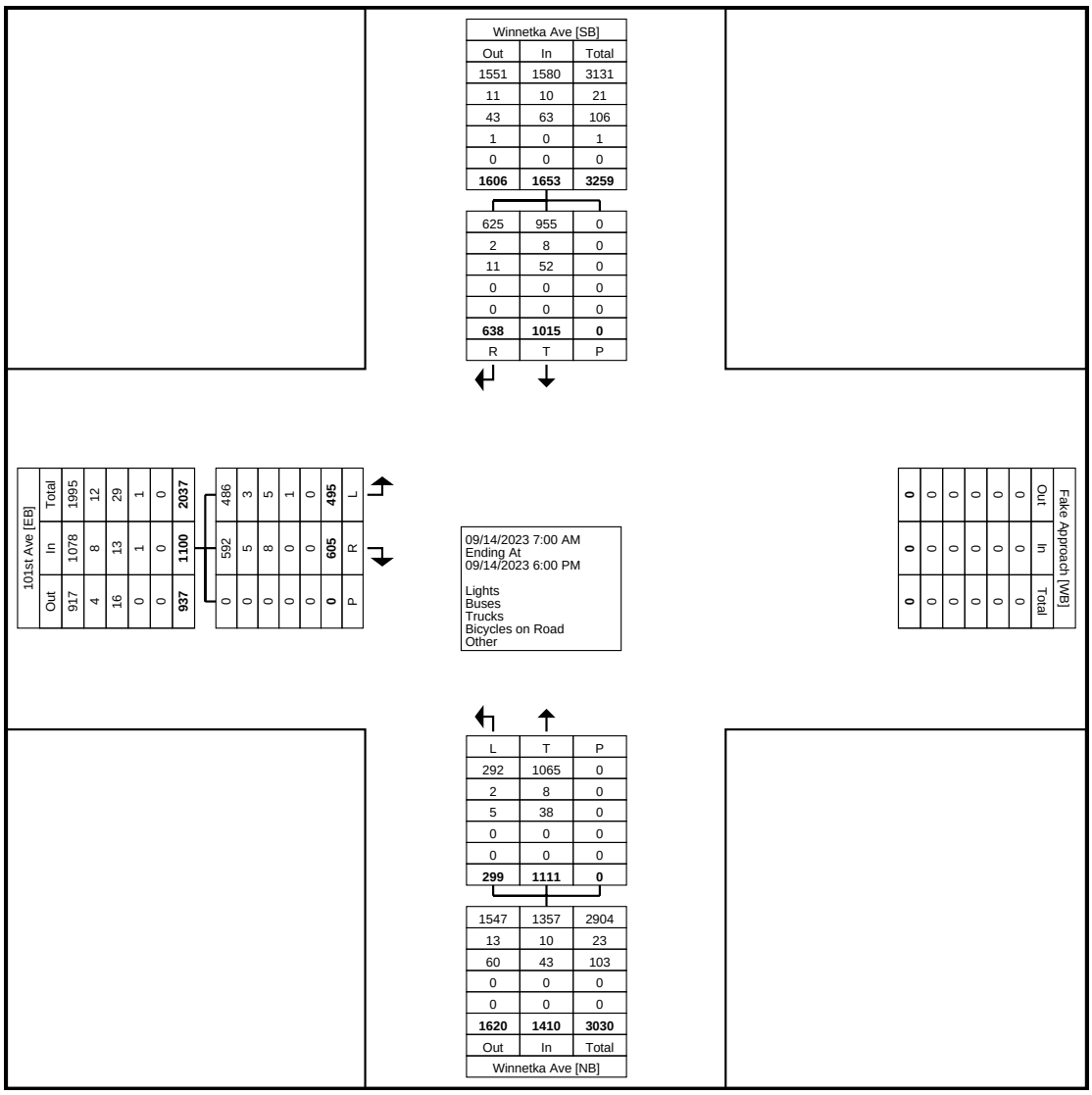
Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

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

Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	101st Ave Eastbound				Winnetka Ave Northbound				Winnetka Ave Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	18	9	0	27	22	48	0	70	81	66	0	147	244
7:15 AM	27	17	0	44	15	44	0	59	76	91	0	167	270
7:30 AM	25	37	0	62	13	31	0	44	105	77	0	182	288
7:45 AM	8	28	0	36	19	46	0	65	104	60	0	164	265
Total	78	91	0	169	69	169	0	238	366	294	0	660	1067
Approach %	46.2	53.8	-	-	29.0	71.0	-	-	55.5	44.5	-	-	-
Total %	7.3	8.5	-	15.8	6.5	15.8	-	22.3	34.3	27.6	-	61.9	-
PHF	0.722	0.615	-	0.681	0.784	0.880	-	0.850	0.871	0.808	-	0.907	0.926
Lights	75	89	-	164	68	162	-	230	343	285	-	628	1022
% Lights	96.2	97.8	-	97.0	98.6	95.9	-	96.6	93.7	96.9	-	95.2	95.8
Buses	2	1	-	3	0	2	-	2	2	1	-	3	8
% Buses	2.6	1.1	-	1.8	0.0	1.2	-	0.8	0.5	0.3	-	0.5	0.7
Trucks	1	1	-	2	1	5	-	6	21	8	-	29	37
% Trucks	1.3	1.1	-	1.2	1.4	3.0	-	2.5	5.7	2.7	-	4.4	3.5
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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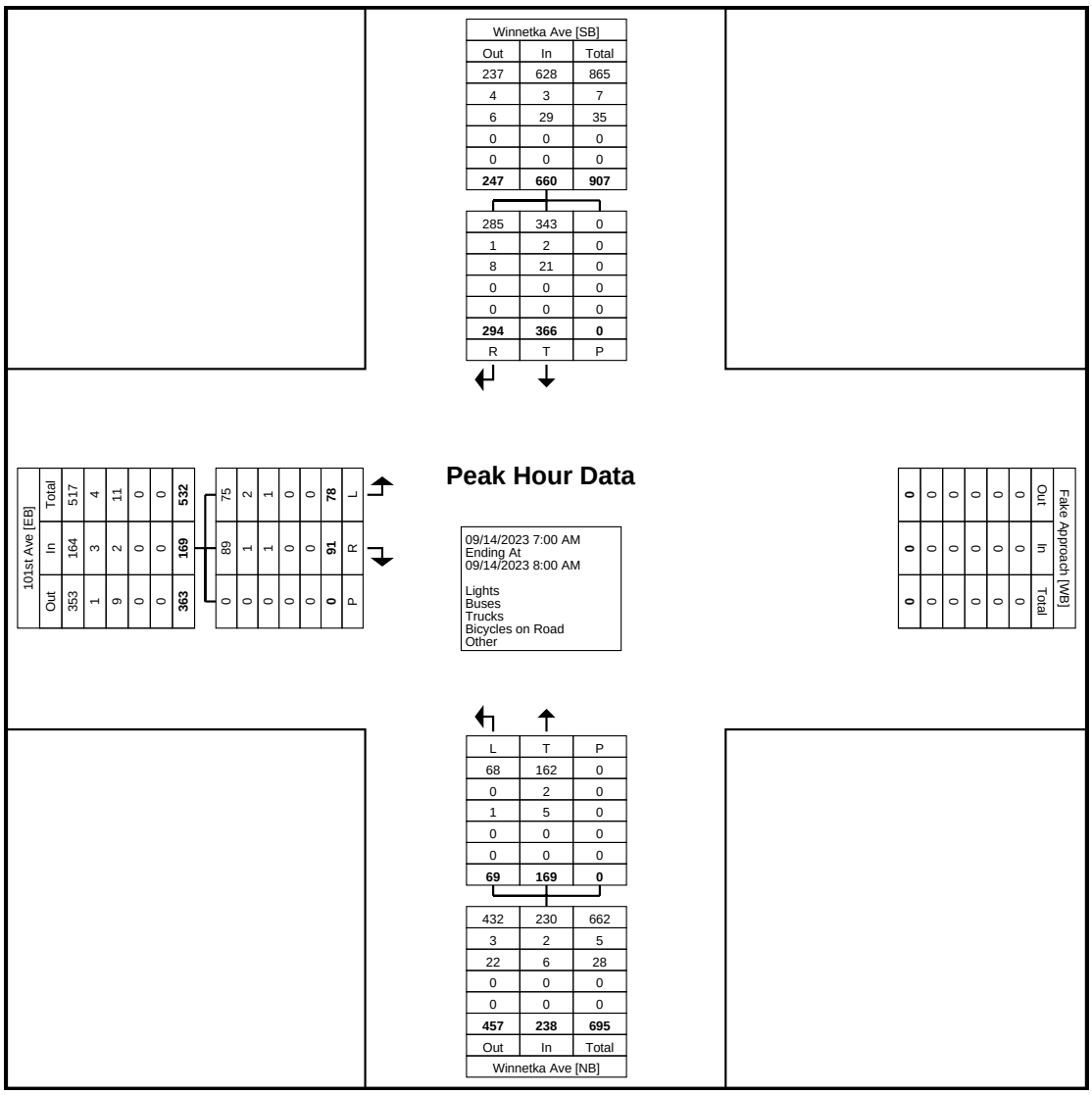
Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

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

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

Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	101st Ave Eastbound				Winnetka Ave Northbound				Winnetka Ave Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	51	55	0	106	21	117	0	138	46	37	0	83	327
4:15 PM	57	65	0	122	23	106	0	129	55	30	0	85	336
4:30 PM	53	74	0	127	16	100	0	116	74	27	0	101	344
4:45 PM	52	77	0	129	23	94	0	117	41	24	0	65	311
Total	213	271	0	484	83	417	0	500	216	118	0	334	1318
Approach %	44.0	56.0	-	-	16.6	83.4	-	-	64.7	35.3	-	-	-
Total %	16.2	20.6	-	36.7	6.3	31.6	-	37.9	16.4	9.0	-	25.3	-
PHF	0.934	0.880	-	0.938	0.902	0.891	-	0.906	0.730	0.797	-	0.827	0.958
Lights	213	267	-	480	81	401	-	482	207	115	-	322	1284
% Lights	100.0	98.5	-	99.2	97.6	96.2	-	96.4	95.8	97.5	-	96.4	97.4
Buses	0	2	-	2	2	4	-	6	3	1	-	4	12
% Buses	0.0	0.7	-	0.4	2.4	1.0	-	1.2	1.4	0.8	-	1.2	0.9
Trucks	0	2	-	2	0	12	-	12	6	2	-	8	22
% Trucks	0.0	0.7	-	0.4	0.0	2.9	-	2.4	2.8	1.7	-	2.4	1.7
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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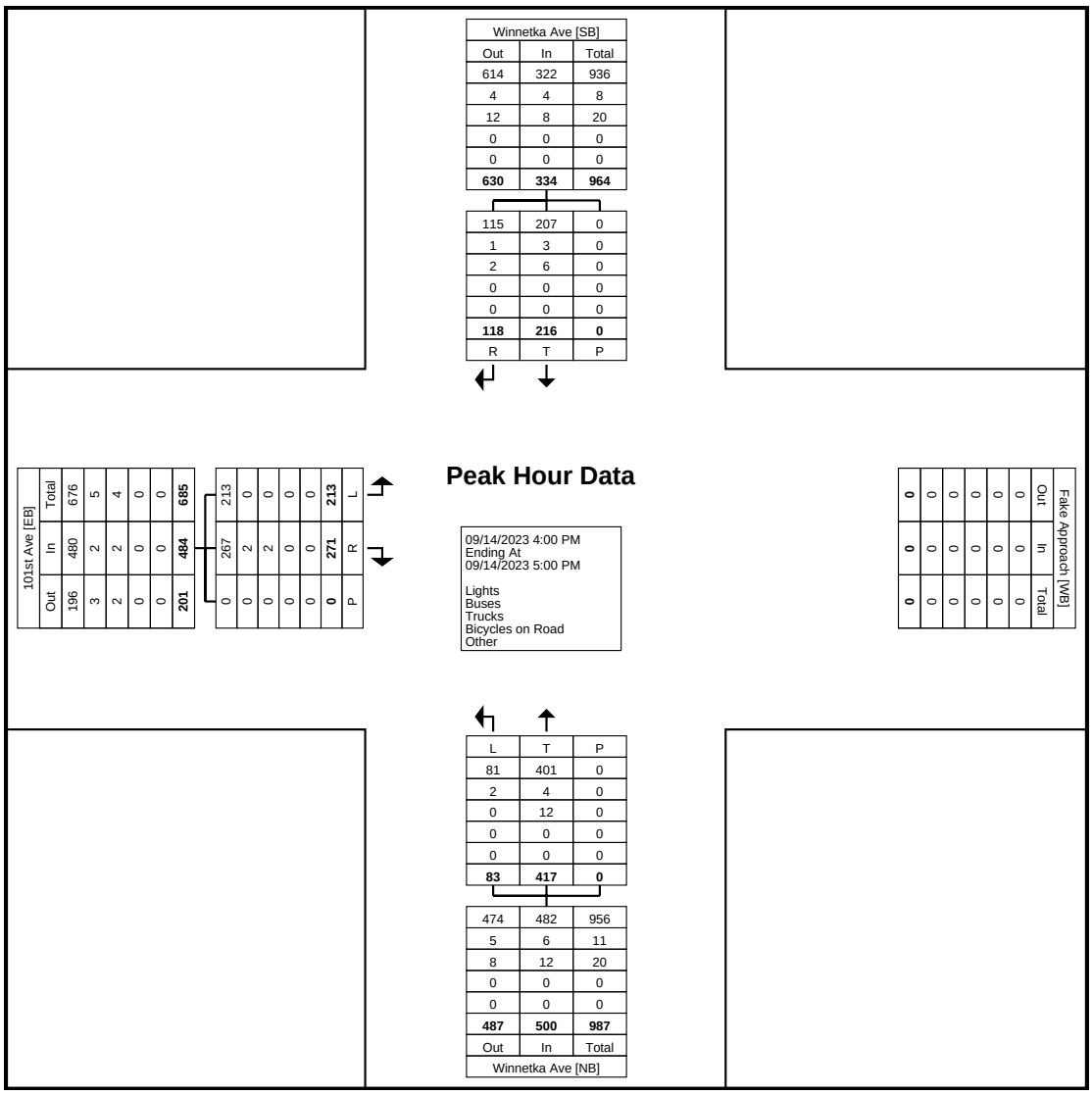
Count Name: 101st Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	0	13	0	13	50	2	7	0	59	30	23	10	0	63	6	89	4	0	99	234
7:15 AM	0	3	14	0	17	56	6	3	0	65	16	26	27	0	69	12	96	2	0	110	261
7:30 AM	1	1	6	0	8	46	3	8	0	57	7	29	21	0	57	5	126	4	0	135	257
7:45 AM	0	1	11	0	12	28	1	8	0	37	14	28	13	0	55	7	125	7	0	139	243
Hourly Total	1	5	44	0	50	180	12	26	0	218	67	106	71	0	244	30	436	17	0	483	995
8:00 AM	2	0	10	0	12	24	2	3	0	29	9	19	11	0	39	5	77	3	0	85	165
8:15 AM	1	1	5	0	7	23	4	8	0	35	12	27	11	0	50	3	64	1	1	68	160
8:30 AM	0	0	7	0	7	13	2	4	0	19	20	16	9	0	45	2	58	2	0	62	133
8:45 AM	1	3	7	0	11	18	0	2	0	20	25	24	6	0	55	4	47	4	0	55	141
Hourly Total	4	4	29	0	37	78	8	17	0	103	66	86	37	0	189	14	246	10	1	270	599
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	8	3	25	0	36	21	5	9	0	35	11	118	37	0	166	8	39	0	0	47	284
4:15 PM	8	8	18	0	34	16	2	5	1	23	10	104	48	0	162	5	48	6	0	59	278
4:30 PM	10	30	43	0	83	16	4	7	0	27	4	116	33	0	153	5	42	2	0	49	312
4:45 PM	5	5	8	0	18	15	4	8	0	27	5	107	35	0	147	11	41	2	0	54	246
Hourly Total	31	46	94	0	171	68	15	29	1	112	30	445	153	0	628	29	170	10	0	209	1120
5:00 PM	1	8	11	0	20	14	1	3	0	18	6	88	46	0	140	12	46	2	0	60	238
5:15 PM	5	8	11	0	24	21	2	10	0	33	1	104	38	0	143	7	52	1	0	60	260
5:30 PM	2	2	10	0	14	18	1	12	0	31	7	90	40	0	137	6	51	3	0	60	242
5:45 PM	2	4	14	0	20	18	4	13	4	35	6	77	33	0	116	7	40	5	1	52	223
Hourly Total	10	22	46	0	78	71	8	38	4	117	20	359	157	0	536	32	189	11	1	232	963
Grand Total	46	77	213	0	336	397	43	110	5	550	183	996	418	0	1597	105	1041	48	2	1194	3677
Approach %	13.7	22.9	63.4	-	-	72.2	7.8	20.0	-	-	11.5	62.4	26.2	-	-	8.8	87.2	4.0	-	-	-
Total %	1.3	2.1	5.8	-	9.1	10.8	1.2	3.0	-	15.0	5.0	27.1	11.4	-	43.4	2.9	28.3	1.3	-	32.5	-
Lights	40	75	164	-	279	392	42	105	-	539	155	974	411	-	1540	102	1023	43	-	1168	3526
% Lights	87.0	97.4	77.0	-	83.0	98.7	97.7	95.5	-	98.0	84.7	97.8	98.3	-	96.4	97.1	98.3	89.6	-	97.8	95.9
Buses	2	0	1	-	3	3	0	4	-	7	2	6	5	-	13	3	6	0	-	9	32
% Buses	4.3	0.0	0.5	-	0.9	0.8	0.0	3.6	-	1.3	1.1	0.6	1.2	-	0.8	2.9	0.6	0.0	-	0.8	0.9
Trucks	4	1	48	-	53	2	1	0	-	3	26	14	0	-	40	0	12	3	-	15	111
% Trucks	8.7	1.3	22.5	-	15.8	0.5	2.3	0.0	-	0.5	14.2	1.4	0.0	-	2.5	0.0	1.2	6.3	-	1.3	3.0
Bicycles on Road	0	1	0	-	1	0	0	1	-	1	0	2	2	-	4	0	0	2	-	2	8
% Bicycles on Road	0.0	1.3	0.0	-	0.3	0.0	0.0	0.9	-	0.2	0.0	0.2	0.5	-	0.3	0.0	0.0	4.2	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	60.0	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	40.0	-	-	-	-	-	-	-	-	-	100.0	-	-

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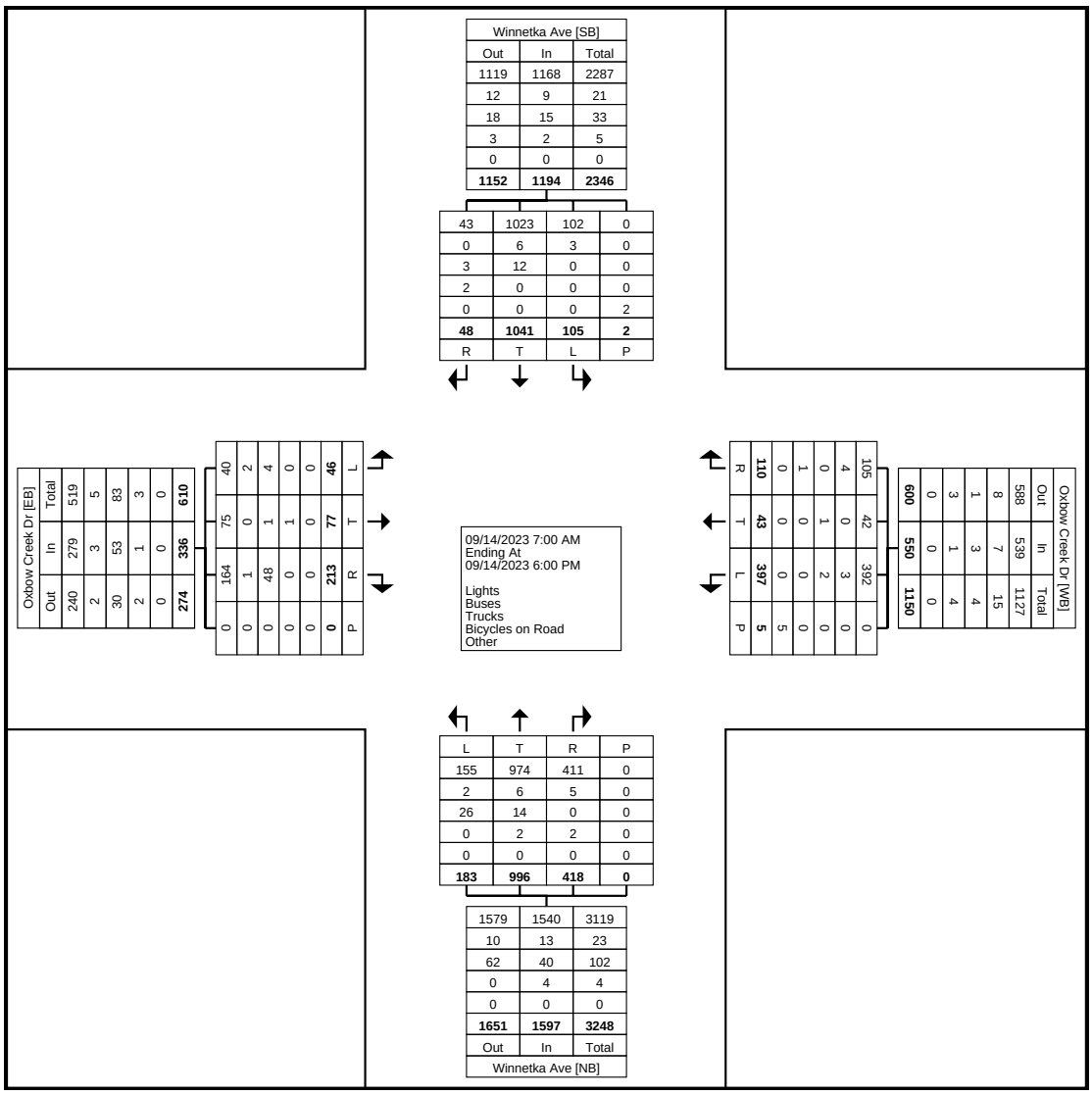
Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	0	13	0	13	50	2	7	0	59	30	23	10	0	63	6	89	4	0	99	234
7:15 AM	0	3	14	0	17	56	6	3	0	65	16	26	27	0	69	12	96	2	0	110	261
7:30 AM	1	1	6	0	8	46	3	8	0	57	7	29	21	0	57	5	126	4	0	135	257
7:45 AM	0	1	11	0	12	28	1	8	0	37	14	28	13	0	55	7	125	7	0	139	243
Total	1	5	44	0	50	180	12	26	0	218	67	106	71	0	244	30	436	17	0	483	995
Approach %	2.0	10.0	88.0	-	-	82.6	5.5	11.9	-	-	27.5	43.4	29.1	-	-	6.2	90.3	3.5	-	-	-
Total %	0.1	0.5	4.4	-	5.0	18.1	1.2	2.6	-	21.9	6.7	10.7	7.1	-	24.5	3.0	43.8	1.7	-	48.5	-
PHF	0.250	0.417	0.786	-	0.735	0.804	0.500	0.813	-	0.838	0.558	0.914	0.657	-	0.884	0.625	0.865	0.607	-	0.869	0.953
Lights	1	5	21	-	27	179	12	24	-	215	64	101	68	-	233	28	429	15	-	472	947
% Lights	100.0	100.0	47.7	-	54.0	99.4	100.0	92.3	-	98.6	95.5	95.3	95.8	-	95.5	93.3	98.4	88.2	-	97.7	95.2
Buses	0	0	0	-	0	1	0	2	-	3	1	0	3	-	4	2	2	0	-	4	11
% Buses	0.0	0.0	0.0	-	0.0	0.6	0.0	7.7	-	1.4	1.5	0.0	4.2	-	1.6	6.7	0.5	0.0	-	0.8	1.1
Trucks	0	0	23	-	23	0	0	0	-	0	2	4	0	-	6	0	5	2	-	7	36
% Trucks	0.0	0.0	52.3	-	46.0	0.0	0.0	0.0	-	0.0	3.0	3.8	0.0	-	2.5	0.0	1.1	11.8	-	1.4	3.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.9	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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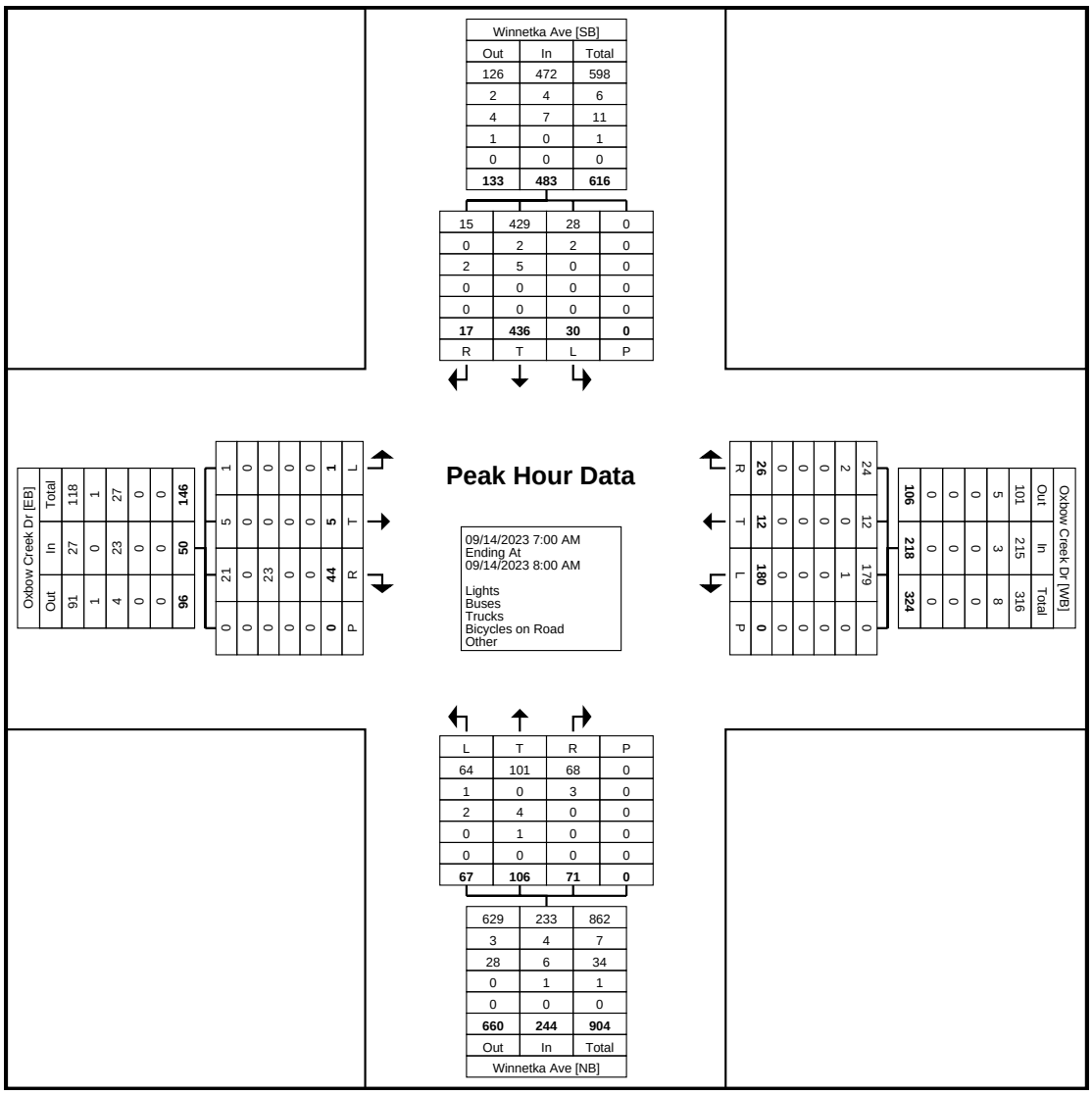
Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

Kimley-Horn and Associates, Inc.
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Warrenville, Illinois, United States 60555
(630) 487-5550 ethan.scowcroft@kimley-horn.com

Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	8	3	25	0	36	21	5	9	0	35	11	118	37	0	166	8	39	0	0	47	284
4:15 PM	8	8	18	0	34	16	2	5	1	23	10	104	48	0	162	5	48	6	0	59	278
4:30 PM	10	30	43	0	83	16	4	7	0	27	4	116	33	0	153	5	42	2	0	49	312
4:45 PM	5	5	8	0	18	15	4	8	0	27	5	107	35	0	147	11	41	2	0	54	246
Total	31	46	94	0	171	68	15	29	1	112	30	445	153	0	628	29	170	10	0	209	1120
Approach %	18.1	26.9	55.0	-	-	60.7	13.4	25.9	-	-	4.8	70.9	24.4	-	-	13.9	81.3	4.8	-	-	-
Total %	2.8	4.1	8.4	-	15.3	6.1	1.3	2.6	-	10.0	2.7	39.7	13.7	-	56.1	2.6	15.2	0.9	-	18.7	-
PHF	0.775	0.383	0.547	-	0.515	0.810	0.750	0.806	-	0.800	0.682	0.943	0.797	-	0.946	0.659	0.885	0.417	-	0.886	0.897
Lights	29	46	89	-	164	64	14	28	-	106	21	440	151	-	612	28	166	8	-	202	1084
% Lights	93.5	100.0	94.7	-	95.9	94.1	93.3	96.6	-	94.6	70.0	98.9	98.7	-	97.5	96.6	97.6	80.0	-	96.7	96.8
Buses	0	0	0	-	0	2	0	0	-	2	0	3	1	-	4	1	2	0	-	3	9
% Buses	0.0	0.0	0.0	-	0.0	2.9	0.0	0.0	-	1.8	0.0	0.7	0.7	-	0.6	3.4	1.2	0.0	-	1.4	0.8
Trucks	2	0	5	-	7	2	1	0	-	3	9	2	0	-	11	0	2	1	-	3	24
% Trucks	6.5	0.0	5.3	-	4.1	2.9	6.7	0.0	-	2.7	30.0	0.4	0.0	-	1.8	0.0	1.2	10.0	-	1.4	2.1
Bicycles on Road	0	0	0	-	0	0	0	1	-	1	0	0	1	-	1	0	0	1	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	3.4	-	0.9	0.0	0.0	0.7	-	0.2	0.0	0.0	10.0	-	0.5	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-

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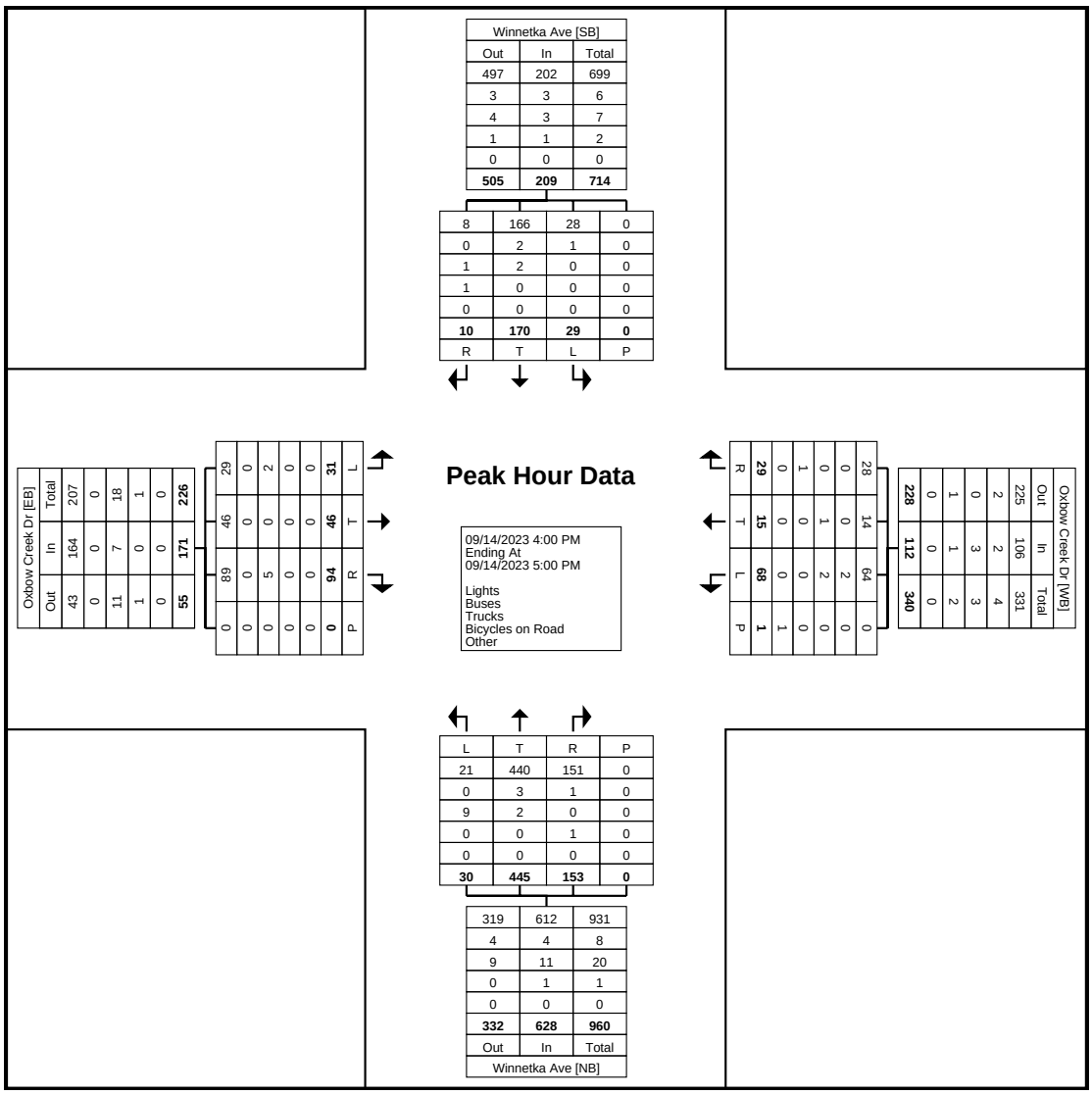
Count Name: Oxbow Creek Drive & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: 107th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	Eastbound Approach Eastbound					107th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	0	1	0	2	6	0	6	0	12	2	20	1	0	23	0	86	5	0	91	128
7:15 AM	0	0	1	0	1	7	0	2	0	9	1	28	2	0	31	3	95	1	0	99	140
7:30 AM	1	0	1	0	2	4	0	3	0	7	4	26	3	0	33	2	116	3	0	121	163
7:45 AM	0	0	2	0	2	5	0	1	0	6	2	32	1	0	35	0	130	6	0	136	179
Hourly Total	2	0	5	0	7	22	0	12	0	34	9	106	7	0	122	5	427	15	0	447	610
8:00 AM	0	0	0	0	0	9	0	2	0	11	0	20	1	0	21	1	71	2	0	74	106
8:15 AM	0	0	1	0	1	8	0	0	0	8	2	33	0	0	35	1	57	1	0	59	103
8:30 AM	1	0	2	0	3	4	0	1	0	5	1	12	4	0	17	1	51	1	0	53	78
8:45 AM	2	0	1	0	3	2	0	2	0	4	5	21	0	0	26	1	51	0	0	52	85
Hourly Total	3	0	4	0	7	23	0	5	0	28	8	86	5	0	99	4	230	4	0	238	372
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	0	2	0	5	2	0	7	0	9	0	120	11	0	131	4	38	0	0	42	187
4:15 PM	0	0	3	0	3	4	0	0	0	4	0	113	2	0	115	6	50	0	0	56	178
4:30 PM	1	0	1	0	2	1	0	1	0	2	1	122	4	0	127	2	47	0	0	49	180
4:45 PM	0	0	1	0	1	3	0	4	0	7	1	115	3	0	119	2	46	1	0	49	176
Hourly Total	4	0	7	0	11	10	0	12	0	22	2	470	20	0	492	14	181	1	0	196	721
5:00 PM	1	0	1	0	2	3	0	2	0	5	0	85	5	0	90	3	51	0	0	54	151
5:15 PM	0	0	0	0	0	4	0	3	0	7	2	111	7	0	120	0	53	0	0	53	180
5:30 PM	0	0	1	0	1	1	0	0	0	1	1	96	4	0	101	3	57	1	0	61	164
5:45 PM	0	0	0	0	0	3	0	6	0	9	0	86	5	0	91	4	50	0	0	54	154
Hourly Total	1	0	2	0	3	11	0	11	0	22	3	378	21	0	402	10	211	1	0	222	649
Grand Total	10	0	18	0	28	66	0	40	0	106	22	1040	53	0	1115	33	1049	21	0	1103	2352
Approach %	35.7	0.0	64.3	-	-	62.3	0.0	37.7	-	-	2.0	93.3	4.8	-	-	3.0	95.1	1.9	-	-	-
Total %	0.4	0.0	0.8	-	1.2	2.8	0.0	1.7	-	4.5	0.9	44.2	2.3	-	47.4	1.4	44.6	0.9	-	46.9	-
Lights	9	0	17	-	26	64	0	38	-	102	16	1020	52	-	1088	32	1029	21	-	1082	2298
% Lights	90.0	-	94.4	-	92.9	97.0	-	95.0	-	96.2	72.7	98.1	98.1	-	97.6	97.0	98.1	100.0	-	98.1	97.7
Buses	0	0	0	-	0	2	0	2	-	4	1	6	0	-	7	1	5	0	-	6	17
% Buses	0.0	-	0.0	-	0.0	3.0	-	5.0	-	3.8	4.5	0.6	0.0	-	0.6	3.0	0.5	0.0	-	0.5	0.7
Trucks	1	0	1	-	2	0	0	0	-	0	5	12	0	-	17	0	13	0	-	13	32
% Trucks	10.0	-	5.6	-	7.1	0.0	-	0.0	-	0.0	22.7	1.2	0.0	-	1.5	0.0	1.2	0.0	-	1.2	1.4
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	2	1	-	3	0	2	0	-	2	5
% Bicycles on Road	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.2	1.9	-	0.3	0.0	0.2	0.0	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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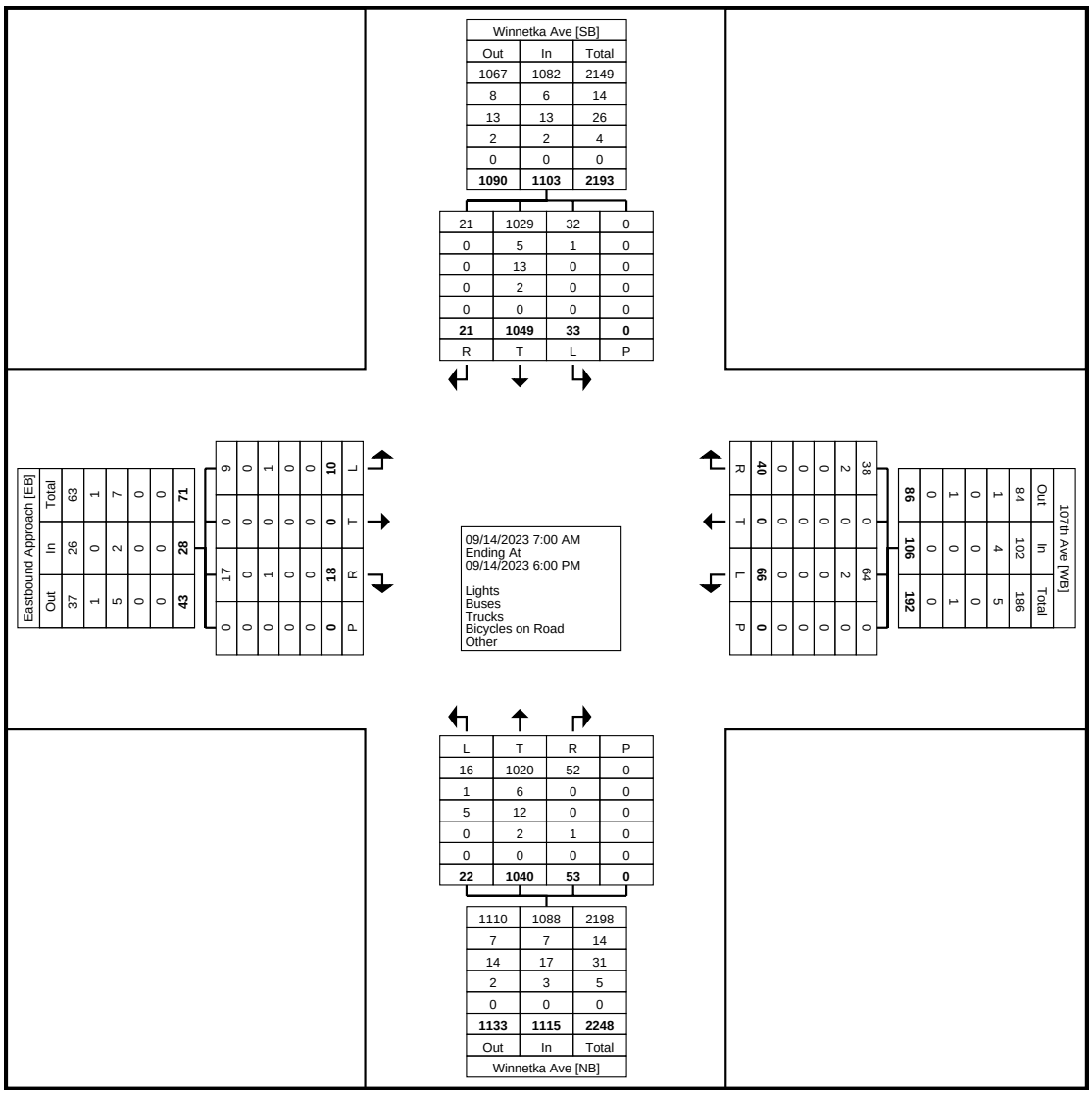
Count Name: 107th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

Count Name: 107th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Eastbound Approach Eastbound					107th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	0	1	0	2	6	0	6	0	12	2	20	1	0	23	0	86	5	0	91	128
7:15 AM	0	0	1	0	1	7	0	2	0	9	1	28	2	0	31	3	95	1	0	99	140
7:30 AM	1	0	1	0	2	4	0	3	0	7	4	26	3	0	33	2	116	3	0	121	163
7:45 AM	0	0	2	0	2	5	0	1	0	6	2	32	1	0	35	0	130	6	0	136	179
Total	2	0	5	0	7	22	0	12	0	34	9	106	7	0	122	5	427	15	0	447	610
Approach %	28.6	0.0	71.4	-	-	64.7	0.0	35.3	-	-	7.4	86.9	5.7	-	-	1.1	95.5	3.4	-	-	-
Total %	0.3	0.0	0.8	-	1.1	3.6	0.0	2.0	-	5.6	1.5	17.4	1.1	-	20.0	0.8	70.0	2.5	-	73.3	-
PHF	0.500	0.000	0.625	-	0.875	0.786	0.000	0.500	-	0.708	0.563	0.828	0.583	-	0.871	0.417	0.821	0.625	-	0.822	0.852
Lights	2	0	5	-	7	21	0	11	-	32	8	103	6	-	117	5	419	15	-	439	595
% Lights	100.0	-	100.0	-	100.0	95.5	-	91.7	-	94.1	88.9	97.2	85.7	-	95.9	100.0	98.1	100.0	-	98.2	97.5
Buses	0	0	0	-	0	1	0	1	-	2	0	0	0	-	0	0	2	0	-	2	4
% Buses	0.0	-	0.0	-	0.0	4.5	-	8.3	-	5.9	0.0	0.0	0.0	-	0.0	0.0	0.5	0.0	-	0.4	0.7
Trucks	0	0	0	-	0	0	0	0	-	0	1	3	0	-	4	0	6	0	-	6	10
% Trucks	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	11.1	2.8	0.0	-	3.3	0.0	1.4	0.0	-	1.3	1.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	14.3	-	0.8	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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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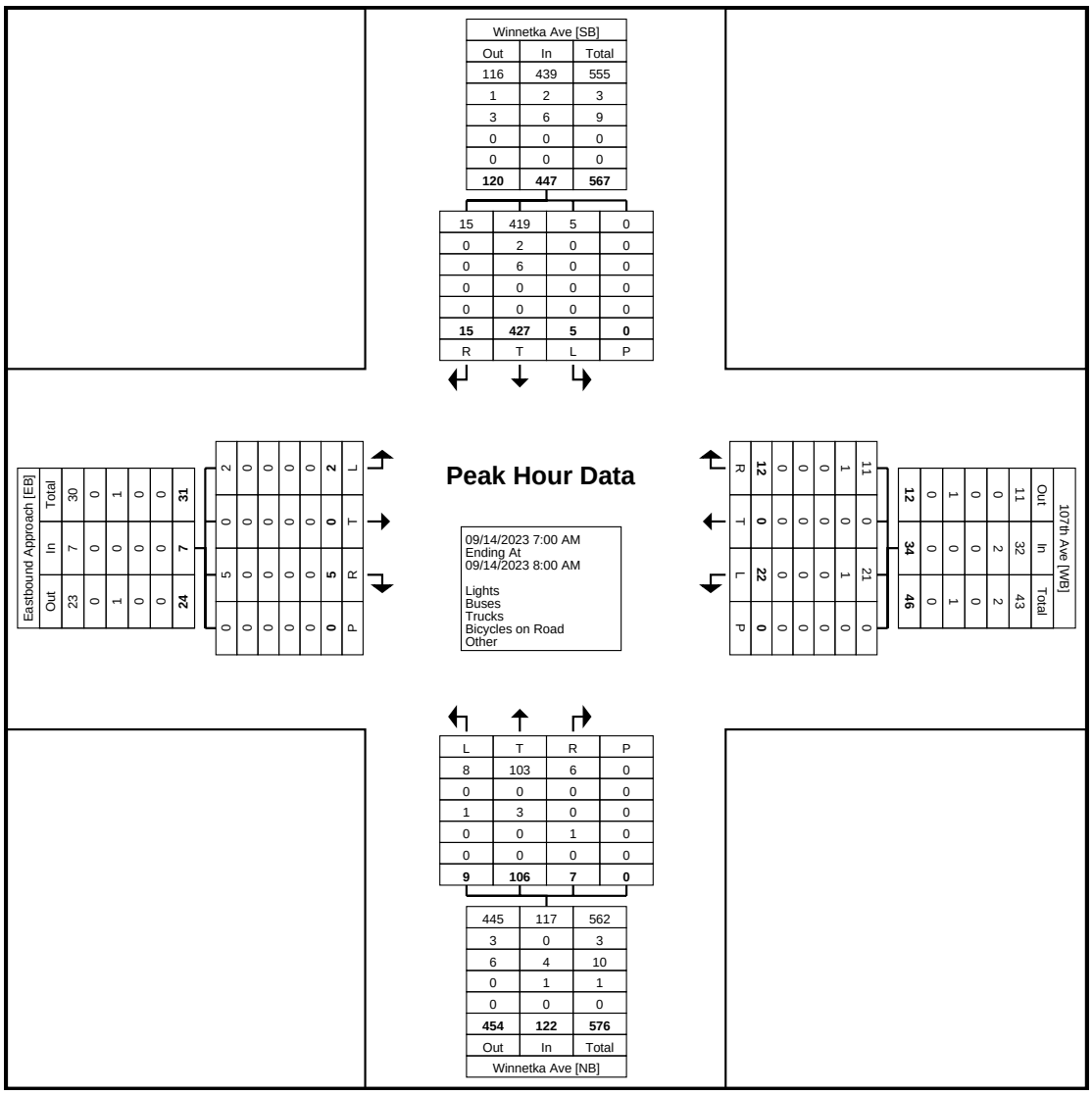

Turning Movement Peak Hour Data Plot (7:00 AM)

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Count Name: 107th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

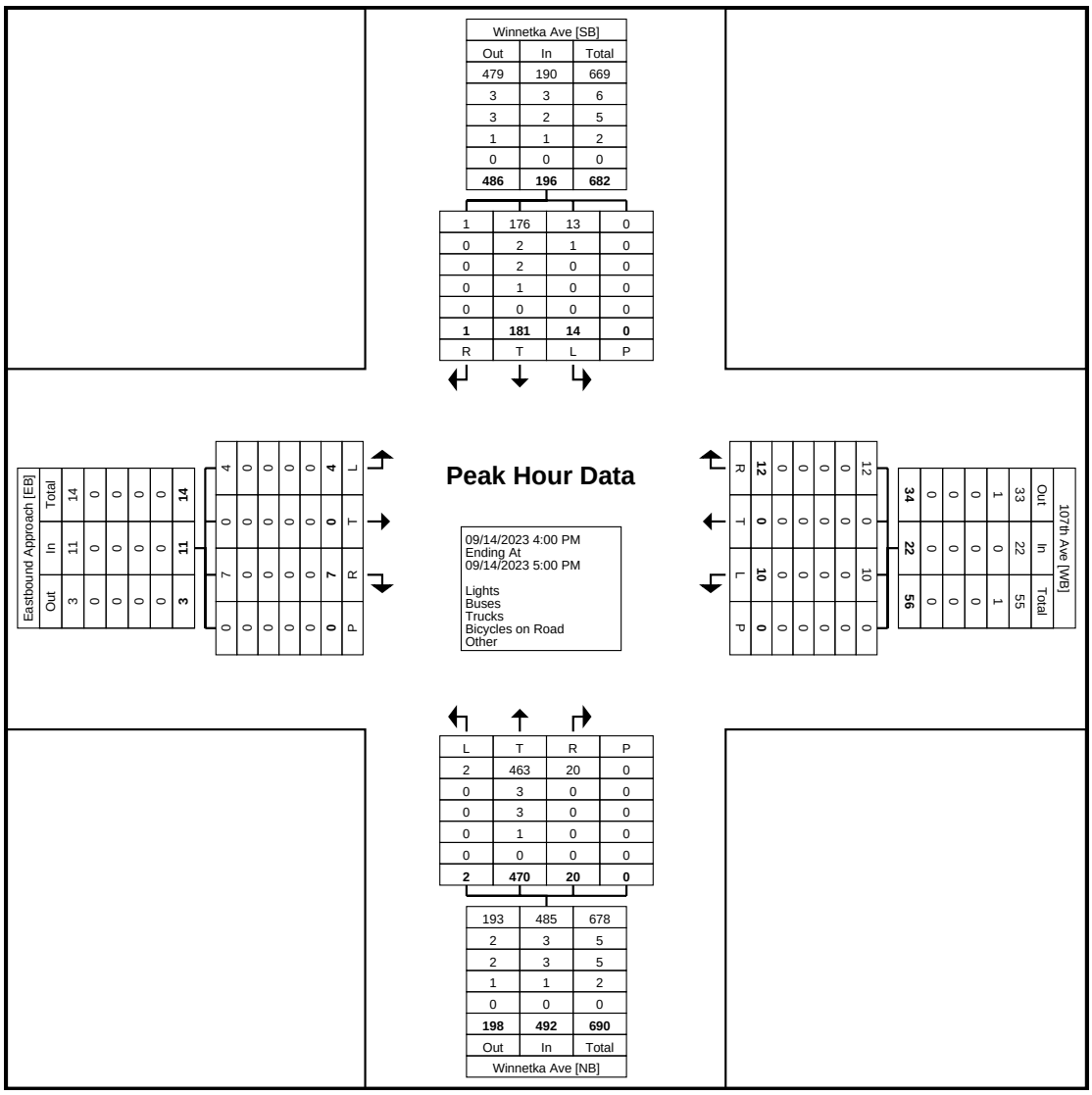
Turning Movement Peak Hour Data (4:00 PM)

Start Time	Eastbound Approach Eastbound					107th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	3	0	2	0	5	2	0	7	0	9	0	120	11	0	131	4	38	0	0	42	187
4:15 PM	0	0	3	0	3	4	0	0	0	4	0	113	2	0	115	6	50	0	0	56	178
4:30 PM	1	0	1	0	2	1	0	1	0	2	1	122	4	0	127	2	47	0	0	49	180
4:45 PM	0	0	1	0	1	3	0	4	0	7	1	115	3	0	119	2	46	1	0	49	176
Total	4	0	7	0	11	10	0	12	0	22	2	470	20	0	492	14	181	1	0	196	721
Approach %	36.4	0.0	63.6	-	-	45.5	0.0	54.5	-	-	0.4	95.5	4.1	-	-	7.1	92.3	0.5	-	-	-
Total %	0.6	0.0	1.0	-	1.5	1.4	0.0	1.7	-	3.1	0.3	65.2	2.8	-	68.2	1.9	25.1	0.1	-	27.2	-
PHF	0.333	0.000	0.583	-	0.550	0.625	0.000	0.429	-	0.611	0.500	0.963	0.455	-	0.939	0.583	0.905	0.250	-	0.875	0.964
Lights	4	0	7	-	11	10	0	12	-	22	2	463	20	-	485	13	176	1	-	190	708
% Lights	100.0	-	100.0	-	100.0	100.0	-	100.0	-	100.0	100.0	98.5	100.0	-	98.6	92.9	97.2	100.0	-	96.9	98.2
Buses	0	0	0	-	0	0	0	0	-	0	0	3	0	-	3	1	2	0	-	3	6
% Buses	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.6	0.0	-	0.6	7.1	1.1	0.0	-	1.5	0.8
Trucks	0	0	0	-	0	0	0	0	-	0	0	3	0	-	3	0	2	0	-	2	5
% Trucks	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.6	0.0	-	0.6	0.0	1.1	0.0	-	1.0	0.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	2
% Bicycles on Road	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.2	0.0	-	0.2	0.0	0.6	0.0	-	0.5	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 ethan.scowcroft@kimley-horn.com

Count Name: 107th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: 109th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	109th Ave Eastbound					109th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	2	75	12	0	89	12	52	3	0	67	7	12	7	0	26	28	73	10	1	111	293
7:15 AM	5	139	14	0	158	16	55	13	0	84	7	14	8	0	29	53	70	10	0	133	404
7:30 AM	0	68	23	0	91	16	69	16	0	101	5	18	4	0	27	21	85	14	0	120	339
7:45 AM	5	55	29	0	89	27	43	10	0	80	17	18	1	0	36	15	81	14	0	110	315
Hourly Total	12	337	78	0	427	71	219	42	0	332	36	62	20	0	118	117	309	48	1	474	1351
8:00 AM	5	91	15	0	111	11	41	17	0	69	5	10	1	0	16	23	49	14	0	86	282
8:15 AM	4	54	10	0	68	7	68	13	0	88	7	19	4	0	30	17	42	8	1	67	253
8:30 AM	1	38	4	0	43	10	32	9	0	51	5	10	3	0	18	19	40	10	0	69	181
8:45 AM	4	39	16	0	59	6	37	10	0	53	8	9	3	0	20	12	29	9	1	50	182
Hourly Total	14	222	45	0	281	34	178	49	0	261	25	48	11	0	84	71	160	41	2	272	898
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	25	91	11	0	127	4	67	47	0	118	12	95	17	0	124	25	27	4	0	56	425
4:15 PM	25	97	14	0	136	7	53	16	0	76	17	85	17	0	119	25	35	8	0	68	399
4:30 PM	46	114	12	0	172	9	50	35	0	94	16	87	19	0	122	23	28	10	1	61	449
4:45 PM	27	118	15	0	160	9	57	23	0	89	13	78	23	0	114	40	26	16	0	82	445
Hourly Total	123	420	52	0	595	29	227	121	0	377	58	345	76	0	479	113	116	38	1	267	1718
5:00 PM	24	116	15	0	155	5	56	28	0	89	14	70	12	0	96	31	32	5	0	68	408
5:15 PM	19	131	13	0	163	5	57	30	0	92	5	80	20	0	105	27	35	8	3	70	430
5:30 PM	10	116	10	0	136	6	54	31	0	91	11	72	21	0	104	40	45	6	1	91	422
5:45 PM	20	94	10	0	124	10	57	17	0	84	13	64	16	0	93	30	31	6	0	67	368
Hourly Total	73	457	48	0	578	26	224	106	0	356	43	286	69	0	398	128	143	25	4	296	1628
Grand Total	222	1436	223	0	1881	160	848	318	0	1326	162	741	176	0	1079	429	728	152	8	1309	5595
Approach %	11.8	76.3	11.9	-	-	12.1	64.0	24.0	-	-	15.0	68.7	16.3	-	-	32.8	55.6	11.6	-	-	-
Total %	4.0	25.7	4.0	-	33.6	2.9	15.2	5.7	-	23.7	2.9	13.2	3.1	-	19.3	7.7	13.0	2.7	-	23.4	-
Lights	220	1401	210	-	1831	159	821	310	-	1290	150	731	175	-	1056	415	719	148	-	1282	5459
% Lights	99.1	97.6	94.2	-	97.3	99.4	96.8	97.5	-	97.3	92.6	98.7	99.4	-	97.9	96.7	98.8	97.4	-	97.9	97.6
Buses	2	28	5	-	35	0	23	8	-	31	3	5	1	-	9	12	2	2	-	16	91
% Buses	0.9	1.9	2.2	-	1.9	0.0	2.7	2.5	-	2.3	1.9	0.7	0.6	-	0.8	2.8	0.3	1.3	-	1.2	1.6
Trucks	0	7	8	-	15	1	3	0	-	4	9	4	0	-	13	2	5	2	-	9	41
% Trucks	0.0	0.5	3.6	-	0.8	0.6	0.4	0.0	-	0.3	5.6	0.5	0.0	-	1.2	0.5	0.7	1.3	-	0.7	0.7
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	0	1	0	-	1	0	2	0	-	2	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	0.0	0.1	0.0	-	0.1	0.0	0.3	0.0	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	8	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

Kimley-Horn and Associates, Inc.
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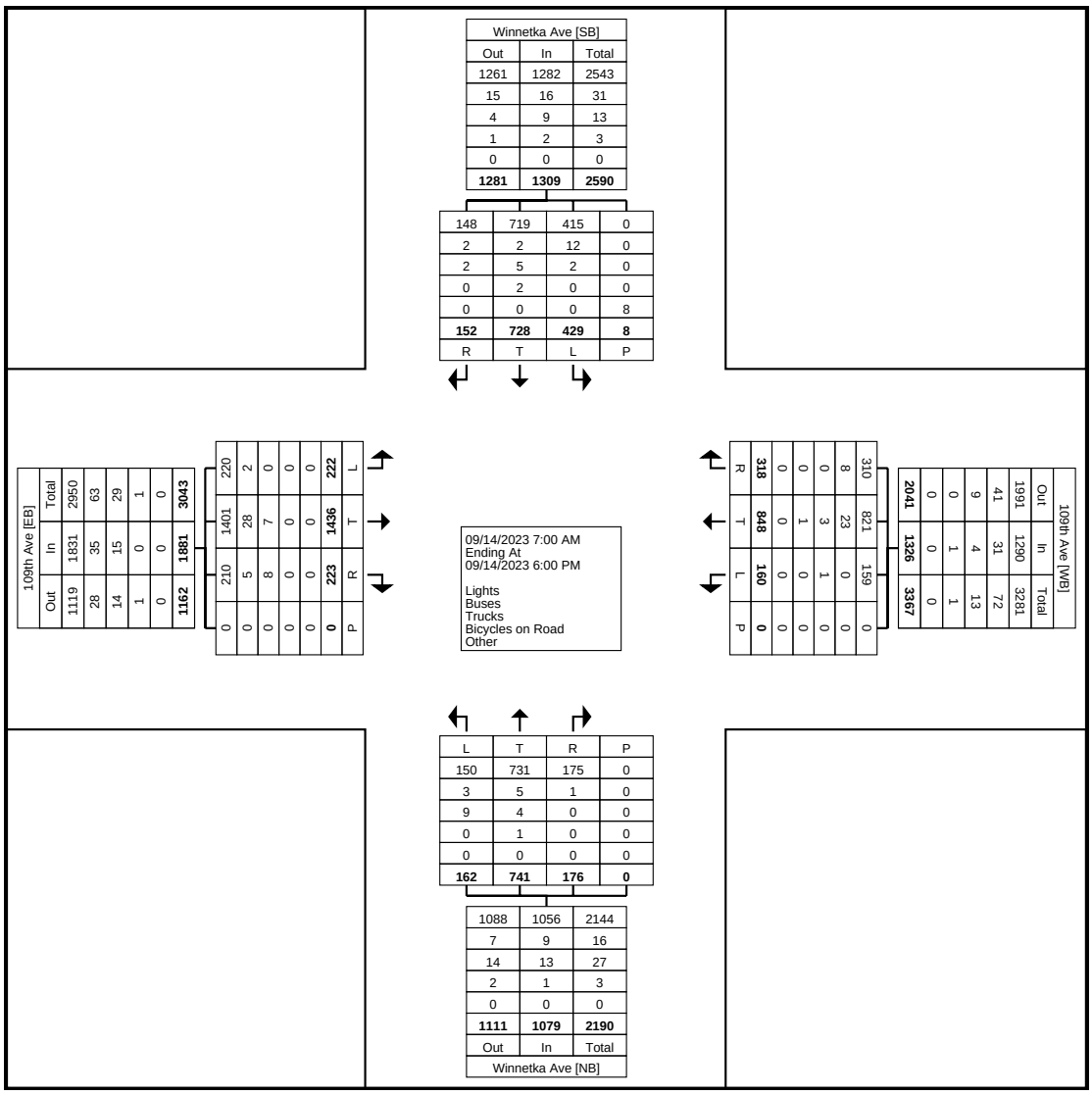
Count Name: 109th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

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

Count Name: 109th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	109th Ave Eastbound					109th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	2	75	12	0	89	12	52	3	0	67	7	12	7	0	26	28	73	10	1	111	293
7:15 AM	5	139	14	0	158	16	55	13	0	84	7	14	8	0	29	53	70	10	0	133	404
7:30 AM	0	68	23	0	91	16	69	16	0	101	5	18	4	0	27	21	85	14	0	120	339
7:45 AM	5	55	29	0	89	27	43	10	0	80	17	18	1	0	36	15	81	14	0	110	315
Total	12	337	78	0	427	71	219	42	0	332	36	62	20	0	118	117	309	48	1	474	1351
Approach %	2.8	78.9	18.3	-	-	21.4	66.0	12.7	-	-	30.5	52.5	16.9	-	-	24.7	65.2	10.1	-	-	-
Total %	0.9	24.9	5.8	-	31.6	5.3	16.2	3.1	-	24.6	2.7	4.6	1.5	-	8.7	8.7	22.9	3.6	-	35.1	-
PHF	0.600	0.606	0.672	-	0.676	0.657	0.793	0.656	-	0.822	0.529	0.861	0.625	-	0.819	0.552	0.909	0.857	-	0.891	0.836
Lights	12	328	73	-	413	70	213	39	-	322	33	61	20	-	114	113	306	47	-	466	1315
% Lights	100.0	97.3	93.6	-	96.7	98.6	97.3	92.9	-	97.0	91.7	98.4	100.0	-	96.6	96.6	99.0	97.9	-	98.3	97.3
Buses	0	9	2	-	11	0	4	3	-	7	0	1	0	-	1	3	1	0	-	4	23
% Buses	0.0	2.7	2.6	-	2.6	0.0	1.8	7.1	-	2.1	0.0	1.6	0.0	-	0.8	2.6	0.3	0.0	-	0.8	1.7
Trucks	0	0	3	-	3	1	2	0	-	3	3	0	0	-	3	1	2	1	-	4	13
% Trucks	0.0	0.0	3.8	-	0.7	1.4	0.9	0.0	-	0.9	8.3	0.0	0.0	-	2.5	0.9	0.6	2.1	-	0.8	1.0
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

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

Warrenville, Illinois, United States 60555
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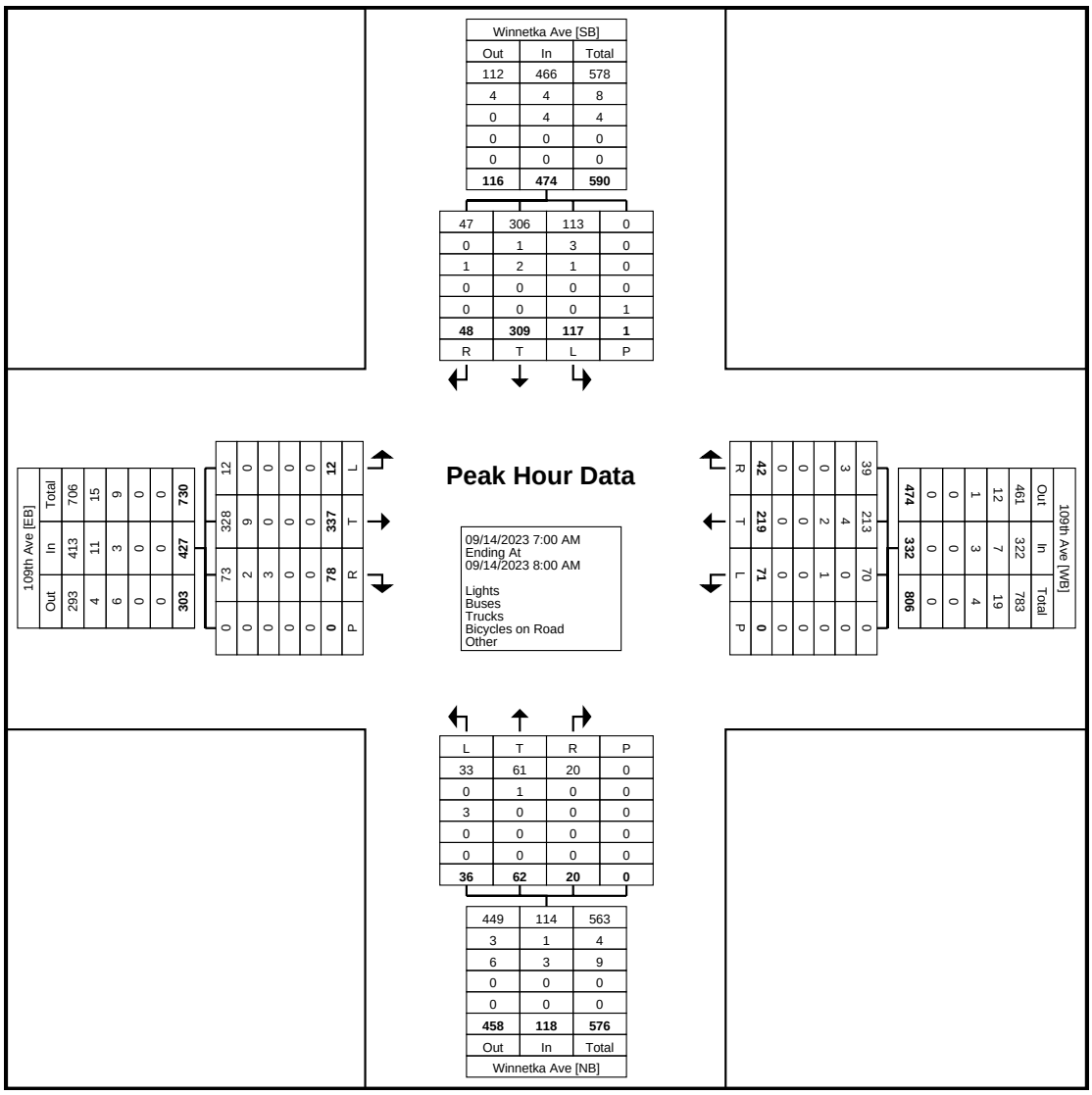
Count Name: 109th Avenue
North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

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

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

Count Name: 109th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	109th Ave Eastbound					109th Ave Westbound					Winnetka Ave Northbound					Winnetka Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	46	114	12	0	172	9	50	35	0	94	16	87	19	0	122	23	28	10	1	61	449
4:45 PM	27	118	15	0	160	9	57	23	0	89	13	78	23	0	114	40	26	16	0	82	445
5:00 PM	24	116	15	0	155	5	56	28	0	89	14	70	12	0	96	31	32	5	0	68	408
5:15 PM	19	131	13	0	163	5	57	30	0	92	5	80	20	0	105	27	35	8	3	70	430
Total	116	479	55	0	650	28	220	116	0	364	48	315	74	0	437	121	121	39	4	281	1732
Approach %	17.8	73.7	8.5	-	-	7.7	60.4	31.9	-	-	11.0	72.1	16.9	-	-	43.1	43.1	13.9	-	-	-
Total %	6.7	27.7	3.2	-	37.5	1.6	12.7	6.7	-	21.0	2.8	18.2	4.3	-	25.2	7.0	7.0	2.3	-	16.2	-
PHF	0.630	0.914	0.917	-	0.945	0.778	0.965	0.829	-	0.968	0.750	0.905	0.804	-	0.895	0.756	0.864	0.609	-	0.857	0.964
Lights	115	475	52	-	642	28	217	114	-	359	46	311	74	-	431	120	121	37	-	278	1710
% Lights	99.1	99.2	94.5	-	98.8	100.0	98.6	98.3	-	98.6	95.8	98.7	100.0	-	98.6	99.2	100.0	94.9	-	98.9	98.7
Buses	1	2	2	-	5	0	3	2	-	5	0	3	0	-	3	1	0	2	-	3	16
% Buses	0.9	0.4	3.6	-	0.8	0.0	1.4	1.7	-	1.4	0.0	1.0	0.0	-	0.7	0.8	0.0	5.1	-	1.1	0.9
Trucks	0	2	1	-	3	0	0	0	-	0	2	1	0	-	3	0	0	0	-	0	6
% Trucks	0.0	0.4	1.8	-	0.5	0.0	0.0	0.0	-	0.0	4.2	0.3	0.0	-	0.7	0.0	0.0	0.0	-	0.0	0.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-

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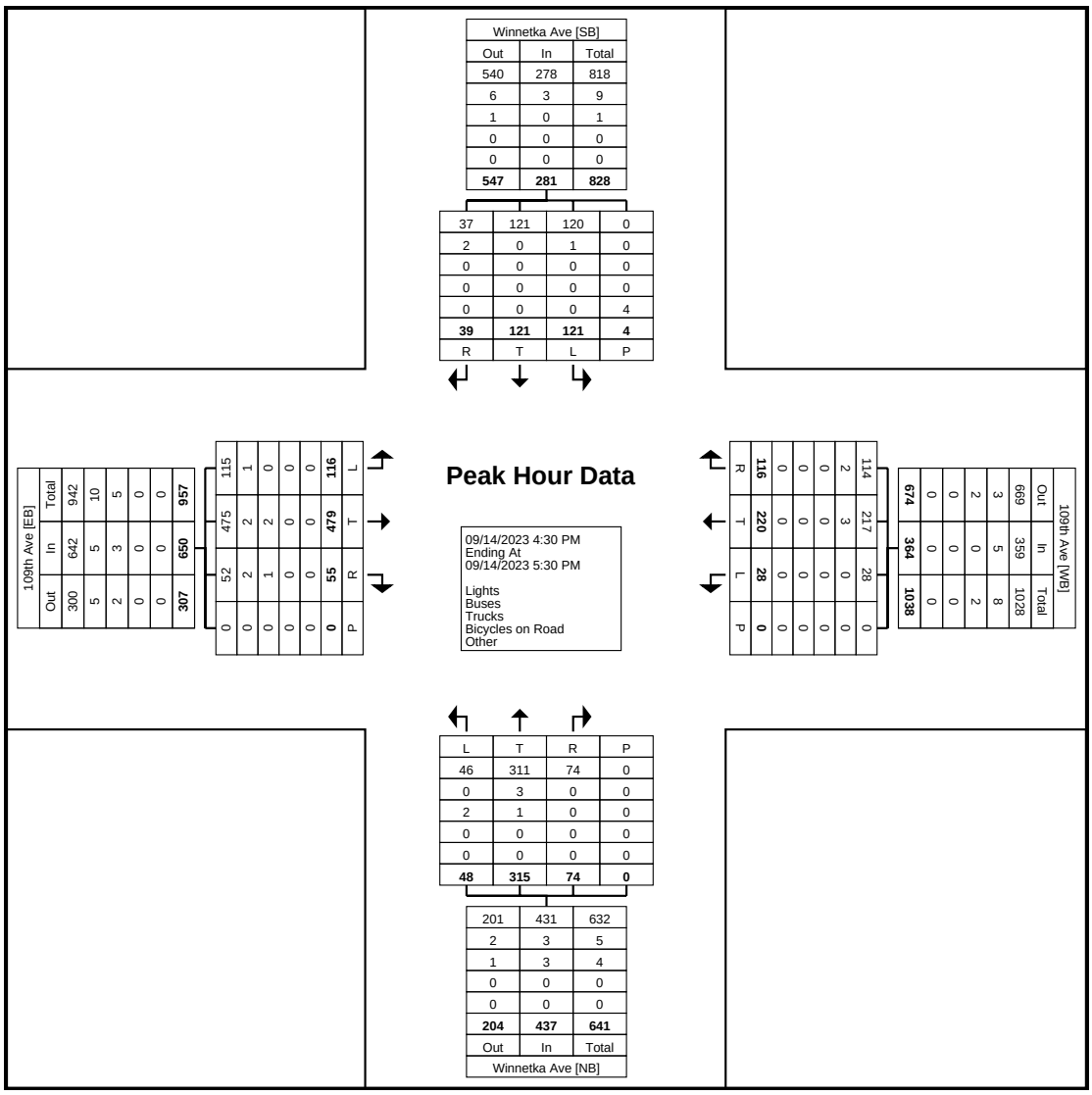
Count Name: 109th Avenue North & Winnetka Avenue North
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: 109th Avenue North & Xylon Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	109th Ave Eastbound					109th Ave Westbound					Northbound Approach Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	92	10	0	103	3	64	0	0	67	2	0	1	0	3	0	0	2	0	2	175
7:15 AM	0	169	4	0	173	4	70	1	0	75	3	0	2	0	5	3	1	1	0	5	258
7:30 AM	1	65	11	0	77	1	83	4	0	88	2	0	1	0	3	0	0	7	0	7	175
7:45 AM	0	93	9	0	102	5	67	2	0	74	3	0	1	0	4	1	2	1	0	4	184
Hourly Total	2	419	34	0	455	13	284	7	0	304	10	0	5	0	15	4	3	11	0	18	792
8:00 AM	3	101	6	0	110	2	56	2	0	60	5	0	2	0	7	2	1	0	0	3	180
8:15 AM	1	68	6	0	75	1	82	1	0	84	5	0	0	0	5	0	0	7	1	7	171
8:30 AM	0	43	6	1	49	0	45	2	0	47	0	0	1	0	1	1	0	4	0	5	102
8:45 AM	3	56	4	0	63	0	54	1	0	55	5	0	1	0	6	0	0	3	1	3	127
Hourly Total	7	268	22	1	297	3	237	6	0	246	15	0	4	0	19	3	1	14	2	18	580
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	119	3	0	126	0	81	5	0	86	2	0	5	0	7	1	0	0	0	1	220
4:15 PM	6	127	4	0	137	0	81	4	0	85	3	1	10	0	14	1	0	7	0	8	244
4:30 PM	7	162	2	0	171	0	71	4	0	75	8	3	17	0	28	1	0	2	0	3	277
4:45 PM	7	152	1	0	160	0	84	3	0	87	1	2	4	0	7	3	0	5	0	8	262
Hourly Total	24	560	10	0	594	0	317	16	0	333	14	6	36	0	56	6	0	14	0	20	1003
5:00 PM	5	143	1	0	149	0	72	3	0	75	4	3	4	0	11	0	0	1	0	1	236
5:15 PM	3	150	3	1	156	0	70	2	0	72	1	1	3	0	5	6	0	3	4	9	242
5:30 PM	4	133	4	0	141	0	72	0	0	72	6	1	1	0	8	1	0	2	1	3	224
5:45 PM	6	117	5	0	128	1	75	1	0	77	9	0	2	0	11	2	0	3	0	5	221
Hourly Total	18	543	13	1	574	1	289	6	0	296	20	5	10	0	35	9	0	9	5	18	923
Grand Total	51	1790	79	2	1920	17	1127	35	0	1179	59	11	55	0	125	22	4	48	7	74	3298
Approach %	2.7	93.2	4.1	-	-	1.4	95.6	3.0	-	-	47.2	8.8	44.0	-	-	29.7	5.4	64.9	-	-	-
Total %	1.5	54.3	2.4	-	58.2	0.5	34.2	1.1	-	35.7	1.8	0.3	1.7	-	3.8	0.7	0.1	1.5	-	2.2	-
Lights	50	1744	61	-	1855	13	1090	32	-	1135	39	9	52	-	100	22	4	47	-	73	3163
% Lights	98.0	97.4	77.2	-	96.6	76.5	96.7	91.4	-	96.3	66.1	81.8	94.5	-	80.0	100.0	100.0	97.9	-	98.6	95.9
Buses	0	31	1	-	32	0	27	2	-	29	1	0	0	-	1	0	0	1	-	1	63
% Buses	0.0	1.7	1.3	-	1.7	0.0	2.4	5.7	-	2.5	1.7	0.0	0.0	-	0.8	0.0	0.0	2.1	-	1.4	1.9
Trucks	1	15	17	-	33	4	9	1	-	14	18	0	3	-	21	0	0	0	-	0	68
% Trucks	2.0	0.8	21.5	-	1.7	23.5	0.8	2.9	-	1.2	30.5	0.0	5.5	-	16.8	0.0	0.0	0.0	-	0.0	2.1
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	1	2	0	-	3	0	0	0	-	0	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	1.7	18.2	0.0	-	2.4	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	6	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.7	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.3	-	-

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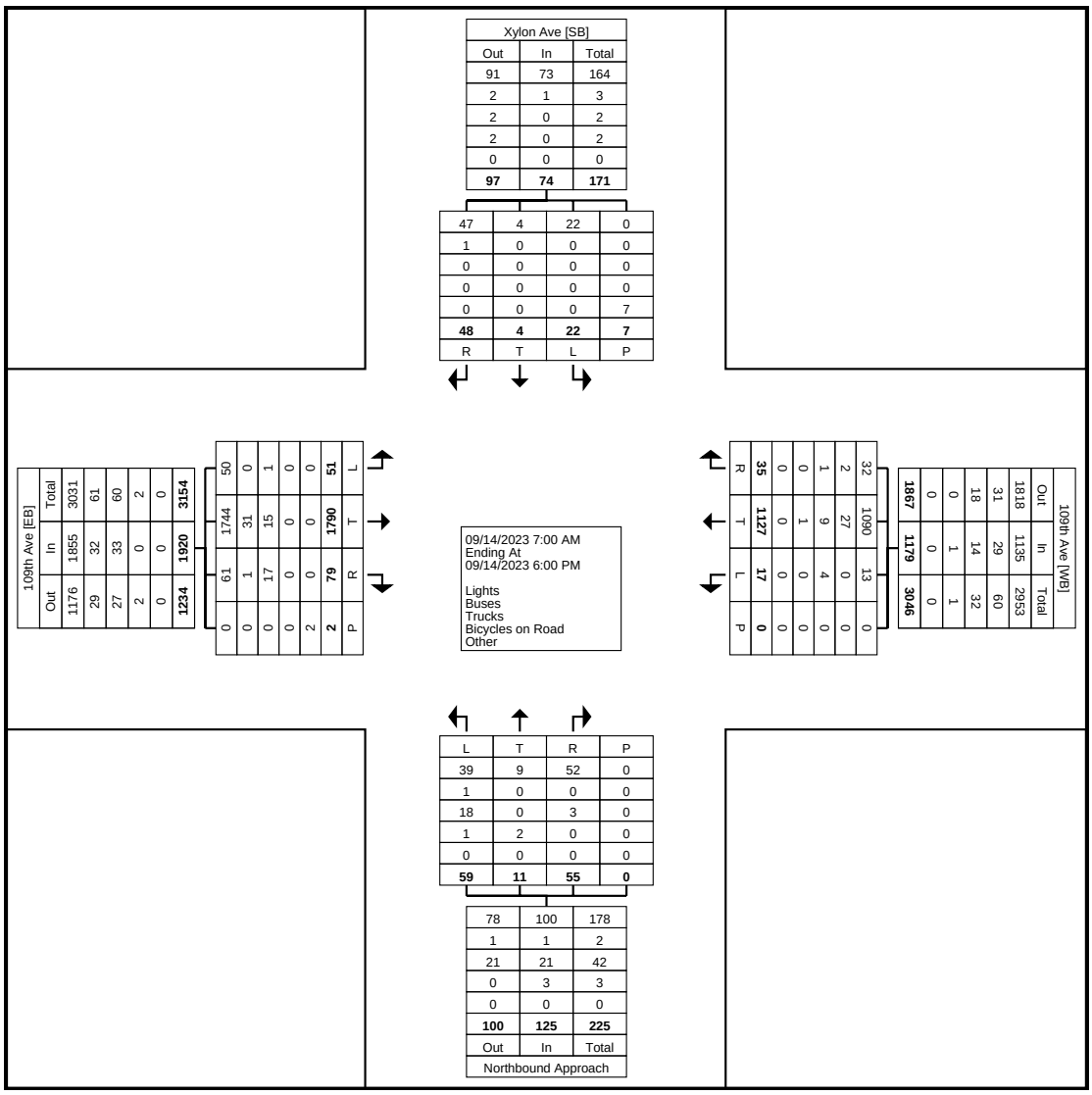
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

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

Count Name: 109th Avenue North & Xylon Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	109th Ave Eastbound					109th Ave Westbound					Northbound Approach Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	0	169	4	0	173	4	70	1	0	75	3	0	2	0	5	3	1	1	0	5	258
7:30 AM	1	65	11	0	77	1	83	4	0	88	2	0	1	0	3	0	0	7	0	7	175
7:45 AM	0	93	9	0	102	5	67	2	0	74	3	0	1	0	4	1	2	1	0	4	184
8:00 AM	3	101	6	0	110	2	56	2	0	60	5	0	2	0	7	2	1	0	0	3	180
Total	4	428	30	0	462	12	276	9	0	297	13	0	6	0	19	6	4	9	0	19	797
Approach %	0.9	92.6	6.5	-	-	4.0	92.9	3.0	-	-	68.4	0.0	31.6	-	-	31.6	21.1	47.4	-	-	-
Total %	0.5	53.7	3.8	-	58.0	1.5	34.6	1.1	-	37.3	1.6	0.0	0.8	-	2.4	0.8	0.5	1.1	-	2.4	-
PHF	0.333	0.633	0.682	-	0.668	0.600	0.831	0.563	-	0.844	0.650	0.000	0.750	-	0.679	0.500	0.500	0.321	-	0.679	0.772
Lights	4	409	24	-	437	10	267	9	-	286	4	0	4	-	8	6	4	9	-	19	750
% Lights	100.0	95.6	80.0	-	94.6	83.3	96.7	100.0	-	96.3	30.8	-	66.7	-	42.1	100.0	100.0	100.0	-	100.0	94.1
Buses	0	14	0	-	14	0	5	0	-	5	0	0	0	-	0	0	0	0	-	0	19
% Buses	0.0	3.3	0.0	-	3.0	0.0	1.8	0.0	-	1.7	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	2.4
Trucks	0	5	6	-	11	2	4	0	-	6	9	0	2	-	11	0	0	0	-	0	28
% Trucks	0.0	1.2	20.0	-	2.4	16.7	1.4	0.0	-	2.0	69.2	-	33.3	-	57.9	0.0	0.0	0.0	-	0.0	3.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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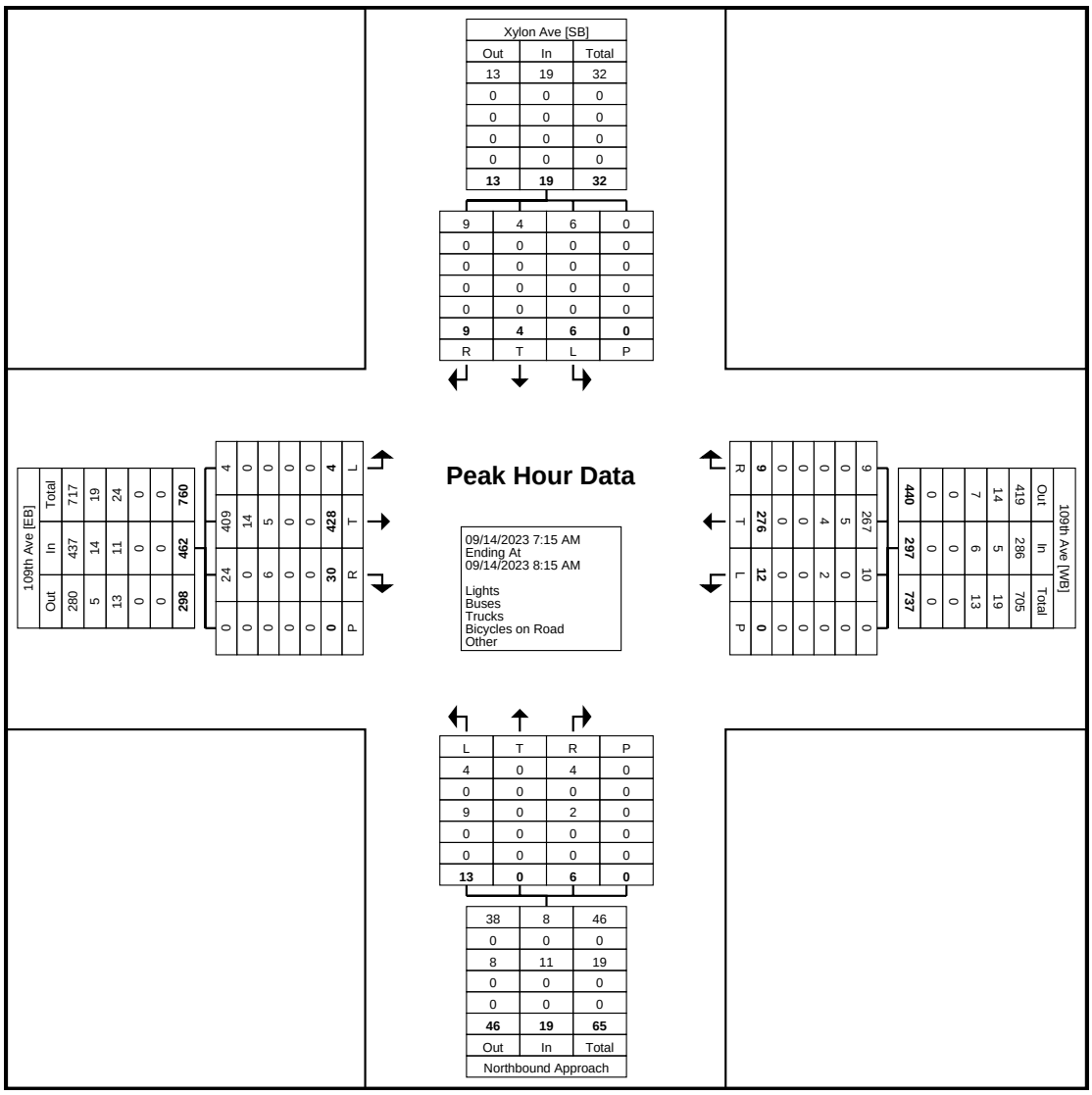
Count Name: 109th Avenue North & Xylon Avenue North
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

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Warrenville, Illinois, United States 60555
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Count Name: 109th Avenue North & Xylon Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	109th Ave Eastbound					109th Ave Westbound					Northbound Approach Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	6	127	4	0	137	0	81	4	0	85	3	1	10	0	14	1	0	7	0	8	244
4:30 PM	7	162	2	0	171	0	71	4	0	75	8	3	17	0	28	1	0	2	0	3	277
4:45 PM	7	152	1	0	160	0	84	3	0	87	1	2	4	0	7	3	0	5	0	8	262
5:00 PM	5	143	1	0	149	0	72	3	0	75	4	3	4	0	11	0	0	1	0	1	236
Total	25	584	8	0	617	0	308	14	0	322	16	9	35	0	60	5	0	15	0	20	1019
Approach %	4.1	94.7	1.3	-	-	0.0	95.7	4.3	-	-	26.7	15.0	58.3	-	-	25.0	0.0	75.0	-	-	-
Total %	2.5	57.3	0.8	-	60.5	0.0	30.2	1.4	-	31.6	1.6	0.9	3.4	-	5.9	0.5	0.0	1.5	-	2.0	-
PHF	0.893	0.901	0.500	-	0.902	0.000	0.917	0.875	-	0.925	0.500	0.750	0.515	-	0.536	0.417	0.000	0.536	-	0.625	0.920
Lights	24	574	7	-	605	0	297	13	-	310	14	7	35	-	56	5	0	14	-	19	990
% Lights	96.0	98.3	87.5	-	98.1	-	96.4	92.9	-	96.3	87.5	77.8	100.0	-	93.3	100.0	-	93.3	-	95.0	97.2
Buses	0	5	0	-	5	0	8	0	-	8	0	0	0	-	0	0	0	1	-	1	14
% Buses	0.0	0.9	0.0	-	0.8	-	2.6	0.0	-	2.5	0.0	0.0	0.0	-	0.0	0.0	-	6.7	-	5.0	1.4
Trucks	1	5	1	-	7	0	3	1	-	4	1	0	0	-	1	0	0	0	-	0	12
% Trucks	4.0	0.9	12.5	-	1.1	-	1.0	7.1	-	1.2	6.3	0.0	0.0	-	1.7	0.0	-	0.0	-	0.0	1.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	2	0	-	3	0	0	0	-	0	3
% Bicycles on Road	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	6.3	22.2	0.0	-	5.0	0.0	-	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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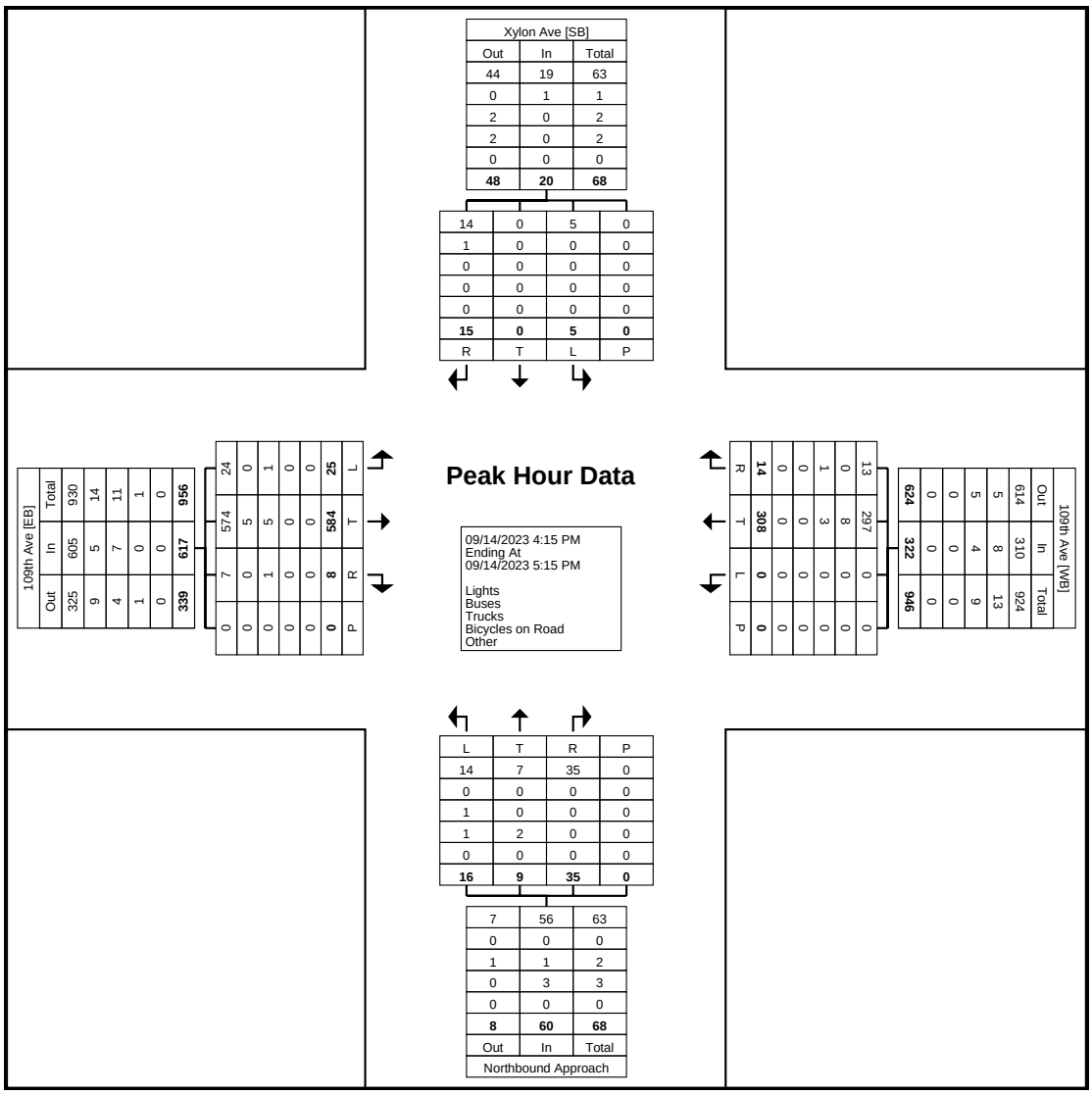
Start Date: 09/14/2023



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

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

Count Name: U.S. 169 & 109th Avenue North
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	109th Ave Eastbound					109th Ave Westbound					US 169 Northbound					US 169 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	6	26	46	0	78	35	11	18	0	64	12	214	7	0	233	65	544	36	0	645	1020
7:15 AM	11	66	61	0	138	46	12	17	0	75	16	247	2	0	265	70	553	19	0	642	1120
7:30 AM	13	19	31	0	63	51	17	29	0	97	15	294	1	0	310	61	604	20	0	685	1155
7:45 AM	12	32	30	0	74	50	15	15	0	80	26	263	4	0	293	33	452	32	1	517	964
Hourly Total	42	143	168	0	353	182	55	79	0	316	69	1018	14	0	1101	229	2153	107	1	2489	4259
8:00 AM	10	19	36	0	65	25	10	15	0	50	22	265	46	0	333	62	504	25	0	591	1039
8:15 AM	16	18	38	0	72	53	15	32	0	100	16	249	31	0	296	31	458	16	1	505	973
8:30 AM	16	5	37	0	58	31	8	14	0	53	18	226	28	0	272	34	449	16	0	499	882
8:45 AM	16	12	44	0	72	31	9	18	0	58	22	280	31	0	333	33	359	24	1	416	879
Hourly Total	58	54	155	0	267	140	42	79	0	261	78	1020	136	0	1234	160	1770	81	2	2011	3773
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	32	37	18	0	87	31	29	33	0	93	33	469	2	0	504	27	288	21	0	336	1020
4:15 PM	18	33	34	0	85	41	30	32	0	103	33	435	1	0	469	31	297	16	1	344	1001
4:30 PM	19	40	27	0	86	41	25	39	0	105	33	453	0	0	486	44	286	16	0	346	1023
4:45 PM	29	49	22	0	100	38	31	20	0	89	40	444	0	0	484	44	298	23	0	365	1038
Hourly Total	98	159	101	0	358	151	115	124	0	390	139	1801	3	0	1943	146	1169	76	1	1391	4082
5:00 PM	19	29	36	0	84	42	35	34	0	111	37	436	1	0	474	45	358	18	0	421	1090
5:15 PM	12	39	25	0	76	32	29	18	0	79	34	428	4	0	466	53	303	15	3	371	992
5:30 PM	14	30	25	0	69	39	22	22	0	83	42	422	0	0	464	40	314	26	2	380	996
5:45 PM	20	40	32	0	92	29	33	35	0	97	55	419	4	0	478	38	273	22	0	333	1000
Hourly Total	65	138	118	0	321	142	119	109	0	370	168	1705	9	0	1882	176	1248	81	5	1505	4078
Grand Total	263	494	542	0	1299	615	331	391	0	1337	454	5544	162	0	6160	711	6340	345	9	7396	16192
Approach %	20.2	38.0	41.7	-	-	46.0	24.8	29.2	-	-	7.4	90.0	2.6	-	-	9.6	85.7	4.7	-	-	-
Total %	1.6	3.1	3.3	-	8.0	3.8	2.0	2.4	-	8.3	2.8	34.2	1.0	-	38.0	4.4	39.2	2.1	-	45.7	-
Lights	259	473	527	-	1259	590	315	376	-	1281	435	5353	152	-	5940	688	6159	336	-	7183	15663
% Lights	98.5	95.7	97.2	-	96.9	95.9	95.2	96.2	-	95.8	95.8	96.6	93.8	-	96.4	96.8	97.1	97.4	-	97.1	96.7
Buses	1	12	3	-	16	3	13	8	-	24	1	35	0	-	36	20	30	2	-	52	128
% Buses	0.4	2.4	0.6	-	1.2	0.5	3.9	2.0	-	1.8	0.2	0.6	0.0	-	0.6	2.8	0.5	0.6	-	0.7	0.8
Trucks	3	9	12	-	24	22	3	7	-	32	18	155	10	-	183	3	151	5	-	159	398
% Trucks	1.1	1.8	2.2	-	1.8	3.6	0.9	1.8	-	2.4	4.0	2.8	6.2	-	3.0	0.4	2.4	1.4	-	2.1	2.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	0	2	-	2	3
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.6	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	7	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77.8	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22.2	-	-

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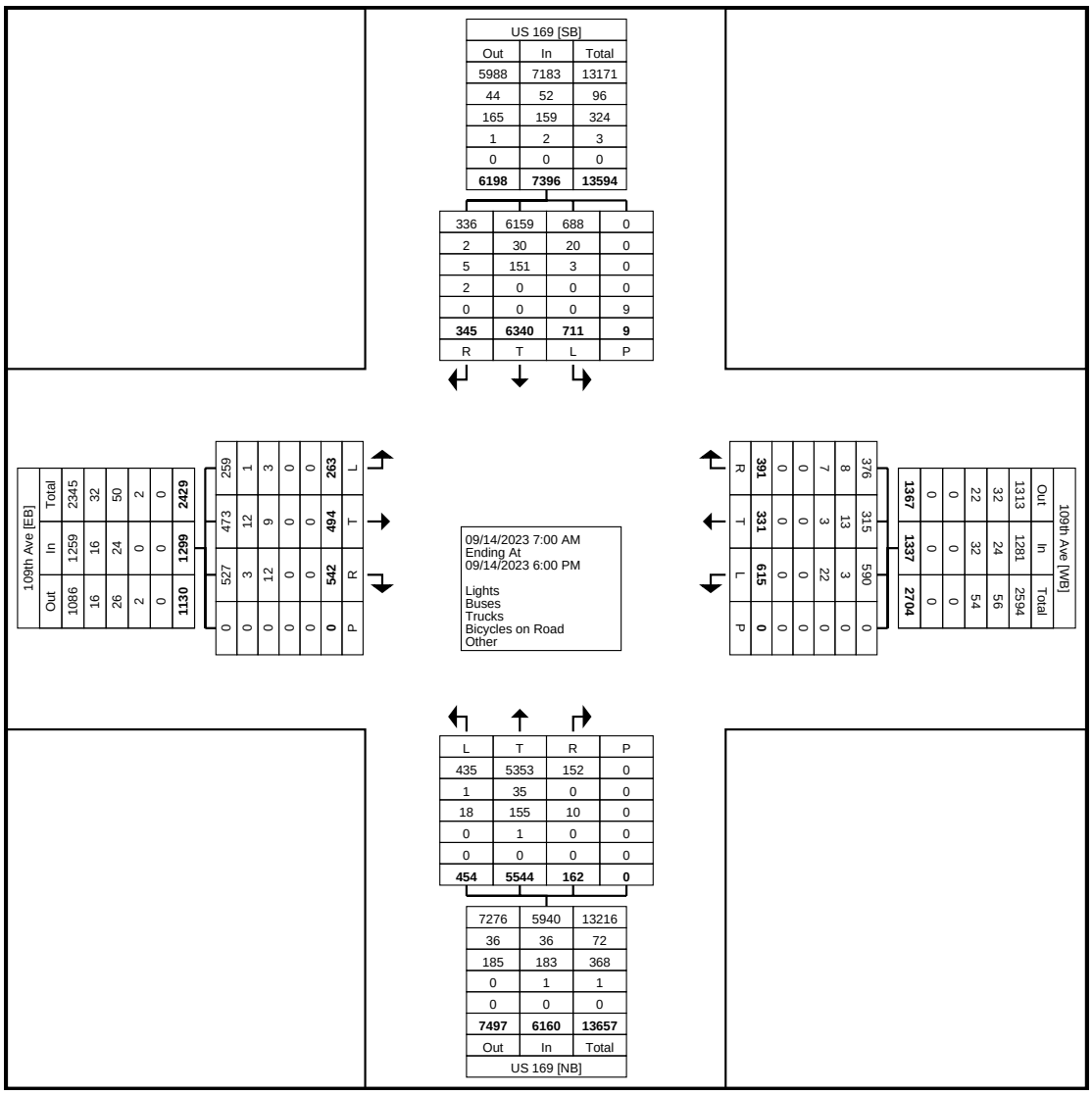

Turning Movement Data Plot

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Turning Movement Peak Hour Data (7:15 AM)

Start Time	109th Ave Eastbound					109th Ave Westbound					US 169 Northbound					US 169 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	11	66	61	0	138	46	12	17	0	75	16	247	2	0	265	70	553	19	0	642	1120
7:30 AM	13	19	31	0	63	51	17	29	0	97	15	294	1	0	310	61	604	20	0	685	1155
7:45 AM	12	32	30	0	74	50	15	15	0	80	26	263	4	0	293	33	452	32	1	517	964
8:00 AM	10	19	36	0	65	25	10	15	0	50	22	265	46	0	333	62	504	25	0	591	1039
Total	46	136	158	0	340	172	54	76	0	302	79	1069	53	0	1201	226	2113	96	1	2435	4278
Approach %	13.5	40.0	46.5	-	-	57.0	17.9	25.2	-	-	6.6	89.0	4.4	-	-	9.3	86.8	3.9	-	-	-
Total %	1.1	3.2	3.7	-	7.9	4.0	1.3	1.8	-	7.1	1.8	25.0	1.2	-	28.1	5.3	49.4	2.2	-	56.9	-
PHF	0.885	0.515	0.648	-	0.616	0.843	0.794	0.655	-	0.778	0.760	0.909	0.288	-	0.902	0.807	0.875	0.750	-	0.889	0.926
Lights	45	132	153	-	330	161	52	70	-	283	70	1011	50	-	1131	214	2055	96	-	2365	4109
% Lights	97.8	97.1	96.8	-	97.1	93.6	96.3	92.1	-	93.7	88.6	94.6	94.3	-	94.2	94.7	97.3	100.0	-	97.1	96.0
Buses	0	3	0	-	3	0	1	3	-	4	0	6	0	-	6	11	6	0	-	17	30
% Buses	0.0	2.2	0.0	-	0.9	0.0	1.9	3.9	-	1.3	0.0	0.6	0.0	-	0.5	4.9	0.3	0.0	-	0.7	0.7
Trucks	1	1	5	-	7	11	1	3	-	15	9	52	3	-	64	1	52	0	-	53	139
% Trucks	2.2	0.7	3.2	-	2.1	6.4	1.9	3.9	-	5.0	11.4	4.9	5.7	-	5.3	0.4	2.5	0.0	-	2.2	3.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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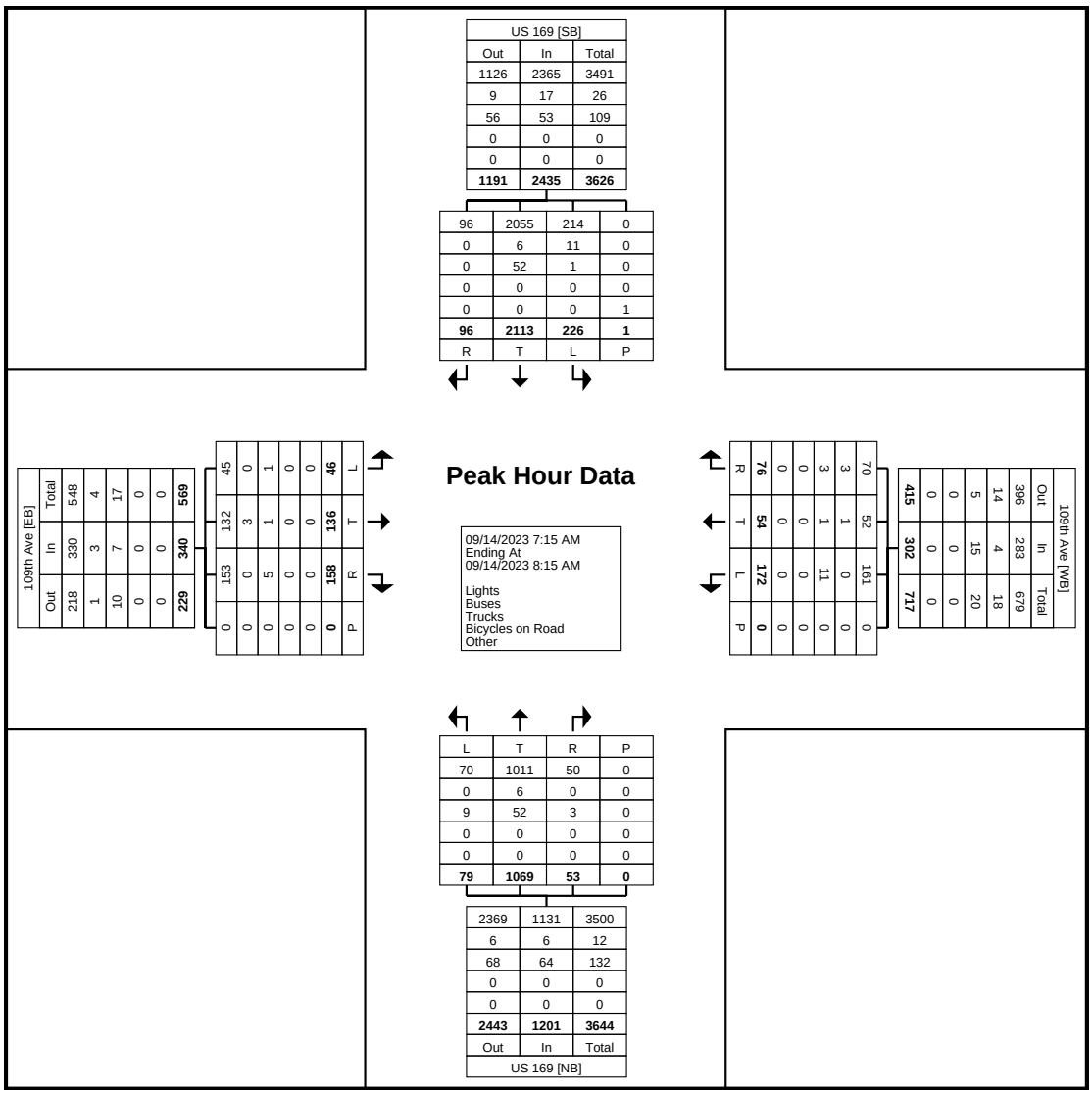

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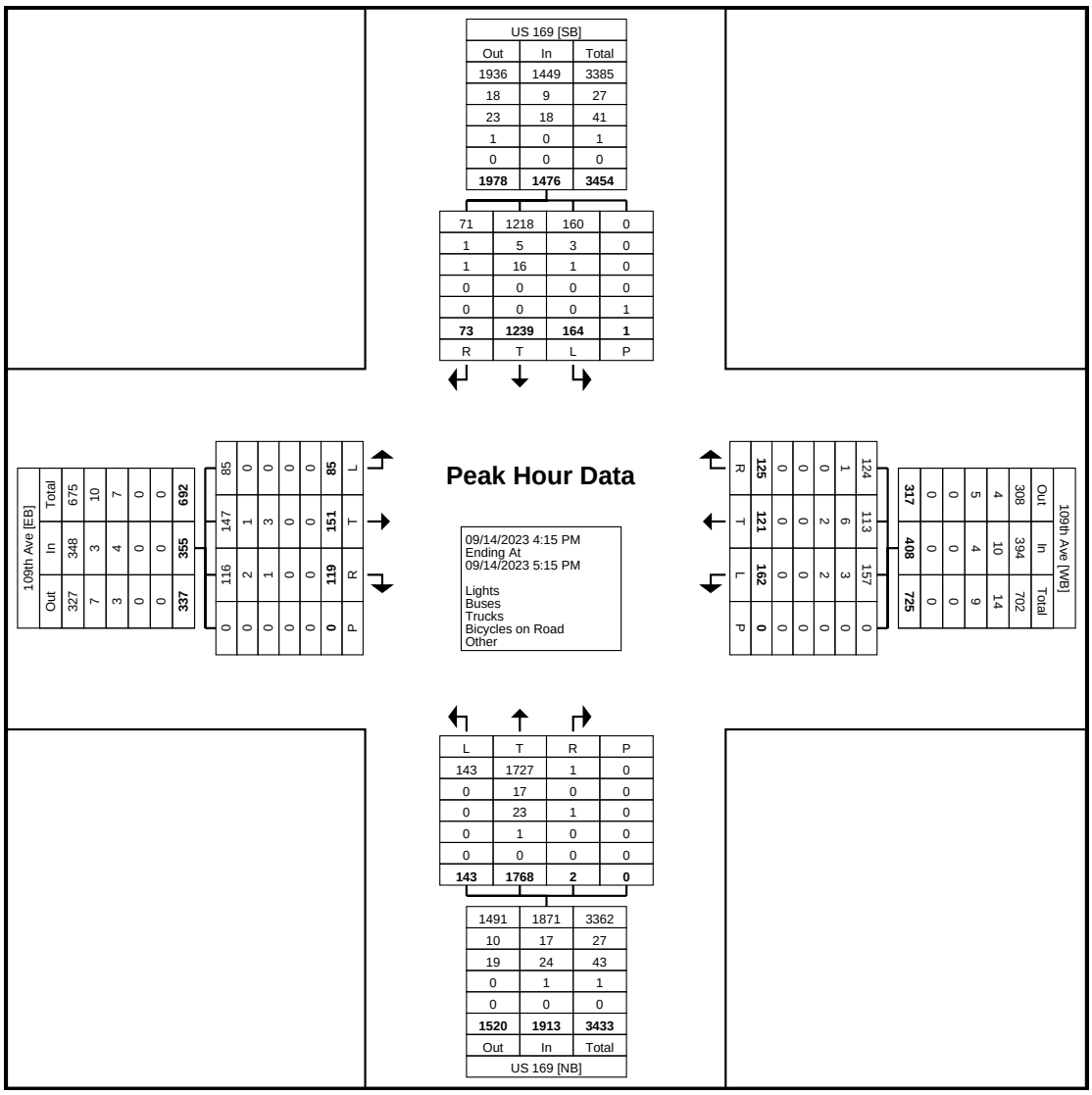
Turning Movement Peak Hour Data (4:15 PM)

Start Time	109th Ave Eastbound					109th Ave Westbound					US 169 Northbound					US 169 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	18	33	34	0	85	41	30	32	0	103	33	435	1	0	469	31	297	16	1	344	1001
4:30 PM	19	40	27	0	86	41	25	39	0	105	33	453	0	0	486	44	286	16	0	346	1023
4:45 PM	29	49	22	0	100	38	31	20	0	89	40	444	0	0	484	44	298	23	0	365	1038
5:00 PM	19	29	36	0	84	42	35	34	0	111	37	436	1	0	474	45	358	18	0	421	1090
Total	85	151	119	0	355	162	121	125	0	408	143	1768	2	0	1913	164	1239	73	1	1476	4152
Approach %	23.9	42.5	33.5	-	-	39.7	29.7	30.6	-	-	7.5	92.4	0.1	-	-	11.1	83.9	4.9	-	-	-
Total %	2.0	3.6	2.9	-	8.6	3.9	2.9	3.0	-	9.8	3.4	42.6	0.0	-	46.1	3.9	29.8	1.8	-	35.5	-
PHF	0.733	0.770	0.826	-	0.888	0.964	0.864	0.801	-	0.919	0.894	0.976	0.500	-	0.984	0.911	0.865	0.793	-	0.876	0.952
Lights	85	147	116	-	348	157	113	124	-	394	143	1727	1	-	1871	160	1218	71	-	1449	4062
% Lights	100.0	97.4	97.5	-	98.0	96.9	93.4	99.2	-	96.6	100.0	97.7	50.0	-	97.8	97.6	98.3	97.3	-	98.2	97.8
Buses	0	1	2	-	3	3	6	1	-	10	0	17	0	-	17	3	5	1	-	9	39
% Buses	0.0	0.7	1.7	-	0.8	1.9	5.0	0.8	-	2.5	0.0	1.0	0.0	-	0.9	1.8	0.4	1.4	-	0.6	0.9
Trucks	0	3	1	-	4	2	2	0	-	4	0	23	1	-	24	1	16	1	-	18	50
% Trucks	0.0	2.0	0.8	-	1.1	1.2	1.7	0.0	-	1.0	0.0	1.3	50.0	-	1.3	0.6	1.3	1.4	-	1.2	1.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.1	0.0	-	0.1	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	-	-

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

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

Count Name: U.S. 169 & 109th Avenue North
Site Code:
Start Date: 09/14/2023



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 ethan.scowcroft@kimley-horn.com

Count Name: Oxbow Creek Dr & Xylon Ave
Site Code:
Start Date: 09/14/2023

Turning Movement Data

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Xylon Ave Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	2	0	0	2	3	2	0	0	5	0	5	8	0	13	2	5	2	0	9	29
7:15 AM	1	0	0	0	1	5	2	2	0	9	3	2	5	0	10	2	3	0	0	5	25
7:30 AM	0	0	0	0	0	4	0	1	0	5	0	4	3	0	7	0	4	2	0	6	18
7:45 AM	0	1	0	0	1	2	4	1	0	7	1	7	5	0	13	2	5	3	0	10	31
Hourly Total	1	3	0	0	4	14	8	4	0	26	4	18	21	0	43	6	17	7	0	30	103
8:00 AM	0	0	1	0	1	3	2	0	0	5	1	1	8	0	10	1	8	2	0	11	27
8:15 AM	0	1	0	0	1	4	4	1	0	9	0	3	2	0	5	0	2	0	1	2	17
8:30 AM	0	0	0	1	0	1	3	2	0	6	0	2	3	0	5	0	3	2	0	5	16
8:45 AM	1	1	0	1	2	3	3	3	0	9	1	1	1	0	3	5	2	1	0	8	22
Hourly Total	1	2	1	2	4	11	12	6	0	29	2	7	14	0	23	6	15	5	1	26	82
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	3	3	0	7	9	4	1	0	14	1	8	8	0	17	2	2	3	0	7	45
4:15 PM	3	7	3	0	13	7	8	1	0	16	0	12	9	0	21	4	5	3	0	12	62
4:30 PM	1	19	7	1	27	5	2	1	0	8	0	23	24	0	47	1	4	0	0	5	87
4:45 PM	0	9	2	0	11	5	8	0	0	13	2	7	7	0	16	0	2	0	0	2	42
Hourly Total	5	38	15	1	58	26	22	3	0	51	3	50	48	0	101	7	13	6	0	26	236
5:00 PM	4	3	1	0	8	3	2	0	0	5	2	6	5	0	13	2	2	1	0	5	31
5:15 PM	0	3	1	0	4	5	2	2	0	9	1	1	9	0	11	2	4	4	0	10	34
5:30 PM	5	6	4	1	15	4	4	0	0	8	0	3	1	0	4	0	4	2	0	6	33
5:45 PM	3	7	6	1	16	4	9	0	0	13	0	4	5	1	9	2	0	5	0	7	45
Hourly Total	12	19	12	2	43	16	17	2	0	35	3	14	20	1	37	6	10	12	0	28	143
Grand Total	19	62	28	5	109	67	59	15	0	141	12	89	103	1	204	25	55	30	1	110	564
Approach %	17.4	56.9	25.7	-	-	47.5	41.8	10.6	-	-	5.9	43.6	50.5	-	-	22.7	50.0	27.3	-	-	-
Total %	3.4	11.0	5.0	-	19.3	11.9	10.5	2.7	-	25.0	2.1	15.8	18.3	-	36.2	4.4	9.8	5.3	-	19.5	-
Lights	18	60	28	-	106	60	57	13	-	130	10	71	94	-	175	18	38	29	-	85	496
% Lights	94.7	96.8	100.0	-	97.2	89.6	96.6	86.7	-	92.2	83.3	79.8	91.3	-	85.8	72.0	69.1	96.7	-	77.3	87.9
Buses	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	1	0	0	-	1	3
% Buses	0.0	0.0	0.0	-	0.0	1.5	0.0	0.0	-	0.7	0.0	1.1	0.0	-	0.5	4.0	0.0	0.0	-	0.9	0.5
Trucks	1	2	0	-	3	5	2	2	-	9	2	15	9	-	26	6	16	1	-	23	61
% Trucks	5.3	3.2	0.0	-	2.8	7.5	3.4	13.3	-	6.4	16.7	16.9	8.7	-	12.7	24.0	29.1	3.3	-	20.9	10.8
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	2	0	-	2	0	1	0	-	1	4
% Bicycles on Road	0.0	0.0	0.0	-	0.0	1.5	0.0	0.0	-	0.7	0.0	2.2	0.0	-	1.0	0.0	1.8	0.0	-	0.9	0.7
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	20.0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	80.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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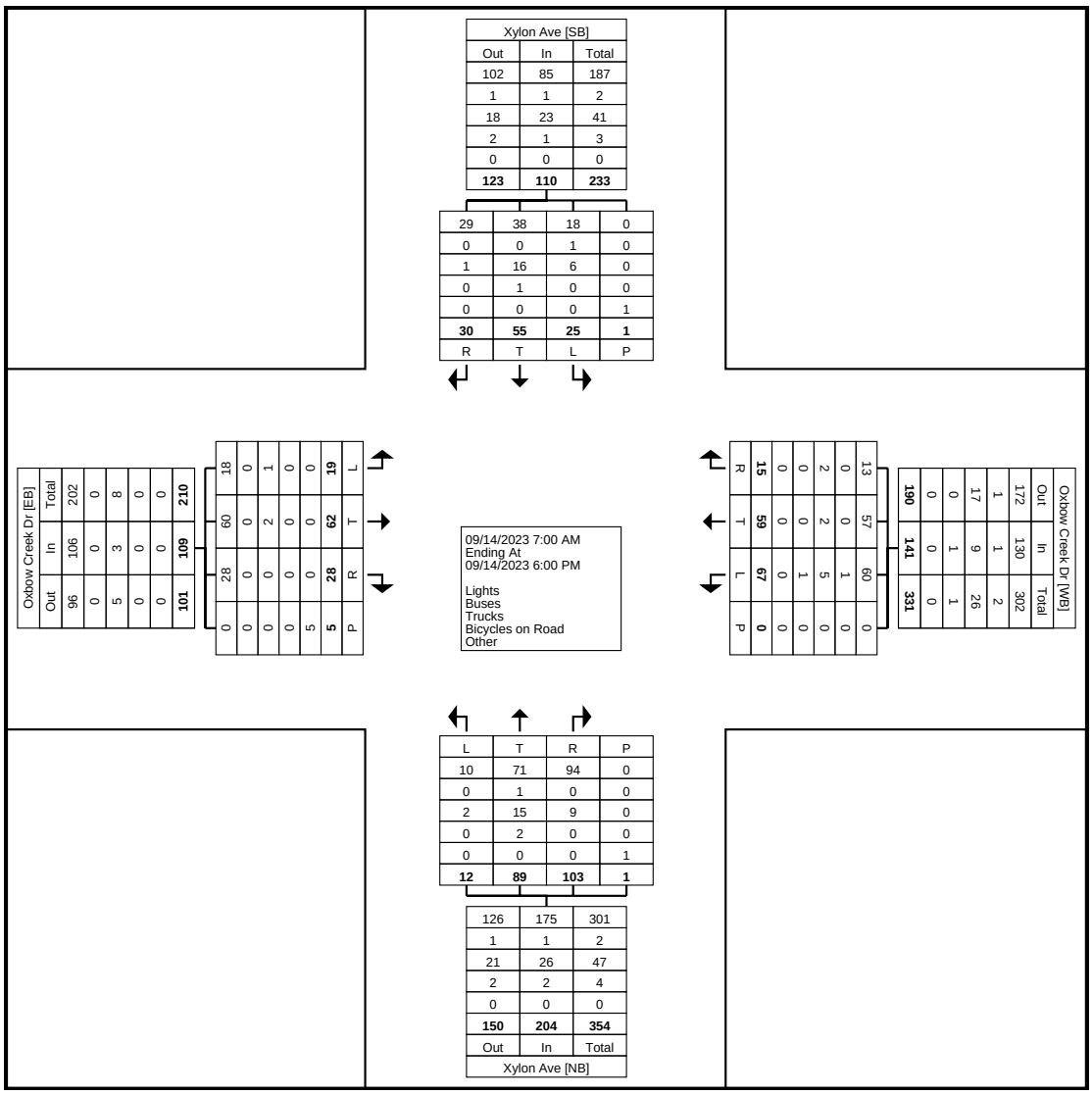
Count Name: Oxbow Creek Dr & Xylon Ave
Site Code:
Start Date: 09/14/2023



Turning Movement Data Plot

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

Warrenville, Illinois, United States 60555
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Count Name: Oxbow Creek Dr & Xylon Ave
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Xylon Ave Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	0	2	0	0	2	3	2	0	0	5	0	5	8	0	13	2	5	2	0	9	29
7:15 AM	1	0	0	0	1	5	2	2	0	9	3	2	5	0	10	2	3	0	0	5	25
7:30 AM	0	0	0	0	0	4	0	1	0	5	0	4	3	0	7	0	4	2	0	6	18
7:45 AM	0	1	0	0	1	2	4	1	0	7	1	7	5	0	13	2	5	3	0	10	31
Total	1	3	0	0	4	14	8	4	0	26	4	18	21	0	43	6	17	7	0	30	103
Approach %	25.0	75.0	0.0	-	-	53.8	30.8	15.4	-	-	9.3	41.9	48.8	-	-	20.0	56.7	23.3	-	-	-
Total %	1.0	2.9	0.0	-	3.9	13.6	7.8	3.9	-	25.2	3.9	17.5	20.4	-	41.7	5.8	16.5	6.8	-	29.1	-
PHF	0.250	0.375	0.000	-	0.500	0.700	0.500	0.500	-	0.722	0.333	0.643	0.656	-	0.827	0.750	0.850	0.583	-	0.750	0.831
Lights	1	2	0	-	3	12	6	3	-	21	4	13	20	-	37	5	11	7	-	23	84
% Lights	100.0	66.7	-	-	75.0	85.7	75.0	75.0	-	80.8	100.0	72.2	95.2	-	86.0	83.3	64.7	100.0	-	76.7	81.6
Buses	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	0	0	0	-	0	2
% Buses	0.0	0.0	-	-	0.0	7.1	0.0	0.0	-	3.8	0.0	5.6	0.0	-	2.3	0.0	0.0	0.0	-	0.0	1.9
Trucks	0	1	0	-	1	1	2	1	-	4	0	4	1	-	5	1	6	0	-	7	17
% Trucks	0.0	33.3	-	-	25.0	7.1	25.0	25.0	-	15.4	0.0	22.2	4.8	-	11.6	16.7	35.3	0.0	-	23.3	16.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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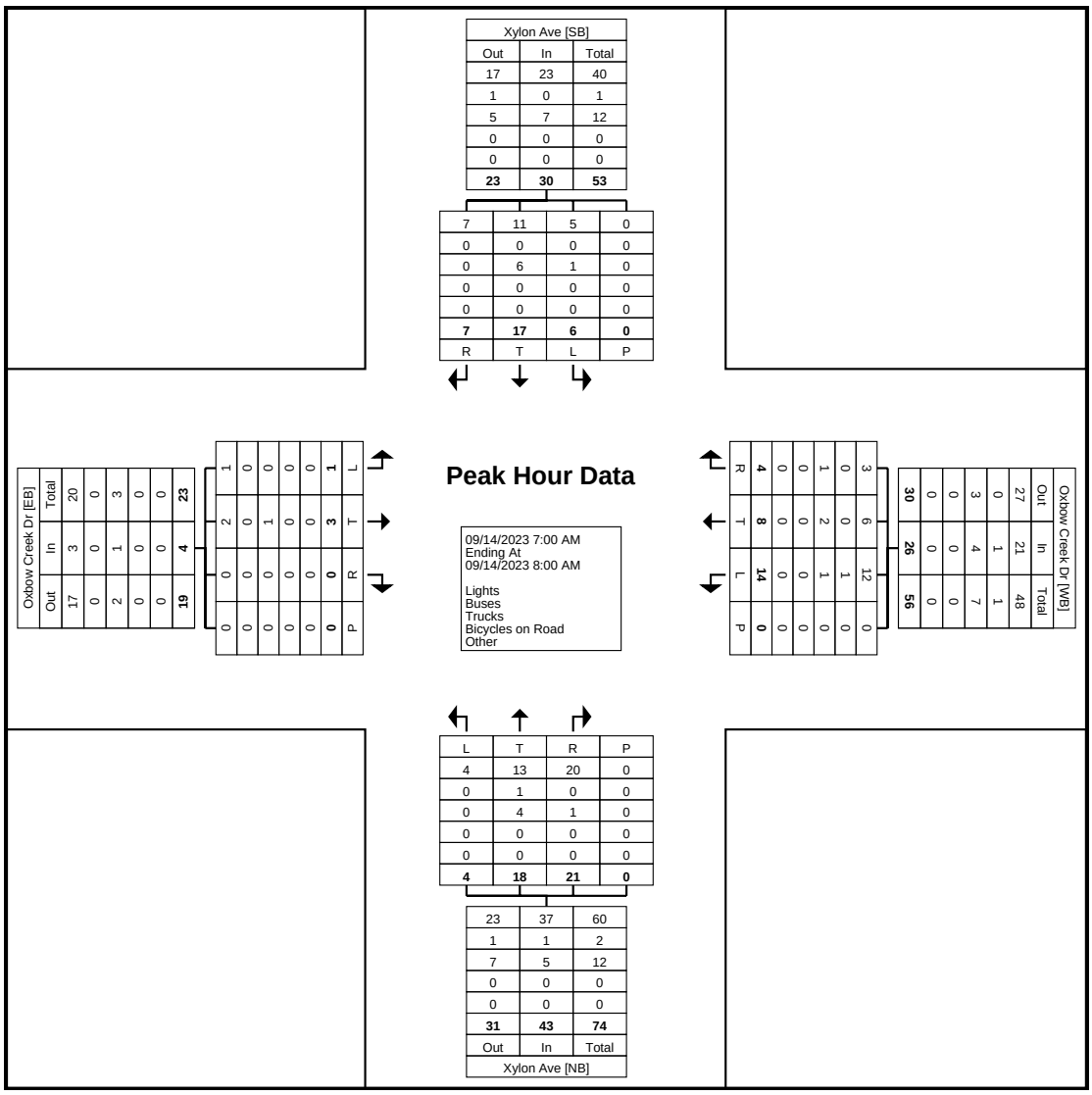
Count Name: Oxbow Creek Dr & Xylon Ave
Site Code:
Start Date: 09/14/2023



Turning Movement Peak Hour Data Plot (7:00 AM)

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

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

Count Name: Oxbow Creek Dr & Xylon Ave
Site Code:
Start Date: 09/14/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Oxbow Creek Dr Eastbound					Oxbow Creek Dr Westbound					Xylon Ave Northbound					Xylon Ave Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	1	3	3	0	7	9	4	1	0	14	1	8	8	0	17	2	2	3	0	7	45
4:15 PM	3	7	3	0	13	7	8	1	0	16	0	12	9	0	21	4	5	3	0	12	62
4:30 PM	1	19	7	1	27	5	2	1	0	8	0	23	24	0	47	1	4	0	0	5	87
4:45 PM	0	9	2	0	11	5	8	0	0	13	2	7	7	0	16	0	2	0	0	2	42
Total	5	38	15	1	58	26	22	3	0	51	3	50	48	0	101	7	13	6	0	26	236
Approach %	8.6	65.5	25.9	-	-	51.0	43.1	5.9	-	-	3.0	49.5	47.5	-	-	26.9	50.0	23.1	-	-	-
Total %	2.1	16.1	6.4	-	24.6	11.0	9.3	1.3	-	21.6	1.3	21.2	20.3	-	42.8	3.0	5.5	2.5	-	11.0	-
PHF	0.417	0.500	0.536	-	0.537	0.722	0.688	0.750	-	0.797	0.375	0.543	0.500	-	0.537	0.438	0.650	0.500	-	0.542	0.678
Lights	5	38	15	-	58	25	22	2	-	49	2	41	46	-	89	5	8	6	-	19	215
% Lights	100.0	100.0	100.0	-	100.0	96.2	100.0	66.7	-	96.1	66.7	82.0	95.8	-	88.1	71.4	61.5	100.0	-	73.1	91.1
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0
Trucks	0	0	0	-	0	0	0	1	-	1	1	8	2	-	11	2	4	0	-	6	18
% Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	33.3	-	2.0	33.3	16.0	4.2	-	10.9	28.6	30.8	0.0	-	23.1	7.6
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	0	1	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	-	0.0	3.8	0.0	0.0	-	2.0	0.0	2.0	0.0	-	1.0	0.0	7.7	0.0	-	3.8	1.3
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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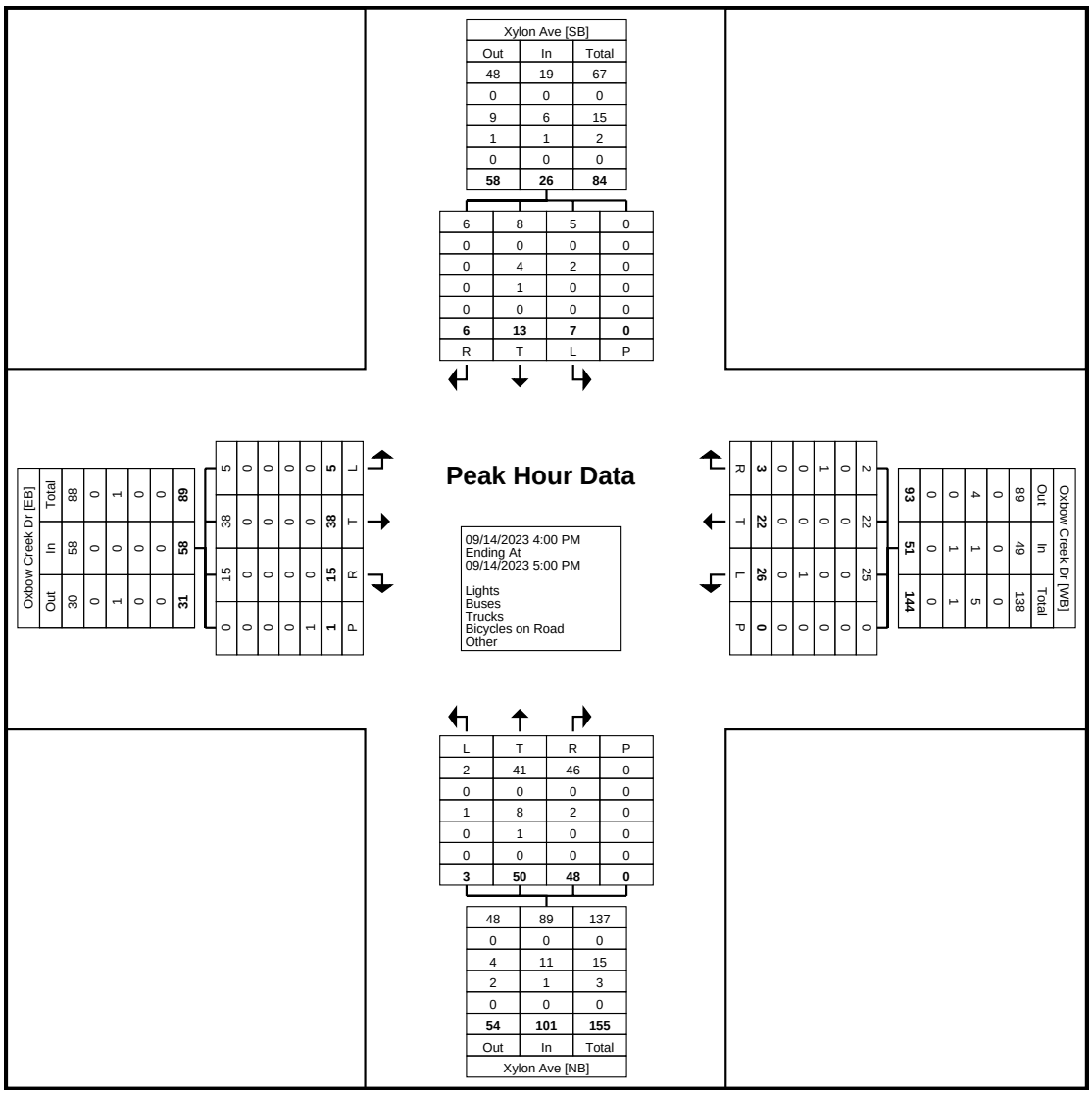
Start Date: 09/14/2023



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

Appendix D: SimTraffic Reports

I. Existing (2023) Simtraffic Reports

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.5	0.3	0.0	0.0	0.2	4.0	1.1
Total Del/Veh (s)	6.2	1.3	2.9	2.6	7.2	0.4	3.2

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.6	2.4	3.6	1.1	11.8	3.8	4.2

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Del/Veh (s)	3.8	0.1	0.5	1.6	0.6		0.0	3.7	1.5

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.2	0.3	0.0	0.1	0.1
Total Del/Veh (s)	11.0	0.5	5.9	6.4	3.2	4.4	3.2	4.6

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.7	0.0	0.0	3.5	0.5	0.5	0.1	0.0	0.2	0.1	0.0	0.2
Total Del/Veh (s)	3.6	15.8	8.4	17.2	10.3	3.2	4.0	1.9	1.5	2.4	2.4	0.8

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	5.4

6: CR 103 & 107th St N 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	0.2	0.0	0.0	0.0
Total Del/Veh (s)	5.6	4.2	7.5	3.3	2.4	0.6	0.3	3.3	2.8	3.1	2.6

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.1	0.3	0.3	0.2	0.1	0.0	0.0	3.1	0.6	3.0
Total Del/Veh (s)	37.8	47.9	40.7	33.9	32.6	5.6	23.8	12.1	9.4	16.5	16.2	3.8

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	28.4

8: Xylon Ln N & 109th Ave 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	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	2.3	1.0	0.5	5.1	3.3	3.4	9.5	0.1	3.1	8.2	8.6	3.3

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.0

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	8.7	2.7	6.2	0.1	0.0	0.3	2.2	0.3	2.1	1.4	0.9	1.3
Total Del/Veh (s)	285.9	420.4	180.4	104.9	56.8	15.2	155.6	36.6	6.4	104.8	63.6	40.9

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	1.1
Total Del/Veh (s)	79.0

10: Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)		0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)		6.3	6.4	1.5	5.8	3.2	0.3	0.2	3.4	0.2	0.0	1.2

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	71.8

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	96	44	44	35	63	32	30
Average Queue (ft)	44	5	4	5	17	13	3
95th Queue (ft)	81	27	22	24	49	34	19
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	50	40	48	61	86	37	40	65	56
Average Queue (ft)	18	5	10	21	30	5	14	25	19
95th Queue (ft)	45	24	33	52	68	23	37	52	43
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	69	12	67
Average Queue (ft)	19	0	18
95th Queue (ft)	49	6	51
Link Distance (ft)	288	1235	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	R
Maximum Queue (ft)	94	53	92	28
Average Queue (ft)	39	29	33	3
95th Queue (ft)	73	45	70	18
Link Distance (ft)	1197		933	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		10		225
Storage Blk Time (%)	16	11		
Queuing Penalty (veh)	14	8		

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	L	T	R
Maximum Queue (ft)	10	88	153	42	56	29	6	6
Average Queue (ft)	0	29	59	18	16	4	0	0
95th Queue (ft)	5	66	117	40	41	20	4	4
Link Distance (ft)		1654		898			1402	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		160		100	110		310
Storage Blk Time (%)			1					
Queuing Penalty (veh)			0					

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	70	26	5
Average Queue (ft)	5	24	3	0
95th Queue (ft)	20	55	17	4
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	97	579	110	264	58	77	94	144	254	36
Average Queue (ft)	9	282	48	112	17	22	29	45	97	9
95th Queue (ft)	59	503	95	209	46	58	72	103	210	27
Link Distance (ft)		755		4280			1221		1582	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	115		275		275	215		170		200
Storage Blk Time (%)		33		0				0	2	
Queuing Penalty (veh)		4		0				0	5	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	WB	NB	NB	SB
Directions Served	L	L	L	TR	LTR
Maximum Queue (ft)	6	29	29	25	46
Average Queue (ft)	0	4	6	3	14
95th Queue (ft)	4	20	24	16	40
Link Distance (ft)				1359	240
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200	200	250		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	R	L	T	T	R	L
Maximum Queue (ft)	265	665	688	265	425	152	100	229	503	521	365	450
Average Queue (ft)	93	406	395	175	216	51	42	100	284	284	33	311
95th Queue (ft)	268	805	814	312	393	118	93	239	459	468	164	532
Link Distance (ft)		885	885		659	659			2479	2479		
Upstream Blk Time (%)		4	5									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	85			90			75	500			280	250
Storage Blk Time (%)	5	95	44	48		6	1		0	10		9
Queuing Penalty (veh)	4	40	73	36		5	0		0	15		92

Intersection: 9: TH 169 & 109th Ave N

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	1435	1448	450
Average Queue (ft)	697	716	126
95th Queue (ft)	1341	1371	439
Link Distance (ft)	3863	3863	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)	23	24	
Queuing Penalty (veh)	53	26	

Intersection: 10: Oxbow Creek Dr

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	48	74
Average Queue (ft)	5	24
95th Queue (ft)	26	61
Link Distance (ft)	742	1654
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 376

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.7	0.1	0.0	0.0	0.3	4.1	0.6
Total Del/Veh (s)	5.5	0.8	3.9	3.4	8.5	0.5	3.2

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.2	0.1
Total Del/Veh (s)	8.9	6.3	12.8	1.8	11.2	4.1	9.5

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	2.0	0.2
Total Del/Veh (s)	1.8	0.4	0.1	0.9	0.5	8.6	3.8	9.2	7.9	3.2	1.2

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.4	0.4	0.0	0.0	0.2
Total Del/Veh (s)	30.1	1.0	21.8	3.5	3.0	3.0	1.6	11.1

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	2.1	0.1	0.1	3.6	0.2	0.3	0.1	0.0	0.0	0.2	0.0	0.5
Total Del/Veh (s)	10.7	14.8	6.5	11.4	12.0	5.4	3.6	2.9	2.5	4.4	1.5	0.7

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	4.3

6: CR 103 & 107th St N 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	0.2	0.0	0.8	0.0
Total Del/Veh (s)	9.0	7.0	9.1	4.0	9.9	1.6	0.9	3.7	1.9	1.3	1.9

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.3	0.3	0.0	0.0	0.0	3.4	0.5	3.3
Total Del/Veh (s)	41.0	41.0	34.0	32.0	37.4	9.7	21.9	21.2	15.2	44.1	14.1	3.4

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	29.8

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.5	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1
Total Del/Veh (s)	2.8	1.3	0.4	4.0	3.0	10.8	8.7	6.7	13.1	4.8	2.8

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.4	3.5	0.3	0.2	0.6	1.6	0.7	1.6	1.1	0.3	1.1
Total Del/Veh (s)	75.6	119.7	24.7	112.8	91.9	62.6	101.3	49.8	21.3	93.9	35.7	10.8

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	53.7

10: Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	6.0	6.4	3.0	5.7	5.7	4.1	2.0	0.7	0.5	2.6	0.1	0.1

10: Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.8

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	55.0

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	61	48	39	43	61	36	26
Average Queue (ft)	20	3	4	4	12	10	3
95th Queue (ft)	47	22	23	23	42	31	17
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	46	35	76	84	105	30	108	162	88
Average Queue (ft)	11	12	27	41	50	5	36	84	38
95th Queue (ft)	35	36	63	70	90	21	78	140	70
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	NB	SB	SB
Directions Served	L	LTR	LT	R
Maximum Queue (ft)	44	27	52	55
Average Queue (ft)	15	5	16	29
95th Queue (ft)	41	21	42	50
Link Distance (ft)	288	499	1235	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	R
Maximum Queue (ft)	371	59	108	13
Average Queue (ft)	148	36	26	1
95th Queue (ft)	308	46	75	6
Link Distance (ft)	1197		933	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		10		225
Storage Blk Time (%)	51	26		
Queuing Penalty (veh)	140	56		

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	R
Maximum Queue (ft)	43	92	72	79	32	4	20	42	4
Average Queue (ft)	16	38	33	27	5	0	2	11	0
95th Queue (ft)	39	71	59	58	21	3	11	34	3
Link Distance (ft)		1654		898		2402			
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150		160		100		310	110	310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	44	6	30
Average Queue (ft)	8	15	0	5
95th Queue (ft)	25	42	4	22
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	TR	L	T	R
Maximum Queue (ft)	205	623	60	282	154	100	318	178	101	47
Average Queue (ft)	102	300	25	137	42	35	155	69	35	9
95th Queue (ft)	224	530	55	236	100	81	283	145	82	29
Link Distance (ft)		755		4280			1221		1582	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	115		275		275	215		170		200
Storage Blk Time (%)	1	32		0			3	2		
Queuing Penalty (veh)	7	39		1			2	3		

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	NB	NB	SB
Directions Served	L	L	TR	LTR
Maximum Queue (ft)	38	50	56	50
Average Queue (ft)	6	10	20	15
95th Queue (ft)	26	34	44	42
Link Distance (ft)			1359	240
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200	250		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	T	R	L	T	T	R	L
Maximum Queue (ft)	197	294	263	148	416	352	100	657	1028	1007	440	336
Average Queue (ft)	86	151	88	44	194	172	83	191	532	533	179	147
95th Queue (ft)	164	262	221	91	385	332	127	451	1044	1041	514	262
Link Distance (ft)		885	885		659	659			2479	2479		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	85			90			75	500			280	250
Storage Blk Time (%)	19	55	8	2		31	24	0	10	25		1
Queuing Penalty (veh)	15	54	8	1		38	28	0	13	53		4

Intersection: 9: TH 169 & 109th Ave N

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	638	643	212
Average Queue (ft)	276	291	27
95th Queue (ft)	593	608	162
Link Distance (ft)	3863	3863	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)	10	13	
Queuing Penalty (veh)	15	10	

Intersection: 10: Oxbow Creek Dr

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	50	59	18
Average Queue (ft)	27	29	1
95th Queue (ft)	49	55	8
Link Distance (ft)	742	1654	1855
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 487

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1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.4	0.3	0.0	0.0	0.2	4.1	1.1
Total Del/Veh (s)	8.2	1.3	3.3	3.4	7.7	0.6	3.9

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	5.9	3.3	4.8	1.4	11.5	3.7	5.8

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.7	0.2	0.6	2.7	1.0	18.1	0.0	5.2	2.9

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.3	0.3	0.0	0.1	0.1
Total Del/Veh (s)	18.7	0.7	8.9	8.8	6.0	4.1	3.7	6.1

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.1	0.0	3.5	0.3	0.5	0.1	0.0	0.1	0.2	0.0	0.2
Total Del/Veh (s)	17.1	13.4	10.6	30.3	12.9	5.1	5.6	2.5	1.9	2.4	2.7	0.9

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	8.4

6: CR 103 & 107th St N 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	0.2	0.0
Total Del/Veh (s)	12.7	4.0	9.9	4.8	2.9	0.6	0.2	3.2	2.8	2.6	2.7

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.3	0.0	0.3	0.3	0.3	0.2	0.0	0.1	3.0	0.6	3.0
Total Del/Veh (s)	33.0	42.9	6.5	38.9	35.8	5.5	21.0	10.7	5.1	15.4	13.4	3.5

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	24.9

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)		0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	3.9
Total Del/Veh (s)		26.4	3.6	29.8	24.4	9.9	11.8	0.8	3.0	5.3	3.5	1.8

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	19.3

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.3	3.5	0.3	0.0	0.0	1.9	0.3	2.1	2.1	1.5	1.8
Total Del/Veh (s)	69.8	102.9	128.3	77.1	67.3	23.3	96.3	37.0	8.1	126.6	96.6	70.7

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	1.3
Total Del/Veh (s)	80.1

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.4	7.9	1.5	6.9	3.4	0.8	0.9	4.0	0.6	1.0	1.6

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	73.8

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	118	46	29	38	66	47	32
Average Queue (ft)	49	4	2	5	18	16	4
95th Queue (ft)	96	23	13	25	50	38	19
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	59	53	50	62	93	27	79	80	52
Average Queue (ft)	19	12	11	26	40	5	37	33	17
95th Queue (ft)	47	38	36	56	80	21	68	63	38
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	WB	SB	SB
Directions Served	L	TR	LT	R
Maximum Queue (ft)	99	26	39	91
Average Queue (ft)	40	2	12	34
95th Queue (ft)	77	14	37	72
Link Distance (ft)	288	1198	1235	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	R
Maximum Queue (ft)	160	53	167	4	34
Average Queue (ft)	54	32	53	0	6
95th Queue (ft)	111	47	113	3	22
Link Distance (ft)	1198		670	2402	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		10			225
Storage Blk Time (%)	24	12			
Queuing Penalty (veh)	26	9			

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	L	L	R
Maximum Queue (ft)	44	93	192	133	73	33	8
Average Queue (ft)	3	32	83	28	24	4	0
95th Queue (ft)	21	71	165	97	54	19	4
Link Distance (ft)		1654		898			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		160		100	110	310
Storage Blk Time (%)		0	5	0	0		
Queuing Penalty (veh)		0	3	0	0		

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	68	25	6
Average Queue (ft)	5	23	3	0
95th Queue (ft)	20	54	17	4
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	T	L	T	R	L	T	R	L	T
Maximum Queue (ft)	256	386	90	161	130	242	44	61	79	30	124	209
Average Queue (ft)	25	232	29	16	50	122	14	17	17	4	44	90
95th Queue (ft)	136	419	72	100	102	214	35	45	50	18	102	175
Link Distance (ft)		314	314	386		4268			1209			1583
Upstream Blk Time (%)	0	7										
Queuing Penalty (veh)	0	16										
Storage Bay Dist (ft)	300				275		275	350		300	170	
Storage Blk Time (%)	0	7				0						1
Queuing Penalty (veh)	0	1				0						2

Intersection: 7: CR 103 & 109th Ave N

Movement	SB
Directions Served	R
Maximum Queue (ft)	41
Average Queue (ft)	9
95th Queue (ft)	28
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Maximum Queue (ft)	4	348	305	61	73	204	156	42	20	23	49	
Average Queue (ft)	0	161	86	17	20	93	64	6	2	2	5	
95th Queue (ft)	3	295	214	42	54	176	131	25	10	15	26	
Link Distance (ft)		865	865			386	386		1342	224		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	200			250			60	
Storage Blk Time (%)		1	0			1					0	
Queuing Penalty (veh)		0	0			0					0	

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	30	94	267	470	366	179	187	114	78	148	99	139
Average Queue (ft)	5	38	108	122	216	91	105	26	29	49	25	58
95th Queue (ft)	21	80	196	348	363	157	171	71	68	116	76	116
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)			0	1	12							
Queuing Penalty (veh)			0	2	9							

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	489	520	216	205	375	2584	2601	450
Average Queue (ft)	295	293	26	100	216	1130	1141	142
95th Queue (ft)	468	480	113	184	440	2513	2508	474
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)						0	0	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	0	11				22	24	
Queuing Penalty (veh)	0	17				61	27	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	70	15	36
Average Queue (ft)	4	35	1	2
95th Queue (ft)	23	64	11	18
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 174

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.7	0.1	0.0	0.0	0.2	4.1	0.5
Total Del/Veh (s)	7.2	0.7	4.5	4.4	9.5	0.6	3.8

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.3	0.2	0.1
Total Del/Veh (s)	8.2	6.2	13.8	2.1	12.3	4.7	10.5

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	1.2	0.2
Total Del/Veh (s)	2.3	3.7	0.2	1.5	0.5	13.5	9.1	40.4	3.2	6.2	5.8

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	2.6	0.0	0.9	0.4	0.4	0.0	0.1	0.7
Total Del/Veh (s)	103.5	17.5	88.2	5.4	4.1	3.1	1.6	37.6

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.6	0.1	0.1	3.7	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	11.8	15.1	6.8	14.3	12.3	5.3	3.8	3.2	2.6	4.9	1.5	0.7

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	4.9

6: CR 103 & 107th St N 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)	10.2	6.3	9.0	4.5	4.7	1.7	1.0	3.9	1.7	3.5	2.0

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.3	0.1	0.3	0.3	0.3	0.0	0.0	0.0	3.3	0.5	3.4
Total Del/Veh (s)	33.4	33.7	2.7	33.3	35.7	9.8	20.7	18.1	9.0	32.2	14.2	3.9

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	24.6

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.6	0.1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.2	0.1
Total Del/Veh (s)	22.5	28.4	2.3	24.7	25.4	18.1	14.3	5.8	5.1	14.6	2.7	24.5

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.3	3.5	0.5	0.0	0.0	1.8	0.8	1.8	1.2	0.3	1.1
Total Del/Veh (s)	66.9	85.3	33.1	76.0	82.1	58.8	98.5	49.5	23.5	74.5	25.2	7.7

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	46.7

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1
Total Del/Veh (s)	5.9	7.3	3.3	6.8	6.4	3.9	2.8	1.0	0.8	3.1	0.7	0.7

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	2.4

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	58.8

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	68	30	34	43	69	32	27
Average Queue (ft)	21	2	4	4	15	10	4
95th Queue (ft)	53	15	21	24	50	31	18
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	44	54	70	107	140	41	132	164	90
Average Queue (ft)	11	15	26	49	67	7	46	90	37
95th Queue (ft)	36	42	59	85	117	28	99	143	71
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	EB	NB	SB	SB
Directions Served	L	TR	LTR	LT	R
Maximum Queue (ft)	64	122	27	175	132
Average Queue (ft)	22	16	3	52	54
95th Queue (ft)	50	113	18	165	123
Link Distance (ft)	288	288	499	1235	
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		1			
Storage Bay Dist (ft)					200
Storage Blk Time (%)				3	0
Queuing Penalty (veh)				5	0

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	R
Maximum Queue (ft)	892	63	164	30
Average Queue (ft)	428	37	46	2
95th Queue (ft)	1036	47	110	14
Link Distance (ft)	1198		670	
Upstream Blk Time (%)	4			
Queuing Penalty (veh)	23			
Storage Bay Dist (ft)		10		225
Storage Blk Time (%)	64	32		
Queuing Penalty (veh)	215	73		

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T
Maximum Queue (ft)	47	113	92	74	34	26	43	4
Average Queue (ft)	20	44	36	21	5	1	12	0
95th Queue (ft)	42	81	73	49	24	12	37	3
Link Distance (ft)		1654		898				1402
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		160		100	310	110	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	52	11	28
Average Queue (ft)	7	18	0	4
95th Queue (ft)	25	45	6	19
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	T	L	T	R	L	T	R	L	T
Maximum Queue (ft)	314	395	44	300	56	249	91	86	272	91	144	128
Average Queue (ft)	121	240	14	44	18	129	33	28	116	21	63	39
95th Queue (ft)	293	460	38	181	48	220	66	63	220	56	118	95
Link Distance (ft)		314	314	386		4268			1209			1583
Upstream Blk Time (%)	0	12		0								
Queuing Penalty (veh)	0	37		1								
Storage Bay Dist (ft)	300				275		275	350		300	170	
Storage Blk Time (%)	0	12				0			0		0	
Queuing Penalty (veh)	1	16				0			0		0	

Intersection: 7: CR 103 & 109th Ave N

Movement	SB
Directions Served	R
Maximum Queue (ft)	46
Average Queue (ft)	10
95th Queue (ft)	31
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	182	422	361	18	30	196	222	80	53	29	38
Average Queue (ft)	21	215	101	4	3	96	102	18	11	2	7
95th Queue (ft)	110	370	258	15	17	175	190	58	37	15	28
Link Distance (ft)		865	865			386	386		1342	224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	300			300	200			250			60
Storage Blk Time (%)		3	0			0					0
Queuing Penalty (veh)		1	0			0					0

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	144	163	207	175	144	172	176	148	144	262	128	452
Average Queue (ft)	26	76	112	65	52	76	88	60	66	125	59	138
95th Queue (ft)	88	143	188	150	113	140	151	120	128	229	116	406
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	910	930	440	158	246	384	398	128
Average Queue (ft)	533	532	207	73	75	218	234	13
95th Queue (ft)	911	912	535	129	156	363	384	78
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	11	24				2	7	
Queuing Penalty (veh)	16	55				4	6	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	58	65	26	67
Average Queue (ft)	29	29	1	10
95th Queue (ft)	50	54	9	43
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 454

III. 2040 No-Build Simtraffic Reports

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.5	0.4	0.0	0.0	0.2	4.1	1.1
Total Del/Veh (s)	11.2	1.5	4.3	4.4	7.2	0.5	5.1

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.3	4.0	5.8	1.4	11.9	3.6	6.6

3: 101st Ave N/Oak Grove Pkwy & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.8	0.2	0.0	3.3	1.4	17.8	0.3	6.3	3.5

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	3.5	0.5	0.0	0.0	0.4
Total Del/Veh (s)	42.9	0.2	3.7	10.3	3.0	6.1	3.5	7.4

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.0	0.1	3.4	0.9	0.7	0.2	0.0	0.1	0.2	0.0	0.2
Total Del/Veh (s)	12.6	27.6	13.4	63.9	26.1	12.8	6.4	2.4	1.3	3.0	3.2	1.1

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	15.2

6: CR 103 & 107th St N Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.1	0.0
Total Del/Veh (s)	10.6	3.7	10.2	4.0	2.8	0.8	0.4	4.8	3.1	3.2	2.9

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.4	0.2	0.4	0.3	0.3	0.0	0.0	0.2	3.0	0.8	3.0
Total Del/Veh (s)	28.7	45.1	8.9	42.2	37.1	6.0	24.2	11.5	6.2	17.5	16.6	4.4

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	27.0

8: Xylon Ln N & 109th Ave 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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	4.2
Total Del/Veh (s)	33.1	28.0	3.8	27.3	23.0	11.4	10.1	0.8	3.4	13.0	6.3	2.4

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	19.6

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.3	3.5	0.3	0.0	0.0	2.0	0.3	1.9	131.7	127.3	123.8
Total Del/Veh (s)	69.4	118.9	167.2	81.7	66.7	32.7	105.2	49.6	14.0	249.0	233.6	206.6

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	72.6
Total Del/Veh (s)	158.7

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	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	0.0	0.0	0.0
Total Del/Veh (s)	5.4	6.2	7.9	1.5	7.4	5.1	0.9	0.9	5.0	0.9	1.0	1.8

Total Network Performance

Denied Del/Veh (s)	50.6
Total Del/Veh (s)	128.5

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	163	40	38	52	104	37	30
Average Queue (ft)	66	6	4	11	26	15	3
95th Queue (ft)	132	25	24	39	68	37	18
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	58	52	47	91	128	40	102	89	49
Average Queue (ft)	23	17	13	33	52	6	41	38	16
95th Queue (ft)	51	43	38	71	98	25	76	68	39
Link Distance (ft)		1082	1082	415	415		693	693	693
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N/Oak Grove Pkwy & Xylon Ave

Movement	EB	WB	SB	SB
Directions Served	L	TR	LT	R
Maximum Queue (ft)	108	36	49	83
Average Queue (ft)	48	4	11	35
95th Queue (ft)	90	19	35	72
Link Distance (ft)	318	1892	1405	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	TR	T	TR
Maximum Queue (ft)	145	78	101	67	31	102	151
Average Queue (ft)	65	39	35	13	2	36	57
95th Queue (ft)	117	67	73	43	15	81	124
Link Distance (ft)				965	965	568	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	300				400
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	R
Maximum Queue (ft)	36	92	225	464	88	4	34	13
Average Queue (ft)	3	38	119	90	28	0	7	0
95th Queue (ft)	19	77	229	340	66	3	27	6
Link Distance (ft)		1654		898				
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		160		100	310	110	310
Storage Blk Time (%)			20	0	0			
Queuing Penalty (veh)			11	0	0			

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	78	26	10
Average Queue (ft)	5	27	3	0
95th Queue (ft)	20	65	15	5
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	T	L	T	R	L	T	R	L	T
Maximum Queue (ft)	150	399	115	244	191	325	47	86	80	30	152	276
Average Queue (ft)	16	256	34	32	61	143	15	24	19	6	50	107
95th Queue (ft)	92	449	85	141	129	267	36	59	56	22	113	225
Link Distance (ft)		314	314	386		4268			1209			1583
Upstream Blk Time (%)	0	11										
Queuing Penalty (veh)	0	27										
Storage Bay Dist (ft)	300				275		275	350		300	170	
Storage Blk Time (%)	0	12				1					0	3
Queuing Penalty (veh)	0	2				2					1	7

Intersection: 7: CR 103 & 109th Ave N

Movement	SB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Maximum Queue (ft)	19	356	305	58	78	219	237	32	17	29	42	
Average Queue (ft)	1	174	102	19	24	95	83	5	1	2	6	
95th Queue (ft)	11	302	227	46	61	185	183	22	9	14	28	
Link Distance (ft)		865	865			386	386		1342	224		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	200			250			60	
Storage Blk Time (%)		1	0			1					0	
Queuing Penalty (veh)		0	0			0					0	

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	35	173	424	502	367	224	247	102	108	177	111	246
Average Queue (ft)	8	40	149	220	258	104	125	32	35	65	29	67
95th Queue (ft)	28	100	324	539	421	185	211	76	83	148	80	164
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)		0	4	1	27		0					
Queuing Penalty (veh)		0	2	3	23		0					

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	667	686	440	194	375	3890	3890	450
Average Queue (ft)	417	408	144	94	227	3124	3117	167
95th Queue (ft)	624	635	447	169	460	4621	4608	513
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)						21	16	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	4	23				28	29	
Queuing Penalty (veh)	4	37				84	36	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	83	6	52
Average Queue (ft)	7	37	0	4
95th Queue (ft)	33	72	4	24
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 240

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.6	0.2	0.0	0.0	0.2	4.1	0.5
Total Del/Veh (s)	9.3	0.9	5.1	5.6	7.6	0.5	4.5

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.2	0.2
Total Del/Veh (s)	10.0	8.7	15.4	2.0	23.1	5.7	15.6

3: 101st Ave N/Oak Grove Pkwy & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.4	0.0	0.0	0.0	0.1	0.1	0.2	0.0	1.2	0.4
Total Del/Veh (s)	2.5	10.5	3.7	1.8	0.6	14.8	5.5	33.4	0.9	7.2	8.7

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	109.6	0.0	64.4	3.0	0.4	0.0	0.0	26.2
Total Del/Veh (s)	403.7	0.2	11.5	8.2	4.8	5.5	2.3	47.9

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.4	0.1	0.2	3.6	0.3	0.3	0.0	0.0	0.0	0.2	0.0	0.2
Total Del/Veh (s)	14.2	20.3	11.6	15.5	12.8	6.6	4.2	3.5	2.8	5.1	2.4	0.7

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	6.4

6: CR 103 & 107th St N 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	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.6	6.5	9.8	3.8	7.5	2.0	1.3	4.8	2.1	1.5	2.3

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.2	0.0	0.3	0.3	0.4	0.0	0.0	0.1	3.4	0.6	3.4
Total Del/Veh (s)	33.6	34.3	3.5	37.5	36.9	10.6	21.5	20.4	10.3	33.9	16.5	4.3

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	26.5

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.4	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.1	4.2	0.1
Total Del/Veh (s)	22.1	30.5	2.5	23.5	23.2	16.0	12.8	3.6	7.0	18.7	3.9	24.8

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.4	0.3	3.4	0.5	0.0	0.0	45.8	44.2	42.5	1.2	0.4	1.1
Total Del/Veh (s)	69.2	89.0	38.9	73.6	73.5	63.8	186.7	162.9	137.2	79.1	27.0	8.5

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	22.3
Total Del/Veh (s)	101.9

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	5.9	8.4	3.4	8.9	6.7	3.8	2.4	1.3	0.9	3.2	0.8	0.4

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	2.7

Total Network Performance

Denied Del/Veh (s)	19.7
Total Del/Veh (s)	116.2

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	91	34	46	57	108	31	26
Average Queue (ft)	28	4	5	7	25	12	3
95th Queue (ft)	64	20	25	32	75	33	17
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	62	70	108	117	134	40	284	308	233
Average Queue (ft)	14	21	39	61	79	6	78	127	51
95th Queue (ft)	43	57	82	104	124	25	235	282	149
Link Distance (ft)		1082	1082	415	415		693	693	693
Upstream Blk Time (%)							0	1	0
Queuing Penalty (veh)							0	0	0
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N/Oak Grove Pkwy & Xylon Ave

Movement	EB	EB	B17	B17	WB	NB	SB	SB
Directions Served	L	TR	T	T	TR	LTR	LT	R
Maximum Queue (ft)	103	201	156	168	10	30	226	142
Average Queue (ft)	24	38	22	30	1	5	53	56
95th Queue (ft)	68	224	170	199	6	23	157	108
Link Distance (ft)	318	318	415	415	1892	489	1405	
Upstream Blk Time (%)		7	2	3				
Queuing Penalty (veh)		25	5	10				
Storage Bay Dist (ft)								200
Storage Blk Time (%)							3	
Queuing Penalty (veh)							6	

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	EB	EB	B23	B23	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	T	T	L	T	TR	T	TR
Maximum Queue (ft)	322	411	60	256	1873	1852	71	150	92	90	95
Average Queue (ft)	316	377	2	105	962	602	27	50	9	26	32
95th Queue (ft)	338	499	44	201	1977	1890	55	113	49	65	75
Link Distance (ft)		322	322		1892	1892		965	965	568	
Upstream Blk Time (%)	53	84			7	3					
Queuing Penalty (veh)	0	269			22	10					
Storage Bay Dist (ft)	250			250			300				400
Storage Blk Time (%)	93	0		1							
Queuing Penalty (veh)	0	0		0							

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	R
Maximum Queue (ft)	71	165	99	78	37	18	47	8
Average Queue (ft)	24	67	39	28	7	2	13	0
95th Queue (ft)	56	127	75	56	27	12	38	6
Link Distance (ft)		1654		898				
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150		160		100	310	110	310
Storage Blk Time (%)		1						
Queuing Penalty (veh)		0						

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	44	23	32
Average Queue (ft)	8	20	1	6
95th Queue (ft)	26	46	9	25
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	B18	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	T	T	L	T	R	L	T	R	L
Maximum Queue (ft)	314	397	68	334	77	83	282	152	95	273	84	151
Average Queue (ft)	136	277	19	59	3	24	156	38	27	131	21	74
95th Queue (ft)	309	454	48	227	56	61	257	95	72	252	58	131
Link Distance (ft)		314	314	386	386		4268			1209		
Upstream Blk Time (%)	0	11		0	0							
Queuing Penalty (veh)	0	40		0	0							
Storage Bay Dist (ft)	300					275		275	350		300	170
Storage Blk Time (%)	0	11					1			0		0
Queuing Penalty (veh)	1	18					1			0		0

Intersection: 7: CR 103 & 109th Ave N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	134	55
Average Queue (ft)	46	12
95th Queue (ft)	108	36
Link Distance (ft)	1583	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	308	490	394	27	12	207	213	60	66	33	34
Average Queue (ft)	28	252	117	5	1	98	100	17	14	6	9
95th Queue (ft)	151	416	287	18	9	186	187	49	43	24	32
Link Distance (ft)		865	865			386	386		1342	224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	300			300	200			250			60
Storage Blk Time (%)		5	0			1				0	0
Queuing Penalty (veh)		2	0			0				0	0

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	134	159	222	199	162	170	193	174	156	296	133	660
Average Queue (ft)	25	79	133	88	64	88	98	66	70	144	65	328
95th Queue (ft)	87	141	196	177	140	152	168	130	131	252	122	795
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)			1									
Queuing Penalty (veh)			1									

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	2512	2508	440	172	337	506	497	52
Average Queue (ft)	1905	1909	254	94	90	253	265	11
95th Queue (ft)	3023	3015	577	150	204	422	432	34
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)	15	18						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	33	37				5	10	
Queuing Penalty (veh)	53	93				8	9	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	63	67	12	78
Average Queue (ft)	31	32	1	13
95th Queue (ft)	55	56	8	50
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 576

IV. 2028 Build SimTraffic Reports

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.5	0.3	0.0	0.0	0.2	4.0	1.0
Total Del/Veh (s)	8.8	1.4	3.7	3.6	8.4	0.5	4.1

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	6.3	3.5	5.3	1.2	11.8	3.5	6.2

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	0.2	0.3	2.6	1.1	13.2	0.5	6.7	3.0

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.3	0.3	0.0	0.1	0.1
Total Del/Veh (s)	20.7	0.7	8.2	8.3	5.7	4.0	3.5	6.0

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.8	0.0	0.0	3.5	0.6	0.5	0.2	0.0	0.2	0.2	0.0	0.2
Total Del/Veh (s)	18.0	23.8	10.4	48.4	25.1	18.1	6.5	2.8	2.0	2.3	2.7	0.9

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	12.0

6: CR 103 & 107th St N 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	0.1	0.0
Total Del/Veh (s)	9.7	3.0	7.4	3.0	1.7	0.6	0.2	2.4	2.8	2.3	2.6

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.5	0.1	0.3	0.3	0.3	0.1	0.0	0.2	3.1	0.8	3.1
Total Del/Veh (s)	33.3	43.7	7.7	37.4	38.7	5.9	22.5	10.3	5.3	15.5	14.6	4.6

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	26.1

8: Xylon Ln N & 109th Ave 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	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	4.2
Total Del/Veh (s)	18.0	26.6	6.1	30.9	23.6	12.5	13.8	0.8	3.3	12.7	9.1	2.6

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	18.8

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.5	3.8	6.9	0.3	0.0	0.0	2.0	0.3	2.0	3.8	3.1	3.3
Total Del/Veh (s)	84.0	184.1	247.9	83.3	67.2	23.2	96.9	36.7	11.5	160.9	130.3	102.7

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	2.4
Total Del/Veh (s)	105.5

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)		0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)		7.1	8.3	1.4	7.3	2.8	0.8	1.0	4.8	1.3	1.4	1.8

Total Network Performance

Denied Del/Veh (s)	2.2
Total Del/Veh (s)	93.9

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	138	48	46	44	70	51	36
Average Queue (ft)	52	6	5	6	19	16	4
95th Queue (ft)	101	30	25	27	51	41	20
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	58	38	57	76	102	42	93	83	60
Average Queue (ft)	23	11	15	29	44	5	39	33	17
95th Queue (ft)	50	34	43	63	86	27	73	65	41
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	WB	SB	SB
Directions Served	L	TR	LT	R
Maximum Queue (ft)	88	27	39	99
Average Queue (ft)	42	2	10	40
95th Queue (ft)	74	13	34	78
Link Distance (ft)	288	1198	1235	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	R
Maximum Queue (ft)	147	49	159	4	42
Average Queue (ft)	53	32	50	0	6
95th Queue (ft)	113	45	110	3	25
Link Distance (ft)	1198		670	2402	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		10			225
Storage Blk Time (%)	26	12			
Queuing Penalty (veh)	29	10			

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	32	104	208	353	77	4	3	29	4	9
Average Queue (ft)	2	37	85	66	26	0	0	4	0	0
95th Queue (ft)	16	78	182	290	57	3	2	20	0	5
Link Distance (ft)		1654		898		2402			1402	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150		160		100		310	110		310
Storage Blk Time (%)		0	10	0	0					
Queuing Penalty (veh)		0	6	0	0					

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	58	20	25
Average Queue (ft)	5	25	1	1
95th Queue (ft)	20	52	10	10
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	T	L	T	R	L	T	R	L	T
Maximum Queue (ft)	262	400	104	131	118	268	48	75	84	42	116	271
Average Queue (ft)	33	246	28	19	52	131	14	21	17	5	42	93
95th Queue (ft)	150	433	75	85	98	233	36	55	54	22	91	206
Link Distance (ft)		314	314	386		4268			1209			1583
Upstream Blk Time (%)	0	9										
Queuing Penalty (veh)	0	21										
Storage Bay Dist (ft)	300				275		275	350		300	170	
Storage Blk Time (%)	0	11				0						2
Queuing Penalty (veh)	0	3				0						5

Intersection: 7: CR 103 & 109th Ave N

Movement	SB
Directions Served	R
Maximum Queue (ft)	75
Average Queue (ft)	13
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Maximum Queue (ft)	20	299	265	125	129	232	177	121	31	34	38	
Average Queue (ft)	1	157	84	44	40	91	73	43	5	3	5	
95th Queue (ft)	10	281	195	97	90	188	158	93	19	19	23	
Link Distance (ft)		865	865			386	386		1342	224		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	200			250			60	
Storage Blk Time (%)		0	0			1				0	0	
Queuing Penalty (veh)		0	0			0				0	0	

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	88	196	537	592	373	263	294	194	127	175	78	110
Average Queue (ft)	11	46	210	308	272	135	150	37	34	74	24	56
95th Queue (ft)	49	117	557	762	445	225	244	113	85	151	62	102
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)			0	7								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)			8	6	39	0	1					
Queuing Penalty (veh)			4	11	32	0	0					

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	485	502	378	254	375	3704	3639	450
Average Queue (ft)	292	286	67	129	274	1583	1577	129
95th Queue (ft)	466	473	226	228	470	3564	3499	447
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)						3	1	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	0	11		0	0	24	26	
Queuing Penalty (veh)	0	23		1	2	85	29	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	77	6	61
Average Queue (ft)	5	39	0	5
95th Queue (ft)	26	71	4	30
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 262

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.8	0.1	0.0	0.0	0.2	4.1	0.5
Total Del/Veh (s)	7.3	0.8	4.9	5.2	7.5	0.6	4.2

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.2	0.2	0.1
Total Del/Veh (s)	10.6	6.8	13.8	1.9	12.4	5.2	10.9

3: 101st Ave N & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.0	1.4	0.3
Total Del/Veh (s)	2.7	5.9	0.0	1.8	0.6	19.5	21.6	47.5	1.0	10.7	8.0

4: CR 103 & 101st Ave N Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.3	0.0	2.6	0.5	0.5	0.0	0.0	1.2
Total Del/Veh (s)	132.7	34.8	110.1	5.1	3.8	3.4	1.9	45.9

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.8	0.1	0.1	3.6	0.3	0.2	0.0	0.0	0.0	0.2	0.0	0.3
Total Del/Veh (s)	12.2	13.9	9.1	15.3	11.9	5.0	4.0	3.3	2.5	4.7	1.8	0.7

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	5.5

6: CR 103 & 107th St N 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)	8.9	6.1	7.5	4.2	8.3	1.6	1.0	4.3	2.0	1.5	2.0

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.4	0.0	0.4	0.3	0.3	0.0	0.0	0.0	3.3	0.6	3.3
Total Del/Veh (s)	39.8	34.0	2.7	38.2	39.0	9.3	17.5	18.3	9.0	33.1	14.6	3.7

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	25.9

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.3	0.0	0.4	0.0	0.0	0.0	2.4	0.9	0.5	0.1	4.3	0.6
Total Del/Veh (s)	21.2	32.3	5.8	27.6	21.0	14.7	19.7	14.1	6.6	27.7	5.5	21.1

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.4	3.5	4.6	1.8	4.5	1.9	0.9	1.8	1.2	0.3	1.1
Total Del/Veh (s)	68.5	104.7	28.8	79.7	66.4	115.3	101.6	59.1	38.2	91.4	26.5	7.4

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	1.4
Total Del/Veh (s)	58.3

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	5.8	9.7	4.0	9.5	8.2	4.8	2.8	1.3	0.9	5.0	2.2	1.8

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	3.3

Total Network Performance

Denied Del/Veh (s)	1.7
Total Del/Veh (s)	70.6

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	56	48	35	63	115	35	32
Average Queue (ft)	21	4	4	7	24	12	4
95th Queue (ft)	48	23	23	35	75	34	20
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	40	61	80	113	138	31	129	193	103
Average Queue (ft)	11	17	30	56	74	7	52	94	41
95th Queue (ft)	33	47	67	94	119	25	103	153	78
Link Distance (ft)		1082	1082	455	455		692	692	692
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N & Xylon Ave

Movement	EB	EB	B17	B17	WB	NB	SB	SB
Directions Served	L	TR	T	T	TR	LTR	LT	R
Maximum Queue (ft)	99	209	81	87	6	27	259	130
Average Queue (ft)	27	27	7	11	0	3	67	60
95th Queue (ft)	69	156	88	120	4	17	258	122
Link Distance (ft)	288	288	455	455	1198	499	1235	
Upstream Blk Time (%)		3						
Queuing Penalty (veh)		9						
Storage Bay Dist (ft)								200
Storage Blk Time (%)							4	0
Queuing Penalty (veh)							8	0

Intersection: 4: CR 103 & 101st Ave N

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	R
Maximum Queue (ft)	1071	58	155	26
Average Queue (ft)	524	37	39	2
95th Queue (ft)	1177	46	101	14
Link Distance (ft)	1198		670	
Upstream Blk Time (%)	6			
Queuing Penalty (veh)	33			
Storage Bay Dist (ft)		10		225
Storage Blk Time (%)	67	33		
Queuing Penalty (veh)	228	75		

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	R	L
Maximum Queue (ft)	48	170	94	65	52	31	34
Average Queue (ft)	19	55	38	27	9	3	11
95th Queue (ft)	43	113	75	52	33	16	34
Link Distance (ft)		1654		898			
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		160		100	310	110
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	27	39	6	33
Average Queue (ft)	8	17	0	7
95th Queue (ft)	26	42	6	26
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	B18	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	T	T	L	T	R	L	T	R	L
Maximum Queue (ft)	313	396	51	298	34	70	311	69	115	273	84	166
Average Queue (ft)	143	255	14	49	0	21	152	31	28	115	21	63
95th Queue (ft)	320	450	39	198	0	54	262	57	76	214	56	125
Link Distance (ft)		314	314	386	386		4268			1209		
Upstream Blk Time (%)	0	10		0								
Queuing Penalty (veh)	0	34		0								
Storage Bay Dist (ft)	300					275		275	350		300	170
Storage Blk Time (%)	0	11					1			0		0
Queuing Penalty (veh)	1	18					1			0		1

Intersection: 7: CR 103 & 109th Ave N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	117	55
Average Queue (ft)	37	12
95th Queue (ft)	85	31
Link Distance (ft)	1583	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	181	466	408	175	91	185	216	257	231	42	38
Average Queue (ft)	22	234	103	52	38	79	89	131	35	5	9
95th Queue (ft)	112	402	270	116	76	160	176	238	123	25	31
Link Distance (ft)		865	865			386	386		1342	224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	300			300	200			250			60
Storage Blk Time (%)		5	0			0		1		0	0
Queuing Penalty (veh)		1	0			0		1		0	0

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	B12	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	T	L
Maximum Queue (ft)	131	153	196	204	131	269	280	324	546	561	15	152
Average Queue (ft)	22	71	114	100	44	134	146	71	134	332	1	53
95th Queue (ft)	74	132	193	193	100	222	237	184	416	553	11	116
Link Distance (ft)			885	885				660	660		156	
Upstream Blk Time (%)								0	1			
Queuing Penalty (veh)								0	2			
Storage Bay Dist (ft)	205	205			300	275	275			550		500
Storage Blk Time (%)		0	1			0	1		1	3		
Queuing Penalty (veh)		0	1			0	0		3	2		

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	660	1234	1236	440	232	314	378	404	41
Average Queue (ft)	180	641	649	278	137	152	217	230	8
95th Queue (ft)	536	1151	1170	584	231	260	361	376	25
Link Distance (ft)		2473	2473				3841	3841	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	500			280	300	300			250
Storage Blk Time (%)		14	26	0	1	1	2	7	
Queuing Penalty (veh)		21	91	0	3	5	6	5	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	87	23	150
Average Queue (ft)	30	37	2	20
95th Queue (ft)	54	64	15	78
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 551

V. 2040 Build SimTraffic Reports

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.3	0.3	0.0	0.0	0.2	4.0	1.0
Total Del/Veh (s)	10.6	1.6	4.0	4.4	8.5	0.5	4.9

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.7	4.1	5.5	1.7	11.9	3.9	6.5

3: 101st Ave N/Oak Grove Pkwy & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.6	0.3	0.0	4.0	1.8	20.9	0.2	6.9	4.5

4: CR 103 & Oak Grove Pkwy 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	1.8	0.2	0.1	2.6	0.4	0.5	0.0	0.0	0.0
Total Del/Veh (s)	35.3	31.7	4.3	35.0	36.2	4.3	14.3	9.7	12.5	20.3	13.1	7.4

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	15.2

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.6	0.1	0.0	3.4	0.7	0.6	0.1	0.0	0.1	0.2	0.0	0.2
Total Del/Veh (s)	24.3	24.0	15.3	68.5	27.0	22.3	6.5	2.1	1.5	3.1	3.2	1.3

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	16.3

6: CR 103 & 107th St N 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	0.2	0.0
Total Del/Veh (s)	5.9	5.0	9.4	3.0	3.4	0.6	0.4	3.2	3.3	2.4	3.0

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.4	0.1	0.4	0.3	0.4	0.2	0.0	0.1	3.0	0.8	3.0
Total Del/Veh (s)	30.5	43.1	7.0	34.8	36.2	5.5	28.8	12.1	7.2	16.5	17.6	4.8

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	26.0

8: Xylon Ln N & 109th Ave 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	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	4.1
Total Del/Veh (s)	32.9	26.9	5.6	31.0	22.8	12.2	14.9	0.8	4.9	16.6	14.9	2.8

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	18.7

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	9.3	4.8	8.5	0.3	0.0	0.0	2.0	0.4	1.9	164.6	161.7	174.5
Total Del/Veh (s)	85.2	180.5	321.4	85.8	58.5	29.1	105.7	48.0	14.7	261.7	244.6	218.1

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	91.3
Total Del/Veh (s)	170.0

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	WBL	WBT	WBR	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	0.0	0.0	0.0
Total Del/Veh (s)	8.1	7.2	9.5	1.6	7.8	4.5	1.0	1.2	5.5	1.3	1.5	2.0

Total Network Performance

Denied Del/Veh (s)	57.7
Total Del/Veh (s)	125.9

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	133	64	39	48	79	37	26
Average Queue (ft)	61	8	4	8	24	15	4
95th Queue (ft)	117	35	22	34	63	37	19
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	61	58	69	74	112	40	109	89	49
Average Queue (ft)	20	20	17	32	53	6	43	37	17
95th Queue (ft)	48	49	52	65	98	26	81	69	39
Link Distance (ft)		1082	1082	415	415		693	693	693
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: 101st Ave N/Oak Grove Pkwy & Xylon Ave

Movement	EB	WB	SB	SB
Directions Served	L	TR	LT	R
Maximum Queue (ft)	167	35	54	94
Average Queue (ft)	57	4	14	42
95th Queue (ft)	122	20	41	81
Link Distance (ft)	318	1892	1405	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	T	TR	L	T
Maximum Queue (ft)	122	69	72	63	102	165	112	95	112	408	130	148
Average Queue (ft)	43	31	25	31	38	89	25	33	43	126	44	65
95th Queue (ft)	86	60	56	57	83	151	67	72	92	258	95	119
Link Distance (ft)		322	322			1606	1606		965	965		568
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			250	320			300			350	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	SB
Directions Served	TR
Maximum Queue (ft)	198
Average Queue (ft)	93
95th Queue (ft)	165
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	400
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	R	L	T	R
Maximum Queue (ft)	38	128	212	334	77	11	39	6	4
Average Queue (ft)	3	44	124	98	32	0	6	0	0
95th Queue (ft)	18	97	233	354	67	5	26	4	5
Link Distance (ft)		1654		898				1402	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	150		160		100	310	110		310
Storage Blk Time (%)		0	22		0				
Queuing Penalty (veh)		0	13		0				

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	23	57	20	20
Average Queue (ft)	5	28	2	1
95th Queue (ft)	20	54	12	8
Link Distance (ft)	853	609		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	B18	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	T	T	L	T	R	L	T	R	L
Maximum Queue (ft)	212	402	85	288	23	175	301	52	69	69	37	128
Average Queue (ft)	24	253	28	30	1	55	134	15	23	20	5	47
95th Queue (ft)	112	443	67	149	17	134	246	36	56	51	22	99
Link Distance (ft)		314	314	386	386		4268			1209		
Upstream Blk Time (%)	0	10		0								
Queuing Penalty (veh)	0	28		0								
Storage Bay Dist (ft)	300					275		275	350		300	170
Storage Blk Time (%)	0	11					1					
Queuing Penalty (veh)	0	3					1					

Intersection: 7: CR 103 & 109th Ave N

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	283	65
Average Queue (ft)	129	13
95th Queue (ft)	257	41
Link Distance (ft)	1583	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)	6	
Queuing Penalty (veh)	12	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R
Maximum Queue (ft)	15	310	257	95	125	203	178	150	50	34	38
Average Queue (ft)	1	165	86	43	43	92	72	53	7	4	7
95th Queue (ft)	9	272	194	82	94	175	145	115	26	22	28
Link Distance (ft)		865	865			386	386		1342	224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	300			300	200			250			60
Storage Blk Time (%)		0				0				0	0
Queuing Penalty (veh)		0				0				0	0

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	L	T	T	R	L	L
Maximum Queue (ft)	62	196	852	886	375	262	274	90	87	194	112	349
Average Queue (ft)	8	48	311	504	332	133	151	32	36	82	32	74
95th Queue (ft)	33	129	746	1008	453	228	251	76	77	168	79	225
Link Distance (ft)			885	885				660	660			
Upstream Blk Time (%)			1	10								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	205	205			300	275	275			550	500	500
Storage Blk Time (%)		0	5	3	65	0	0					
Queuing Penalty (veh)		0	2	5	60	0	0					

Intersection: 9: TH 169 & 109th Ave N

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	655	710	440	204	375	3895	3888	450
Average Queue (ft)	390	382	138	107	244	3349	3348	116
95th Queue (ft)	586	596	412	186	458	4740	4721	422
Link Distance (ft)	2473	2473				3841	3841	
Upstream Blk Time (%)						20	13	
Queuing Penalty (veh)						0	0	
Storage Bay Dist (ft)			280	300	300			250
Storage Blk Time (%)	3	22				27	29	
Queuing Penalty (veh)	3	51				103	36	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	101	17	66
Average Queue (ft)	4	43	1	9
95th Queue (ft)	24	82	9	39
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 320

1: 101st Ave N & TH 169 SB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	3.7	0.2	0.0	0.0	0.2	4.0	0.5
Total Del/Veh (s)	10.1	0.8	5.0	5.8	9.3	0.5	4.6

2: 101st Ave N & TH 169 NB Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.2	0.1
Total Del/Veh (s)	10.2	7.0	15.3	2.2	13.2	5.5	11.7

3: 101st Ave N/Oak Grove Pkwy & Xylon Ave Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	1.2	0.2
Total Del/Veh (s)	3.4	1.3	0.0	2.8	1.4	16.5	5.6	20.5	0.9	7.4	4.1

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	51.4	30.7	15.0	2.4	0.5	0.4	3.2	0.8	0.5	0.0	0.0	0.0
Total Del/Veh (s)	370.1	53.0	30.8	53.0	27.8	5.0	102.7	138.7	101.5	47.4	46.6	30.1

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	All
Denied Del/Veh (s)	7.5
Total Del/Veh (s)	87.5

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.6	0.1	0.1	3.6	0.4	0.3	0.0	0.0	0.0	0.1	0.0	0.1
Total Del/Veh (s)	19.9	29.6	19.9	21.9	19.0	9.0	6.3	5.1	4.7	7.1	2.4	0.9

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	9.8

6: CR 103 & 107th St N 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	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.4	6.0	9.1	5.1	7.7	2.6	1.5	3.9	2.0	2.0	2.6

7: CR 103 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.3	0.0	0.3	0.3	0.4	0.1	0.0	0.1	3.3	0.6	3.2
Total Del/Veh (s)	38.2	32.2	2.7	37.1	39.6	12.3	21.4	20.0	9.4	44.3	16.7	5.5

7: CR 103 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	27.0

8: Xylon Ln N & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.4	0.1	0.4	0.0	0.0	0.0	2.3	0.6	0.5	0.1	4.3	0.6
Total Del/Veh (s)	19.8	30.9	5.7	26.9	19.8	14.1	22.8	14.9	6.4	12.4	6.2	21.2

9: TH 169 & 109th Ave N Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.4	0.4	3.5	38.2	39.7	50.2	73.1	73.8	76.5	1.2	0.4	1.1
Total Del/Veh (s)	72.4	107.4	39.6	102.7	74.2	208.1	193.8	169.1	148.2	148.4	30.7	10.3

9: TH 169 & 109th Ave N Performance by movement

Movement	All
Denied Del/Veh (s)	41.6
Total Del/Veh (s)	119.9

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Del/Veh (s)	9.0	9.4	4.1	8.6	8.1	5.1	3.2	1.4	1.0	4.9	2.5	3.6

10: Xylon Ave & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	3.6

Total Network Performance

Denied Del/Veh (s)	27.1
Total Del/Veh (s)	119.4

Intersection: 1: 101st Ave N & TH 169 SB

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	TR	L	R
Maximum Queue (ft)	61	39	46	62	108	42	31
Average Queue (ft)	27	4	4	7	25	12	4
95th Queue (ft)	55	20	22	35	76	34	21
Link Distance (ft)		848	848	1082	1082	713	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	220						270
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: 101st Ave N & TH 169 NB

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	T	T	R	L	L	R
Maximum Queue (ft)	43	79	80	135	165	37	169	212	96
Average Queue (ft)	14	20	32	63	87	5	64	107	42
95th Queue (ft)	39	54	71	111	142	24	124	174	77
Link Distance (ft)		1082	1082	415	415		693	693	693
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	570					220			
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 3: 101st Ave N/Oak Grove Pkwy & Xylon Ave

Movement	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LT	R
Maximum Queue (ft)	84	24	34	106	143
Average Queue (ft)	30	1	5	45	60
95th Queue (ft)	68	10	24	83	104
Link Distance (ft)	318	1892	489	1405	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				200	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	EB	EB	B23	B23	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	T	T	L	T	TR	L	T	TR
Maximum Queue (ft)	322	402	295	240	663	224	380	882	684	350	931	893
Average Queue (ft)	301	322	118	131	249	13	364	442	88	137	507	469
95th Queue (ft)	369	526	232	215	670	161	433	892	376	369	927	877
Link Distance (ft)		322	322		1892	1892		1606	1606		965	965
Upstream Blk Time (%)	43	60	0								3	2
Queuing Penalty (veh)	0	194	0								0	0
Storage Bay Dist (ft)	250			250			320			300		
Storage Blk Time (%)	80	3	0	0			29	0		0	44	
Queuing Penalty (veh)	72	6	0	0			6	0		0	34	

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	103	206	233
Average Queue (ft)	40	101	139
95th Queue (ft)	84	184	225
Link Distance (ft)		568	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		400
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	B22	B22	SB	SB
Directions Served	L	TR	L	TR	L	R	T		L	R
Maximum Queue (ft)	167	228	122	101	44	32	312	98	47	4
Average Queue (ft)	31	92	43	35	10	3	15	4	12	0
95th Queue (ft)	95	189	88	70	33	17	158	72	41	3
Link Distance (ft)		1654		898			568	568		
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150		160		100	310			110	310
Storage Blk Time (%)		7	0							
Queuing Penalty (veh)		3	0							

Intersection: 6: CR 103 & 107th St N

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	23	48	11	4	31
Average Queue (ft)	8	18	0	0	5
95th Queue (ft)	25	45	6	3	22
Link Distance (ft)	853	609		1402	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			250		250
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: CR 103 & 109th Ave N

Movement	EB	EB	EB	B18	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	T	L	T	R	L	T	R	L	T
Maximum Queue (ft)	313	397	57	330	85	322	156	98	339	68	229	166
Average Queue (ft)	152	266	14	39	24	169	44	33	139	21	86	55
95th Queue (ft)	322	442	40	181	63	279	105	75	285	55	175	130
Link Distance (ft)		314	314	386		4268			1209			1583
Upstream Blk Time (%)	0	9		0								
Queuing Penalty (veh)	0	34		0								
Storage Bay Dist (ft)	300				275		275	350		300	170	
Storage Blk Time (%)	0	10				1			1		4	0
Queuing Penalty (veh)	1	19				2			1		9	0

Intersection: 7: CR 103 & 109th Ave N

Movement	SB
Directions Served	R
Maximum Queue (ft)	50
Average Queue (ft)	16
95th Queue (ft)	38
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Xylon Ln N & 109th Ave N

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	
Directions Served	L	T	T	R	L	T	TR	L	TR	LT	R	
Maximum Queue (ft)	248	472	402	110	112	211	224	269	294	29	42	
Average Queue (ft)	27	228	108	48	39	91	95	148	44	4	10	
95th Queue (ft)	133	394	291	91	85	179	186	268	173	19	35	
Link Distance (ft)		865	865			386	386		1342	224		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	200			250			60	
Storage Blk Time (%)		5	0			1		2	0		0	
Queuing Penalty (veh)		1	1			0		2	0		0	

Intersection: 9: TH 169 & 109th Ave N

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	B12	B12
Directions Served	L	L	T	T	R	L	L	T	T	R	T	T
Maximum Queue (ft)	131	159	209	199	144	296	322	544	745	625	71	140
Average Queue (ft)	25	80	121	109	58	164	180	118	365	491	6	24
95th Queue (ft)	82	142	194	189	119	273	302	382	849	716	53	129
Link Distance (ft)			885	885				660	660		156	156
Upstream Blk Time (%)								1	17		0	7
Queuing Penalty (veh)								2	61		1	23
Storage Bay Dist (ft)	205	205			300	275	275			550		
Storage Blk Time (%)		0	1			2	5	0	4	29		
Queuing Penalty (veh)		0	1			1	4	1	13	22		

Intersection: 9: TH 169 & 109th Ave N

Movement	B11	B11	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	36	84	150	660	2522	2519	440	330	374	494	484	136
Average Queue (ft)	2	15	66	320	2054	2059	342	215	242	284	290	19
95th Queue (ft)	32	118	127	784	3146	3156	601	338	391	485	457	107
Link Distance (ft)	865	865			2473	2473				3841	3841	
Upstream Blk Time (%)					19	24						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (ft)			500	500			280	300	300			250
Storage Blk Time (%)					32	36		8	9	5	12	
Queuing Penalty (veh)					52	135		51	57	17	11	

Intersection: 10: Xylon Ave & Oxbow Creek Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	75	86	31	151
Average Queue (ft)	33	37	2	24
95th Queue (ft)	58	64	15	88
Link Distance (ft)	742	1654	1281	1855
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 838

VI. 2040 Build Mitigated SimTraffic Reports

4: CR 103 & Oak Grove Pkwy 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	2.3	0.2	0.1	2.6	0.4	0.5	0.0	0.0	0.0
Total Del/Veh (s)	35.9	32.5	4.6	35.6	36.2	3.5	14.4	10.0	10.9	20.1	12.8	7.1

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	14.5

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.1	0.0	3.7	0.7	0.7	0.1	0.0	0.2	0.2	0.0	0.1
Total Del/Veh (s)	23.0	31.8	8.8	40.1	26.0	8.3	17.7	6.0	2.0	7.7	8.6	2.7

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	14.6

Total Zone Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	692.0

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	T	R	L	L	T	TR	L	T	TR	L
Maximum Queue (ft)	107	61	67	64	34	85	174	92	94	124	250	100
Average Queue (ft)	40	28	24	32	5	36	91	26	29	42	111	42
95th Queue (ft)	88	55	55	59	23	69	150	73	68	91	206	85
Link Distance (ft)		322	322				1606	1606		965	965	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250			250	320	320			300			350
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	145	190
Average Queue (ft)	68	90
95th Queue (ft)	128	170
Link Distance (ft)	568	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		400
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	T	R
Maximum Queue (ft)	27	105	206	216	122	87	47	39	233	38
Average Queue (ft)	1	35	125	40	44	19	11	11	81	6
95th Queue (ft)	12	81	198	136	90	59	35	35	184	27
Link Distance (ft)		1654		898		2556			1402	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150		160		100		310	110		310
Storage Blk Time (%)		0	5		2	0			3	
Queuing Penalty (veh)		0	3		4	0			2	

Zone Summary

Zone wide Queuing Penalty: 9

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	6.0	4.5	4.4	2.4	0.6	0.4	3.0	0.4	0.3	0.0	0.0	0.0
Total Del/Veh (s)	123.2	45.8	17.6	49.2	37.9	6.7	34.9	42.0	23.5	32.3	31.2	17.1

4: CR 103 & Oak Grove Pkwy Performance by movement

Movement	All
Denied Del/Veh (s)	2.0
Total Del/Veh (s)	42.8

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.6	0.1	0.1	4.0	0.2	0.4	0.0	0.0	0.0	0.1	0.0	0.2
Total Del/Veh (s)	32.0	31.2	15.6	47.5	28.3	10.6	12.6	11.1	6.0	16.4	5.7	1.8

5: CR 103 & Oxbow Creek Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	14.1

Total Zone Performance

Denied Del/Veh (s)	3.0
Total Del/Veh (s)	1433.8

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	EB	EB	EB	EB	B23	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	R	T	L	L	T	TR	L	T	TR
Maximum Queue (ft)	286	318	239	190	74	350	378	504	62	253	440	391
Average Queue (ft)	197	134	87	95	16	256	281	50	30	45	222	181
95th Queue (ft)	323	334	189	163	114	358	377	215	57	132	359	326
Link Distance (ft)		322	322		1892			1606	1606		965	965
Upstream Blk Time (%)	8	8	0									
Queuing Penalty (veh)	0	25	0									
Storage Bay Dist (ft)	250			250		320	320			300		
Storage Blk Time (%)	19	2	0			1	4				4	
Queuing Penalty (veh)	17	3	0			0	1				3	

Intersection: 4: CR 103 & Oak Grove Pkwy

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (ft)	67	166	219
Average Queue (ft)	28	74	104
95th Queue (ft)	58	144	189
Link Distance (ft)		568	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	350		400
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: CR 103 & Oxbow Creek Dr

Movement	EB	EB	WB	WB	NB	NB	NB	B22	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	T	L	T	R
Maximum Queue (ft)	123	215	129	89	117	247	70	99	66	147	28
Average Queue (ft)	25	88	53	30	25	100	27	4	22	35	3
95th Queue (ft)	60	169	107	68	77	214	58	72	51	99	15
Link Distance (ft)		1654		898		2556		568		1402	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	150		160		100		310		110		310
Storage Blk Time (%)		2	0		0	5			0	1	
Queuing Penalty (veh)		1	0		0	13			0	0	

Zone Summary

Zone wide Queuing Penalty: 64

Attachment C

Shingle Creek/West Mississippi Watershed Management Commission Approval Letters

April 18, 2022

WEST MISSISSIPPI WATERSHED MANAGEMENT COMMISSION

PROJECT REVIEW WM2022-002: NorthPark Business Center Buildings 8-10 + Xylon Ext

Owner: Scannel Properties #488/489 LLC
Address: 8801 River Crossing Blvd, Suite 300
Indianapolis, IN

Engineer: Trisha Sieh
Company: Kimley Horn & Associates
Address: 767 Eustis Street, Suite 100
St. Paul, MN 55114
Phone: 612-643-0470
Fax:
Email: trisha.sieh@kimley-horn.com

Purpose: Construction of three office-warehouse buildings and new city street on approximately 50 acres.

Location: Northeast corner of Oxbow Creek Drive and Xylon Avenue in Brooklyn Park, MN (Figures 1a and 1b).

Exhibits:

1. Project review application and project review fee of $2,500, dated 3/11/2022, received 3/14/2022.
2. Site Development Plans (54 pages), by Kimley-Horn, dated 2/21/2022 and 3/9/2022, received 3/14/2022.
3. Storm and Site Plans (sheets C520-C524, C400, C410-C415; Figure 2), by Kimley-Horn, dated 3/18/2022, received 4/1/2022.
4. Proposed HydroCAD Model, by Kimley-Horn, dated 4/1/2022, received 4/1/2022.
5. Xylon Avenue Roadway, Utility and Storm Sewer Construction Plans (96 pages), by Kimley-Horn, dated 4/1/2022, received 4/1/2022.
6. Northpark Building VIII-X Drainage Memo (242 pages), by Kimley-Horn, dated 1/28/2022, received 3/14/2022.
7. Overall Drainage Exhibit, by Kimley-Horn, dated 4/1/2022, recd. 4/1/2022.
8. Geotechnical report, by AET, dated 11/16/2012, received 4/1/2022.

Findings:

1. The proposed project is the construction of three office-warehouse buildings and a new city street on approximately 34 acres. Following development, the site will be 76 percent impervious with 26 acres of impervious surface, an increase of 26 acres.
2. The complete project application was received on 3/14/2022. To comply with the 60-day review requirement, the Commission must approve or deny this project no later than the 5/12/2022 meeting. Sixty calendar-days expires on 5/13/2022.
2. To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead

storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 85% TSS removal and 60% TP removal. Infiltrating 1.3-inches of runoff, for example, is considered sufficient to provide a similar level of treatment. If a sump is used the MnDOT Road Sand particle size distribution is acceptable for 80% capture.

Runoff from the site is proposed to be routed to four wet ponds and one infiltration basin. The 200-acre Northpark Business Center is landlocked, so all runoff is infiltrated on-site, including back-to-back 100-year events.

3. Commission rules require that site runoff is limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The applicant proposes to manage all runoff on-site. The applicant meets Commission rate control requirements (Table 1).

Table 1. Runoff from site (cfs).

Drainage Area	2-year event		10-year event		100-year event	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
Entire site	0	0	0	0	0	0

4. Commission rules require the site to infiltrate 1.0 inch of runoff from new impervious area within 48 hours. The new impervious area on this site is 26 acres, requiring infiltration of 2.2 acre-feet within 48 hours. The applicant proposes to infiltrate all runoff onsite due to highly permeable soils that have the capacity to infiltrate more than the required volume within 48 hours. The applicant meets Commission volume control requirements.

5. The erosion control plan includes rock construction entrances, sediment traps during construction, perimeter silt fence, inlet protection, rip rap at pond inlets, and native seed specified on the pond slopes. The erosion control plan meets Commission requirements.

6. The National Wetlands Inventory does not identify any wetlands on site. The applicant meets Commission wetland requirements.

7. There are no Public Waters on this site. The applicant meets Commission Public Waters requirements.

8. There is no FEMA-regulated floodplain on this site. The applicant meets Commission floodplain requirements.

9. In a telephone conversation on 5/29/14 between Erik Megow of Wenck Associates and Dan Bowar of EVS Engineering, Mr. Bowar had stated that there is no known groundwater contamination on the project site. The site is located in a Drinking Water Supply Management Area (DSWMA); however, it is outside the emergency response area.

10. A public hearing on the project was conducted in October 2021 as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.

11. An Operations & Maintenance (O&M) agreement between the applicant and the City of Brooklyn Park was submitted and executed for previously constructed stormwater ponds and basins. A new agreement maintenance plan has been submitted for Buildings 8-10.

12. A Project Review Fee of $2,500 has been received.

Recommendation: Approve subject to the following conditions:

1. Create and submit a one- or two-dimensional unsteady runoff and hydraulic model (i.e., XP-SWMM, PC-SWMM, EPA-SWMM) for the Northpark Business Center. The current HydroCAD model routing methods do not accurately predict reverse flow conditions, which does not allow for accurate calculation of high water levels.
2. The Commission advises Scannel Properties to complete a chloride management plan and use the attached information from the Nine Mile Creek Watershed District as a guideline. Template-Chloride-Management-Plan_Final.pdf (ninemilecreek.org)

Wenck Associates, Inc.
Engineers for the Commission

_____

Todd Shoemaker, P.E. Date

Figures 1a and 1b. Site location.

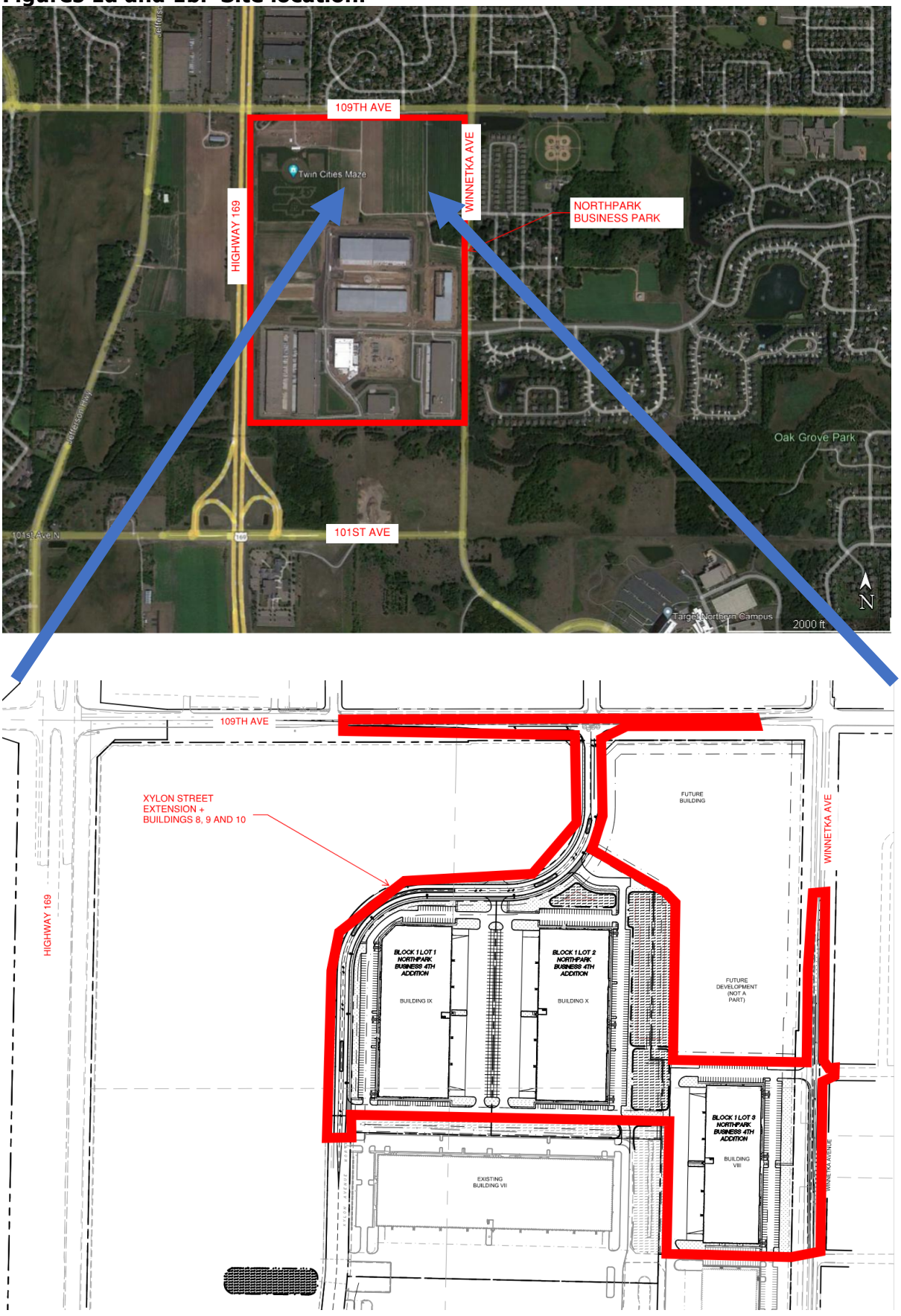
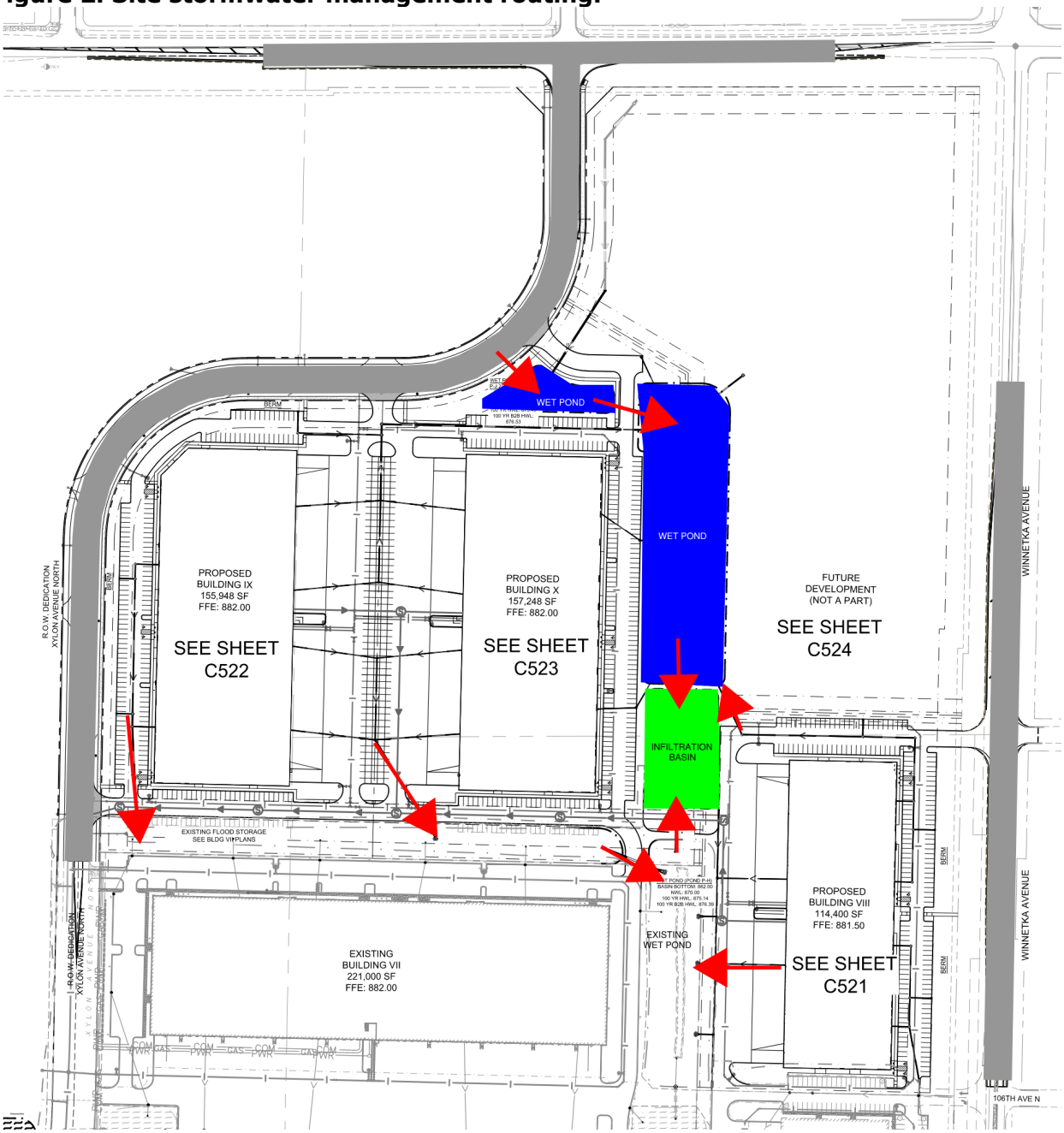


Figure 2. Site stormwater management routing.



SHINGLE CREEK WATERSHED MANAGEMENT COMMISSION

PROJECT REVIEW WM2022-04: Northpark Business Center Building XI

Owner: Scannell Properties
Company: Scannell Properties #500 LLC
Address: 8801 River Crossing Blvd, Suite 300

Engineer: Trisha Sieh,
Company: Kimley-Horn and Associates, Inc.
Address: 767 Eustis Street, Suite 100 St. Paul, MN 55114

Phone: 651-643-0470
Email: trisha.sieh@kimley-horn.com

Purpose: Construction of an office-warehouse building and accompanying parking on 16.3 acres.

Location: Lot 4 and 5 Block 1, Southwest corner of 109th Ave and Winnetka Ave (Figure 1).

Exhibits:

1. Project review application and project review fee of $2500, dated 7/26/22, received 7/27/22.
2. Site plan, preliminary plat, grading (Figure 2), utility, and landscaping plans, by Kimley-Horn, dated 7/20/22, received 7/26/22.
3. Drainage Memo, by Kimely-Horn, dated 7/19/22, received 7/26/22.
4. PCSWMM Model, by Kimley-Horn, dated 7/20/22, received 7/26/22.

Findings:

1. The proposed project is the construction of a 197,000 SF office-warehouse building. The site is 16.3 acres. Following the development, the site will be 80 percent impervious with 13.1 acres of impervious surface, an increase of 13.1 acres.
2. The complete project application was received on 7/26/22. To comply with the 60-day review requirement, the Commission must approve or deny this project no later than the 9/8/22 meeting. Sixty calendar-days expires on 9/24/22.
3. To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 85% TSS removal and 60% TP removal. Infiltrating 1.3-inches of runoff, for example, is considered sufficient to provide a similar level of treatment. If a sump is used the MnDOT Road Sand particle size distribution is acceptable for 80% capture.

   Runoff from the site is proposed to be routed through two NURP ponds in series with two infiltration basins. The applicant meets Commission water quality treatment requirements.
4. Commission rules require that site runoff is limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The site is landlocked

with no outflow. The applicant meets Commission rate control requirements.

5. Commission rules require the site to infiltrate 1.0 inch of runoff from new impervious area within 48 hours. The new impervious area on this site is 13.1 acres, requiring infiltration of 1.1 acre-feet within 48 hours. The applicant proposes two infiltration basins. The applicant proposes to infiltrate all runoff onsite due to highly permeable soils that have the capacity to infiltrate more than the required volume within 48 hours. The applicant meets Commission volume control requirements.

6. An erosion control plan was not provided with civil plans. The erosion control plan does not meet Commission requirements.

7. The National Wetlands Inventory does not identify any wetlands on site. The applicant meets Commission wetland requirements.

8. There are no Public Waters on this site. The applicant meets Commission Public Waters requirements.

9. There is no FEMA-regulated floodplain on this site. The low floor elevations of the buildings are at least two feet higher than the high water elevation of the detention ponds/infiltration basins according to Atlas 14 precipitation. The applicant meets Commission floodplain requirements.

10. In a telephone conversation on 5/29/14 between Erik Megow of Wenck Associates and Dan Bowar of EVS Engineering, Mr. Bowar had stated that there is no known groundwater contamination on the project site. The site is located in a Drinking Water Management Area, but is outside of the Emergency Response Area. Therefore, infiltration is permitted, but infiltrated water must first filter through 1 foot of soil, the top four inches of which are amended topsoil, and the bottom 8 inches of which are tilled. The applicant has not specified how they will meet the requirement. The applicant does not meet Commission drinking water protection requirements.

11. A public hearing on the project was conducted in October 2021 as part of the Planning Commission and City Council review of this project, meeting Commission public notice requirements.

12. An Operations & Maintenance (O&M) agreement between the applicant and the City of Brooklyn Park was submitted and executed for previously constructed stormwater ponds and basins.

13. A Project Review Fee of $2500 has been received.

Recommendation: Recommend table subject to the following conditions:

1. Revise sheet 39 for North Xylon phase plans to include the pretreatment device to be installed in MH-114. The narrative suggests a pretreatment device for MH-114, but it is not included in the Building XI plans. Provide a detail of the device to be installed in MH-114.

The North Xylon Avenue North phase plans show MH-114 in various locations. On sheet 39, the pretreatment sump and Safl Baffle for MH-114 are shown in the profile. On sheet 10, the construction details and requirements of the Safl Baffle are highlighted. On sheet 47, the drainage tabulation shows MH-114 as a 3ft sump, 48"W by 36"H Safl Baffle. The Xylon Avenue North phase plans are reattached separately to this submittal.

2. Provide OCS details for Pond P-I and P-I.2

An OCS detail for OCS-38 is provided in this submittal on sheet 530. This is the only OCS structure in this phase of construction and connects P-I with P-I.2.

3. Revise I-J.2 plans or model to match. Plans show a volume of 0.2 ac-ft of storage below the low outlet of 871', but the drainage report lists 2.3 ac-ft.

Drainage report lists 2.3 ac-ft of infiltration volume. This is represented as the storage in I J.2. The northern portion of Xylon Avenue is allowed to discharge directly into I-J.2 after passes through a structural pretreatment device. Wet pond P-I can discharge to either to I-J.2 or I-H to infiltrate runoff after pretreatment.

4. Revise the PCSWMM model to reflect infiltration for I-J.2. The narrative states a pump will be used to model infiltration basins, but a pump is not used for I-J.2 in the submitted PCSWMM model.

The PCSWMM model has been updated to include a pump node to model I-J.2 as an infiltration basin.

5. Revise the drainage area map. The current utility plans for Buildings VIII-XI show a significant portion of the drainage area for pond P-I is routed to the new pond P-I.2, but it is not reflected in the submitted drainage map (Exhibit 1).

Exhibit 1 has been updated to reflect the proposed drainage patterns

6. Provide an erosion control plan for the site. The erosion control plan should include:
   a. rock construction entrance(s), perimeter silt fence/biolog, silt fence surrounding detention ponds/infiltration basins, inlet protection, rip rap at inlets, slope checks.

Included in Resubmittal Package

7. Provide a cross-section detail for Infiltration basin I-J.2. The detail should specify:
   a. Excavation of infiltration areas shall be completed using a backhoe with a toothed bucket. Where possible, excavation shall be done from the sides and outside the footprint of the infiltration area to avoid soil compaction.
   b. Native soils in infiltration areas shall be de-compacted to a minimum depth of 18 inches below the subgrade.
   c. Contractor shall not compact the subgrade beneath the infiltration system.
   d. Surface infiltration systems shall not be excavated to final grade until the contributing drainage area has been constructed and fully stabilized.
   e. Specify that the top four inches of the infiltration basin soil include amended topsoil and the bottom 8 inches are tilled.

An infiltration basin cross section is included within this submittal on sheet 530 with the above notes as part of construction. Specific water level and depth can be found on sheet 520 within the basin outline of I-J.2.

8. Confirm existing O&M agreement includes the new basin P-I.2.

The existing O&M agreement includes the new basin P-I.2.

9. Demonstrate by double ring infiltrometer or witness test that basin I-J.2 can meet the design infiltration rate of 6.7 inches/hour.

A double ring infiltrometer test will be performed on site during field construction to ensure compliance.

Wenck Associates, Inc.
Engineers for the Commission

Todd Shoemaker, P.E. 08/04/22

WM2022-004: Northpark Building XI

Figure 1. Site location.

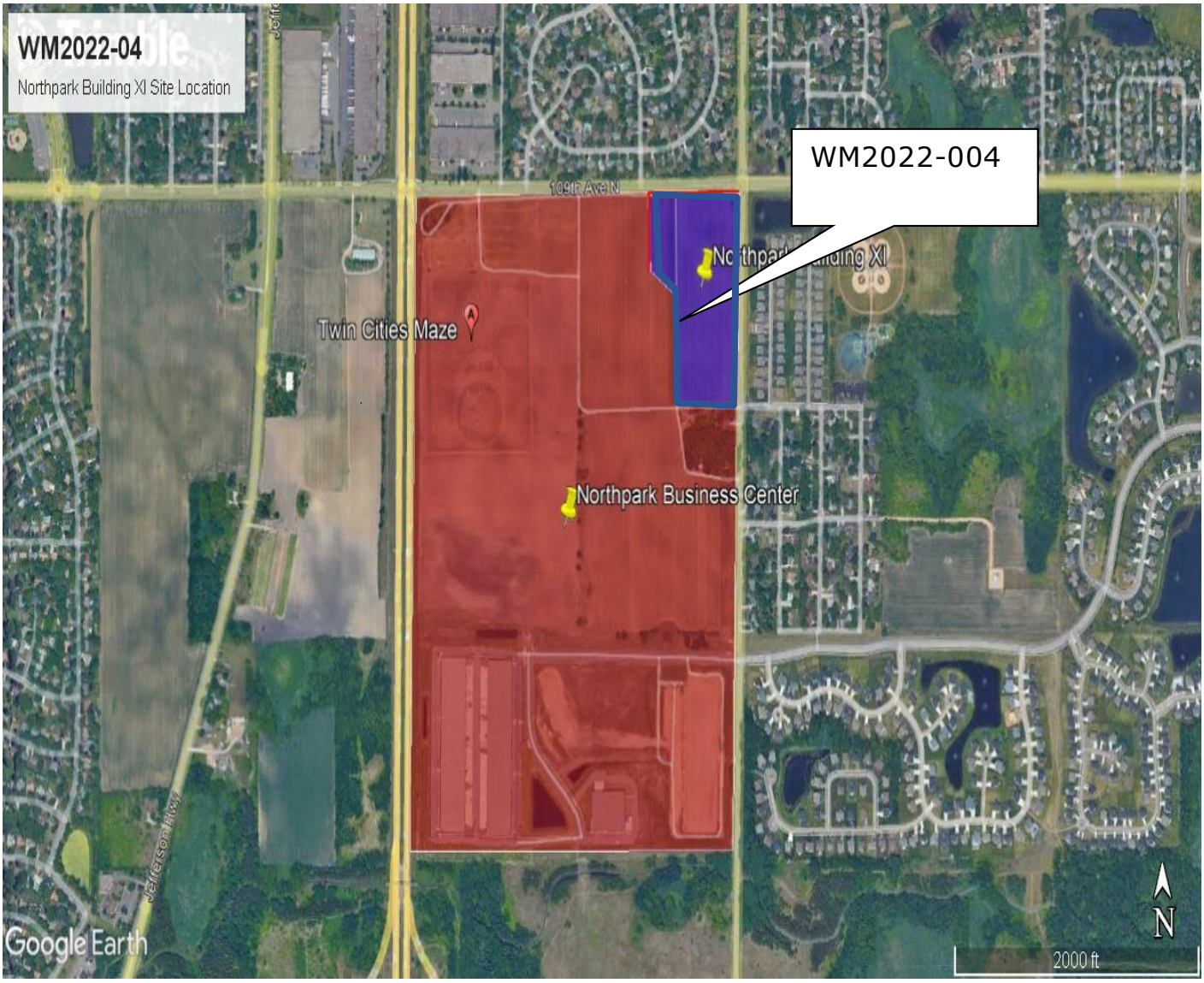
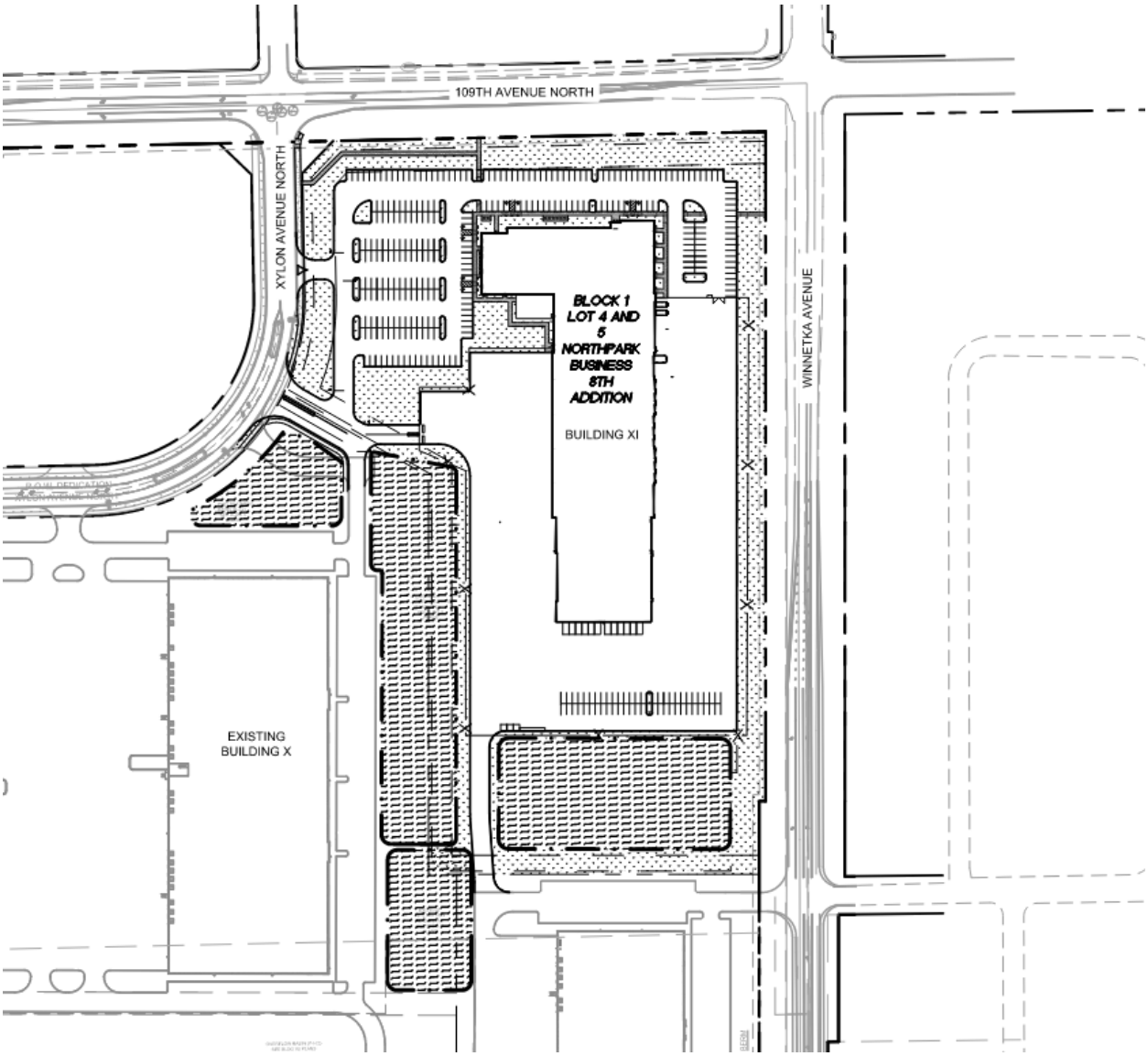


Figure 2. Site grading plan.



Attachment D

Comments and Response to Comments on the
2024 AUAR Update

1. City of Champlin

Comment	Response
Eight business days is not adequate time to review the report's contents and impacts outlined in the 200-page document. The City of Champlin respectfully requests additional time to review the findings and assess the impacts outlined in the report. Tabling approval would support our efforts.	The City of Brooklyn Park extended the comment period following the request by the City of Champlin. The City Council meeting for the AUAR Update adoption will take place on May 28, 2024.
The AUAR update focuses on remaining development acreage (32.5 acres) located in the northwest corner of the site. The AUAR establishes a new development scenario (Scenario D) for analysis, including an anticipated 140,000 square feet of commercial development. The City of Champlin does not support Scenario D for the following reasons: 1) Extensive commercial/retail uses would adversely impact and potentially suffocate existing retail facilities in Champlin, specifically Super Target and Cub Foods and other smaller retailers just a short distance away. 2) The traffic generated by the commercial uses would add excessive traffic volumes on 1091h Avenue and exacerbate an already overburden intersection at TH 169/109th Avenue even with planned improvements. 3) Extending the commercial acreage to the east creates potential public nuisances and negative externalities to residential neighborhoods directly north of 109th Avenue. Those externalities include noise, trash/debris and light spillage. 4) Champlin contends that 140,000 square feet of commercial development is not in the "spirit" of the property's Business Park land use designation. The Business Park use designation, per Brooklyn Park's 2040 Land Use Plan, supports "Office, business, research and development, limited light industrial, limited retail, research and development, warehousing and distribution as part of a master plan." 140,000 square feet of commercial development, by most accounts, would be considered significant and more	Comment noted. Scenario D will remain as it is proposed in the AUAR Update as this is consistent with the City of Brooklyn Park 2040 Comprehensive Plan future land use plan. The 140,000 SF of commercial space is likely to generate more traffic than industrial space in this area. However, the commercial generation is a small component of the overall site generation and the generated traffic from the site as a whole is expected to be significantly less than what was envisioned in 2013 and 2018 and used to identify mitigation measures. The commercial component will not change the design of 109th Avenue. The intersection of TH 169 / 109th Ave is currently congested during the AM and PM peak hours and is expected to worsen over time with or without the development. A significant amount of the commercial generation is expected from traffic that is already using 109th Ave and TH 169 (pass-by) and internally linked trips from the industrial uses within the site (internal).

Comment	Response
regional. As such, Champlin recommends a greatly reduced commercial component and more Business Park type uses in the Northwest portion of the site.	
The Cities of Champlin and Brooklyn Park are coordinating on the design and ultimate reconstruction of 109th Avenue. The consulting engineers (WSB & Associates) used trip generation from a 2022 Kimley Horn study, which shows 492,000 square feet of industrial park development for the northwest area of the business park to complete the ICE reports for 109th Avenue. It should be noted that the land use assumption with the 2022 Kimley Horn Memo had been industrial. The trip generation numbers for the 140,000 square feet of commercial/retail proposed in the AUAR update are about 20 percent higher in the AM peak and about 250 percent higher in the PM peak than the previous scenario that was all industrial park. We're still reviewing what that may mean for signal level of service (LOS) with this proposed scenario, but early indications are that there are impacts in level of service, wait times and queuing lengths.	The 2022 traffic analysis was updated in 2024 by Kimley-Horn for the AUAR Update scenarios and is the latest traffic report to reference for future development and related projects. Key city staff members from Brooklyn Park and Champlin, WSB and Kimley Horn all met in late April 2024 to discuss the traffic effects of the commercial development. The parties agreed the design answer for 109th Avenue does not change and that some movements at the TH 169 / 109th Ave intersection may experience slightly more delay or queuing.

2. Hennepin County

Comment	Response
General	
The AUAR refers to Winnetka Avenue as CSAH 103 and CR 103 interchangeably. The AUAR should be updated to reflect Winnetka Avenue as CSAH 103 throughout the document.	Comment noted. The AUAR update has been updated to reflect Winnetka Avenue as CSAH 103.
Section 3.2.2. Water Quality	
Please confirm whether the water quality and stormwater runoff has been reviewed and approved by the local watershed management organization. If approval is needed, the letter or approval or the completed permit should be included in the appendix.	This has been added as a mitigation item to **Table 7.** Approval letters from the Shingle Creek/West Mississippi Watershed Management Commission for buildings 8-11 of the

Comment	Response
	development have been added to the attachments.
Attachment B NorthPark Business Center Traffic Analysis Report	
Section 4.2 Future Traffic Forecasting **2040 No-Build Volume Development** Please confirm whether all buildings were in use when the daily traffic generation forecasts data was collected for the updated traffic volumes.	See **Table 2** in the Traffic Study attachment of the AUAR update. Most buildings are fully occupied but two (2) buildings totaling 277,000 SF were completed recently and were not in use. Trips to these buildings were considered when developing the 2028 No-Build traffic volumes.
Section 5.3 Existing Conditions Level of Service Analysis **Table 9** Please update Table 9 to include intersections that the AUAR lists as mitigation no longer needed, including Winnetka Avenue (CSAH 103) and 114th Avenue, Winnetka Avenue, north of TH 610 and south of Oak Grove Parkway.	These intersections were studied in the traffic study for the 2018 AUAR but were not included in the scope of the 2023 AUAR Traffic Study due to the anticipated impacts being lower than was initially anticipated.
Section 5.6 Year 2028 Mitigation Level of Service Analysis **Table 13** Please confirm which leg of the Winnetka Avenue and Oxbow Creek Drive intersection has a LOS E as this will impact mitigation measures.	The westbound left turn movement operates at LOS E in this scenario during the AM Peak period.
Section 5.9 Year 2040 Mitigation Level of Service Analysis **CSAH 103 & Oxbow Creek Drive** County staff recommend completing a traffic signal warrant analysis for the Winnetka Avenue and Oxbow Creek Drive intersection. The results of the analysis should be included in the AUAR update.	Since this mitigation is recommended as a long-term (2040) improvement, it is recommended that this warrant analysis should be completed further in the future, possibly in conjunction with the completion of the BLRT project.
CSAH 103 & Oak Grove Parkway Please review mitigations proposed. Oak Grove Parkway has dual left turn lanes. Please confirm whether the analysis reflects both the development as well as the BLRT.	Two left turn lanes currently exist but the proposed layout for the BLRT project shows only one. A more detailed analysis utilizing Vissim for multi-modal consideration is being conducted

Comment	Response
	at this intersection as part of the BLRT Traffic Study.
Section 6.2 Trip Generation & Traffic Development The text states that overall trip generation is anticipated to be lower than shown in the 2018 and 2013 AUAR traffic analyses. Please include a table confirming these values. Please provide context explaining why the AM and PM peak hours have less trips anticipated. Also please confirm whether buildings were occupied and in use for the analysis and the percentage of vacant buildings.	See **Tables 5 and 6** of the Traffic Study attachment of the AUAR update. Added text references to those tables for clarity purposes.
Section 6.7 Mitigation Plan **2021 No-Build Conditions (Recommendations for the 2018 AUAR)** The Winnetka Avenue and 114th Avenue northbound left-turn lane is identified as a mitigation needed, but the intersection was not included in the Intersection Analysis (page 11). The intersection analysis should be incorporated into the updated AUAR and include necessary mitigation measures.	This intersection was studied in the traffic study for the 2018 AUAR but was not included in the scope of the 2023 AUAR Traffic Study due to the anticipated impacts of the project being lower than was initially anticipated.
2021 Build Conditions (Recommendations for the 2018 AUAR) The BLRT project and related impacts should be included in in Table 6 in the main document of the AUAR.	The BLRT Traffic study is currently ongoing, and the full extent of its impacts are not yet known.

3. Metropolitan Council

Comment	Response
Transportation	
The AUAR Mitigation Summary notes an in-progress Travel Demand Management (TDM) plan for the site. The TDM plan should consider future nearby transit service, specifically the planned Oak Grove Parkway Blue Line LRT station to be located at County Road 103 and Oak Grove Parkway. This station area should be accessible to the AUAR site with non-motorized connections to enable employee access to the site from the future Blue Line LRT service.	Comment noted. The City and the Northpark Developer have constructed Xylon Avenue from 101st Avenue to 109th Avenue with pedestrian accommodations on both sides. This work also included construction of a new grade separation at the Xylon Avenue / Rush Creek Regional Trail (RCRT) junction. The City is working with Hennepin County and the Met Council to upgrade the roadway system in the Oak Grove (end of planned BLRT line) Parkway Station area to include pedestrian accommodations along both sides of all roadways, including 101st Avenue between CSAH 103 and TH 169. The City is also working with Hennepin County to construct a new grade separation of CSAH 103 at the RCRT junction. This work coupled with the BLRT project work will result in multiple pedestrian connections between Northpark Business Center and the BLRT Oak Grove Station Area. Lastly, the City and Hennepin County are planning to add pedestrian accommodations along both sides of CSAH 103 from the RCRT to 109th Avenue in the future as CSAH 103 is reconstructed.

Comment	Response
Forecasts	
The development scenarios from 2018 include 3.0 million to 4.1 million square feet of mostly industrial/office/warehousing space. Scenario C adds a high-density residential development as well. The 2024 AUAR Update adds a new Scenario D that recognizes the AUAR area is now mostly developed. Scenario D includes 2.6 million square feet of mostly industrial/office/warehousing space and no residential uses. The Council may need to adjust Transportation Analysis Zone (TAZ) forecast allocations. TAZ forecasts were included in the City's 2040 Comprehensive Plan. The City expects TAZ #845 to gain +970 households, +2,600 population, and +2,570 jobs (employment) during 2020-2040. TAZ #845 expands from the City's northern boundary to Highway 610. If Scenarios A or B are pursued, the Council finds the households and population allocations in TAZ #845 can be lowered, and the difference re-allocated to other parts of Brooklyn Park. If Scenario D is pursued, the households, population and employment allocations in TAZ #845 can be lowered. These adjustments are being deferred until a later time.	Comment noted. The City will coordinate with the Metropolitan Council to modify TAZ allocations, if needed.
Climate	
Metropolitan Council staff encourages the project proposer to explore using native plants and trees to reduce the stormwater runoff from the development and minimize impervious surfaces' contribution to the urban heat island effect.	Comment noted.
Council staff also encourages the project proposer to consider utilizing EV ready design to facilitate the transition to electric vehicles and help offset the greenhouse gas emissions from the proposed commercial development and motor vehicle fuel station covered by the AUAR update.	Comment noted.

4. Minnesota DNR

Comment	Response
Section 3.2.2. Water Quality	
Water Quality – Stormwater Runoff. The project area is located within a Wellhead Protection Area and a Drinking Water Supply Management Area that is extremely sensitive to pollution due to the excessively drained sandy soils in the area. The planned increase in impervious surfaces will also increase the amount of road salt used in the project area. Chloride released into local lakes, streams, and groundwater does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. 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 encourage the City of Brooklyn Park to consider requiring that developments significantly increasing impervious surfaces develop a chloride management plan that outlines what BMP's and strategies will be used to reduce chloride use within the project area and include this plan within Operations and Maintenance Agreements. 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.	Comment noted.

Comment	Response
Section 5. Mitigation Summary and Update	
Please note that a Natural Heritage Review to determine if a project is likely to impact state-listed species is only considered current for 12 months because the Natural Heritage Information System (NHIS) is constantly being updated as we obtain more data regarding rare features. Therefore, a new query of the NHIS database is necessary to determine if the remaining project yet to be completed is likely to impact state-listed species that are protected by law. This may be done using a current NHIS license or by submitting the project to https://mce.dnr.state.mn.us/ Please be aware that the status of some federally-listed species has changed since 2018. To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish & Wildlife Service's online Information for Planning and Consultation (IPaC) tool.	A review of the NHIS database (LA 1074) was completed and a natural heritage review request was submitted to the DNR in March 2024.
We recommend that the developer utilize native, pollinator-friendly vegetation in landscaping and stormwater ponds as much as possible. The Board of Water and Soil Resources' Lawns to Legumes website has many excellent resources related to selecting seed mixes and establishing pollinator habitat. Please also see this statewide Pollinator Plan and consider how the City of Brooklyn Park can incorporate pollinator-friendly practices and ordinances into local projects. Stormwater features provide an excellent opportunity to replace standard turf with a diverse plant mix that provides greater wildlife and water quality benefits.	Comment noted. Incorporation of pollinator-friendly vegetation and landscaping will be evaluated in further design stages.
Please note that a DNR Water Appropriation Permit is required if the water pumped exceeds 10,000 gallons in a day, or one million gallons in one year. The DNR General Permit for Temporary Appropriation, with its lower permit application fee and reduced time for review, may be used for the dewatering if the dewatering volume is less than 50 million gallons and the time of the appropriation is less than one year.	A DNR Water Appropriation Permit has not been required for the development to date. The permit will be applied for if water appropriation exceeds the threshold amount.

5. Minnesota Department of Transportation (MnDOT)

Comment	Response
A drainage permit will be necessary for this development. There is a known flooding and capacity issue to the north. The drainage permit will need to demonstrate that the new development will not make the drainage issue worse. Any projects adjacent to MnDOT ROW or connecting to MnDOT drainage facilities will require a MnDOT drainage permit to ensure that current drainage rates to MnDOT right-of-way will not be increased. The drainage permit application, including the information below, should be submitted online to: https://dotapp7.dot.state.mn.us/OLPA/. The following information must be submitted with the drainage permit application: 1) A grading plan showing existing and proposed contours. 2) Drainage area maps for the proposed project showing existing and proposed drainage areas. Any off-site areas that drain to the project area should also be included in the drainage area maps. The direction of flow for each drainage area must be indicated by arrows. 3) Drainage computations for pre and post construction conditions during the 2, 10, 50 and 100 year rain events. 4) Time of concentration calculations. 5) An electronic copy of any computer modeling used for the drainage computations. 6) See also the attached Drainage Permits Checklist for more information. Once a drainage permit application is submitted, a thorough review will be completed and additional information may be requested. Water Resources Engineering will work with the applicant to ensure acceptable outlets to the ROW. MnDOT Metropolitan District, Waters Edge Building, 1500 County Road B2 West, Roseville, MN 55113 Please direct questions concerning drainage issues to Jason Swenson, MnDOT Metro Water Resources at 651-234-7539 or Jason.Swenson@state.mn.us.	Comment noted. A drainage permit will be submitted for future development.

Comment	Response
In addition to any permits mentioned above, any use of, or work within or affecting, MnDOT right of way will require a permit. Permits can be applied for at this site: https://olpa.dot.state.mn.us/OLPA/. Please upload a copy of this letter when applying for any permits. Please direct questions regarding permit requirements to Buck Craig of MnDOT's Metro Permits Section at 651-775-0405 or Buck.Craig@state.mn.us.	Comment noted.

6. US Army Corps of Engineers

Comment	Response
Hello, The Corps of Engineers St. Paul District Regulatory Division (the Corps) recently received a request for an Alternative Urban Areawide Review (AUAR) for the Northpark Business Center. Our office is committed to efficient, helpful service. It is unclear if your project will have impacts to jurisdictional waters. If your project will have impacts to aquatic resources, please submit a permit application with the impacts clearly identified and we can assist you through our permit review process if authorization is required. You may also request a pre-application meeting to discuss your project prior to submitting a permit application. You can find more information on our permit program and our joint application here: https://www.mvp.usace.army.mil/Missions/Regulatory/Permitting-Process-Procedures/. *Be sure to select the pre-application box on the joint application. Please note this recommendation is only pertaining to the Corps process and does NOT indicate whether a review is required from the state or local authorities. If we do not receive a response from you within 3 business days we will assume nothing further is needed from our office.	Comment noted, thank you for your review.

7. Public Comments

Comment	Response
Johnny Hoang	
According to the Northpark AUAR updates there will be a significant amount of traffic on Winnetka with a potential of 19,900 daily trips. We along with approximately 300 households live to the immediate east of Winnetka (CR 103.) There have been multiple accidents on this road within the past couple years since the completion of Northland Business Park. Are there any plans for traffic and accidents mitigation at CR 103 on Oxbow Creek? According to MnDOT studies, having a round-a-bout significantly reduces congestions and accidents. If that is not feasible, a stop light would be a much safer at controlling traffic than the current stop sign.	See **Exhibit 15** of the Traffic Study. A traffic signal is being proposed as a long-term mitigation at this intersection due to poor side-street operations which are anticipated in the future. Alternative forms of traffic control such as all-way stop or roundabouts could also be considered, pending further analysis. The February 2024 Northpark Business Center AUAR Update includes Table 3, which shows the previously (2018) expected amount of vehicle trips (19,900 daily) to and from the Business Center under a certain land use development scenario (B) for the Center. This scenario is no longer valid and included roughly 4 million square feet of development within the center. The current estimate of total development is approximately 2.6 million square feet, which results in significantly less traffic generation to and from the site (see Table 5 of the AUAR update). Please note the traffic generation numbers documented in Table 5 do not mean all of the traffic to and from the site will use Winnetka Avenue. The vast majority of site traffic is expected to use Xylon Avenue and access Highway 169 via the new interchange. The city required the development to pay for the construction of all roadways within the Center (including Xylon Avenue and Oxbow Creek Drive west of Winnetka Avenue), the left and right turning lanes on Winnetka Avenue and 109th Avenue and a portion of the interchange costs. Please see the expected directional orientation of traffic to and from the site (Exhibit 4) of the Traffic Impact Study appended to the AUAR. The data indicate only 10% of the site traffic to and from the Center is expected to use Winnetka Avenue south of Oxbow Creek Drive, which will bring the total traffic demand on Winnetka Avenue from roughly 7,000 vehicles per day to 9,000 vehicles per day. Winnetka Avenue is currently a two lane arterial roadway designed to accommodate up to 12,000 vehicles per day, including some heavy truck traffic.

Comment	Response
	The crash data show there have been 10 reported vehicle crashes at the Winnetka Avenue / Oxbow Creek Drive intersection over the past five years. This equates to a crash rate of 0.61 crashes per million vehicles entering the intersection. This rate is slightly higher than an average rate for four legged intersections with side street stop control. However, it is not indicative of a crash problem. The signalized intersection of Douglas Drive and Oxbow Creek Drive also has a crash rate higher than the average rate. The plan for this intersection is to continue to monitor and install a traffic signal when the conditions meet the requirements of the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) and a signal is allowed by the County. Note that Hennepin County owns, operates and maintains Winnetka Avenue as County State Aid Highway #103 and the current traffic volumes and recent crash experience at the intersection does not meet the requirements of the MMUTCD to allow for a signal to be installed. If you or your neighbors do not feel comfortable turning left from Oxbow Creek Drive to go south on Winnetka Avenue during peak traffic demand periods, then I would encourage you to consider either turning right onto northbound Winnetka Avenue, left onto 109th Avenue and then left at either Xylon Avenue or Highway 169 or diverting to the Douglas Drive / Oxbow Creek Drive intersection. For your information, please know Hennepin County will be overlaying and restriping Winnetka Avenue between 101st and 109th Avenues this summer, so the pavement conditions should significantly improve and the striping should be more consistent in this segment, including the Oxbow Creek Drive intersection. The City, County and Three Rivers Park District are also planning to upgrade the Rush Creek Regional Trail crossing of Winnetka Avenue to a grade separation (trail underpass) in 2025.

City of Champlin

11955 CHAMPLIN DRIVE, CHAMPLIN, MN 55316-2399 • (763) 421-8100 • ci.champlin.mn.us

April 19, 2024

Paul Mogush
City of Brooklyn Park
5200 - 85th Avenue
Brooklyn Park, Minnesota 55443

RE: AUAR Update Comments
North Park Business Park

Dear Mr. Mogush:

On April 8, 2024, the City of Champlin received notice of a public hearing scheduled for April 22nd in review of the 200-page Alternative Urban Areawide Review (AUAR) study update for NorthPark Business Center. The Champlin City Council meets on Monday, April 22nd and, therefore, staff cannot attend said public hearing; however, we offer the following comments to be entered into the record:

1. Eight business days is not adequate time to review the report's contents and impacts outlined in the 200-page document. The City of Champlin respectfully requests additional time to review the findings and assess the impacts outlined in the report. Tabling approval would support our efforts.

2. The AUAR update focuses on remaining development acreage (32.5 acres) located in the northwest corner of the site. The AUAR establishes a new development scenario (Scenario D) for analysis, including an anticipated 140,000 square feet of commercial development. The City of Champlin does not support Scenario D for the following reasons:

    1) Extensive commercial/retail uses would adversely impact and potentially suffocate existing retail facilities in Champlin, specifically Super Target and Cub Foods and other smaller retailers just a short distance away.

    2) The traffic generated by the commercial uses would add excessive traffic volumes on 109th Avenue and exacerbate an already overburden intersection at TH 169/109th Avenue even with planned improvements.

    3) Extending the commercial acreage to the east creates potential public nuisances and negative externalities to residential neighborhoods directly north of 109th Avenue. Those externalities include noise, trash/debris and light spillage.

    4) Champlin contends that 140,000 square feet of commercial development is not in the "spirit" of the property's Business Park land use designation. The Business Park use designation, per Brooklyn Park's 2040 Land Use Plan, supports "Office, business, research and development, limited light industrial, limited retail, research and development,

warehousing and distribution as part of a master plan." 140,000 square feet of commercial development, by most accounts, would be considered significant and more regional. As such, Champlin recommends a greatly reduced commercial component and more Business Park type uses in the Northwest portion of the site.

3. The Cities of Champlin and Brooklyn Park are coordinating on the design and ultimate reconstruction of 109th Avenue. The consulting engineers (WSB & Associates) used trip generation from a 2022 Kimley Horn study, which shows 492,000 square feet of industrial park development for the northwest area of the business park to complete the ICE reports for 109th Avenue. It should be noted that the land use assumption with the 2022 Kimley Horn Memo had been industrial. The trip generation numbers for the 140,000 square feet of commercial/retail proposed in the AUAR update are about 20 percent higher in the AM peak and about 250 percent higher in the PM peak than the previous scenario that was all industrial park. We're still reviewing what that may mean for signal level of service (LOS) with this proposed scenario, but early indications are that there are impacts in level of service, wait times and queuing lengths.

Thank you for the opportunity to comment. We look forward to hearing your responses.

Kind Regards,

Scott Schulte
Community Development Director
City of Champlin

(763) 923-7102
schulte@ci.champlin.mn.us

HENNEPIN COUNTY
MINNESOTA

February 28, 2024

Amber Turnquest
Principal Planner, City of Brooklyn Park
5200 85th Avenue N
Brookly Park, MN 55443

Re: Northpark Business Center AUAR update

Ms. Turnquest:

Please consider the following county staff comments regarding the AUAR update for the Northpark Business Center. This AUAR update focused on development that has occurred to date, updated development scenarios, environmental analysis and mitigation. The Northpark Business Center directly abuts the County State Aid Highway (CSAH) 103 (Winnetka Avenue).

General
The AUAR refers to Winnetka Avenue as CSAH 103 and CR 103 interchangeably. The AUAR should be updated to reflect Winnetka Avenue as CSAH 103 throughout the document.

Section 3.2.2
Water Quality – Stormwater Runoff
Please confirm whether the water quality and stormwater runoff has been reviewed and approved by the local watershed management organization. If approval is needed, the letter or approval or the completed permit should be included in the appendix.

Attachment B NorthPark Business Center Traffic Analysis Report
Section 4.2 Future Traffic Forecasting
2040 No-Build Volume Development
Please confirm whether all buildings were in use when the daily traffic generation forecasts data was collected for the updated traffic volumes.

Section 5.3 Existing Conditions Level of Service Analysis
Table 9
Please update Table 9 to include intersections that the AUAR lists as mitigation no longer needed, including Winnetka Avenue (CSAH 103) and 114th Avenue, Winnetka Avenue, north of TH 610 and south of Oak Grove Parkway.

Hennepin County Transportation Project Delivery
Public Works Facility, 1600 Prairie Drive, Medina, MN 55340
612-596-0300 | hennepin.us

Section 5.6 Year 2028 Mitigation Level of Service Analysis
Table 13
Please confirm which leg of the Winnetka Avenue and Oxbow Creek Drive intersection has a LOS E as this will impact mitigation measures.

Section 5.9 Year 2040 Mitigation Level of Service Analysis
CSAH 103 & Oxbow Creek Drive
County staff recommend completing a traffic signal warrant analysis for the Winnetka Avenue and Oxbow Creek Drive intersection. The results of the analysis should be included in the AUAR update.

CSAH 103 & Oak Grove Parkway
Please review mitigations proposed. Oak Grove Parkway has dual left turn lanes. Please confirm whether the analysis reflects both the development as well as the BLRT.

Section 6.2 Trip Generation & Traffic Development
The text states that overall trip generation is anticipated to be lower than shown in the 2018 and 2013 AUAR traffic analyses. Please include a table confirming these values. Please provide context explaining why the AM and PM peak hours have less trips anticipated. Also please confirm whether buildings were occupied and in use for the analysis and the percentage of vacant buildings.

Section 6.7 Mitigation Plan
2021 No-Build Conditions (Recommendations for the 2018 AUAR)
The Winnetka Avenue and 114th Avenue northbound left-turn lane is identified as a mitigation needed, but the intersection was not included in the Intersection Analysis (page 11). The intersection analysis should be incorporated into the updated AUAR and include necessary mitigation measures.

2021 Build Conditions (Recommendations for the 2018 AUAR)
The BLRT project and related impacts should be included in in Table 6 in the main document of the AUAR.

Please contact me at 612-596-0359, ashley.morello@hennepin.us for any further discussion of these items.

Sincerely,

Ashley Morello

Ashley Morello
Transportation Planner
Hennepin County Public Works

February 27, 2024

Amber Turnquest, Principal Planner
City of Brooklyn Park
5200 85th Ave N.
Brooklyn Park, MN 55443

RE: City of Brooklyn Park – Alternative Urban Areawide Review Update (AUAR) –NorthPark Business Center
Metropolitan Council Review File No. 21068-5
Metropolitan Council District No. 2

Dear Amber Turnquest:

The Metropolitan Council received the City of Brooklyn Park's NorthPark Business Center AUAR Update on February 12, 2024. The AUAR represents the 5-year update required under environmental rules for a study area of approximately 227 acres located south of 109th Avenue North, between U.S. Highway 169 (US 169) and Winnetka Avenue North in Brooklyn Park. Metropolitan Council staff completed its review of the NorthPark Business Center AUAR Update to determine its accuracy and completeness in addressing regional concerns. Staff concludes that the AUAR Update 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:

Transportation *(Joe Widing, 651-602-1822)*
The AUAR Mitigation Summary notes an in-progress Travel Demand Management (TDM) plan for the site. The TDM plan should consider future nearby transit service, specifically the planned Oak Grove Parkway Blue Line LRT station to be located at County Road 103 and Oak Grove Parkway. This station area should be accessible to the AUAR site with non-motorized connections to enable employee access to the site from the future Blue Line LRT service.

Forecasts *(Todd Graham, 651-602-1322)*
The development scenarios from 2018 include 3.0 million to 4.1 million square feet of mostly industrial/office/warehousing space. Scenario C adds a high-density residential development as well. The 2024 AUAR Update adds a new Scenario D that recognizes the AUAR area is now mostly developed. Scenario D includes 2.6 million square feet of mostly industrial/office/warehousing space and no residential uses.

The Council may need to adjust Transportation Analysis Zone (TAZ) forecast allocations. TAZ forecasts were included in the City's 2040 Comprehensive Plan. The City expects TAZ #845 to gain +970 households, +2,600 population, and +2,570 jobs (employment) during 2020-2040. TAZ #845 expands from the City's northern boundary to Highway 610.

If Scenarios A or B are pursued, the Council finds the households and population allocations in TAZ #845 can be lowered, and the difference re-allocated to other parts of Brooklyn Park. If Scenario D is pursued, the households, population and employment allocations in TAZ #845 can be lowered. These adjustments are being deferred until a later time.

DEPARTMENT OF NATURAL RESOURCES

Formal Natural Heritage Review - Cover Page

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

Project Name: Project Hotdish

Project Proposer: Scannell Properties

Project Type: Development, Commercial/Institutional/Industrial

Project Type Activities: Grading;Waterbody or watercourse impacts (e.g., dewatering, discharge, excavation, fill, runoff, sedimentation, changes in hydrology))

TRS: T119 R21 S6, T120 R21 S31

County(s): Hennepin

DNR Admin Region(s): Central

Reason Requested: State EAW

Project Description: The project includes the development of 16 buildings, including industrial, office, warehouse, and commercial buildings. The project began in 2013, and ...

Existing Land Uses: 15 of the 16 proposed buildings have already been developed on site.

Landcover / Habitat Impacted: No existing landcover/habitat will be impacted by the proposed project.

Waterbodies Affected: There are no waterbodies that are within the vicinity of the project.

Groundwater Resources Affected: As the number of buildings onsite increase, the groundwater appropriation will increase.

Previous Natural Heritage Review: No

Previous Habitat Assessments / Surveys: No

SUMMARY OF AUTOMATED RESULTS

Category	Results	Response By Category
Project Details	No Comments	No Further Review Required
Ecologically Significant Area	No Comments	No Further Review Required
State-Listed Endangered or Threatened Species	Needs Further Review	State-protected Species in Vicinity
State-Listed Species of Special Concern	Comments	Recommendations
Federally Listed Species	No Records	Visit IPaC For Federal Review

DEPARTMENT OF NATURAL RESOURCES

September 12, 2023

Project Name: Project Hotdish
Project Proposer: Scannell Properties
Project Type: Development, Commercial/Institutional/Industrial
Project ID: MCE #2023-00716

DRAFT SUBMISSION - NOT VALID FOR OFFICIAL USE - PRELIMINARY RESULTS

This document does not meet the requirements of a Natural Heritage Review and may NOT be used to meet the requirements for permitting, licensing, formal environmental review, etc. This document is based on draft project details and is for planning purposes within your organization only.

To receive an official Natural Heritage Review letter, please click on the Edit Details tab, make any needed changes to the project details, change Project Submission to Final, and Click on Save.

AUTOMATED RESULTS: FURTHER REVIEW IS NEEDED

As requested, the above project has undergone an automated review for potential impacts to rare features. Based on this review, one or more rare features may be impacted by the proposed project and further review by the Natural Heritage Review Team is needed. You will receive a separate notification email when the review process is complete and the Natural Heritage Review letter has been posted.

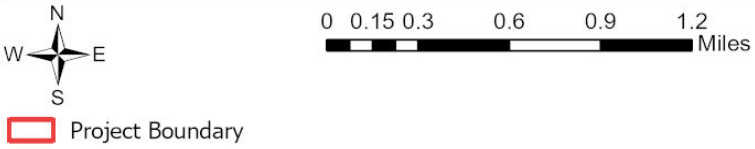
Please refer to the table on the cover page of this report for a summary of potential impacts to rare features. For additional information or planning purposes, use the Explore Page in Minnesota Conservation Explorer to view the potentially impacted rare features or to create a Conservation Planning Report for the proposed project.

If you have additional information to help resolve the potential impacts listed in the summary results, please attach related project documentation in the Edit Details tab of the Project page. Relevant information includes, but is not limited to, additional project details, completed habitat assessments, or survey results. This additional information will be considered during the project review.

This project has NOT been forwarded for further review. As the project is in draft status, it will not be forwarded to the Natural Heritage Team for further review. Please finalize your project submission if you would like your project to undergo further review.

Project Hotdish

Aerial Imagery With Locator Map



Project Boundary

Project Type: Development, Commercial/Institutional/Industrial

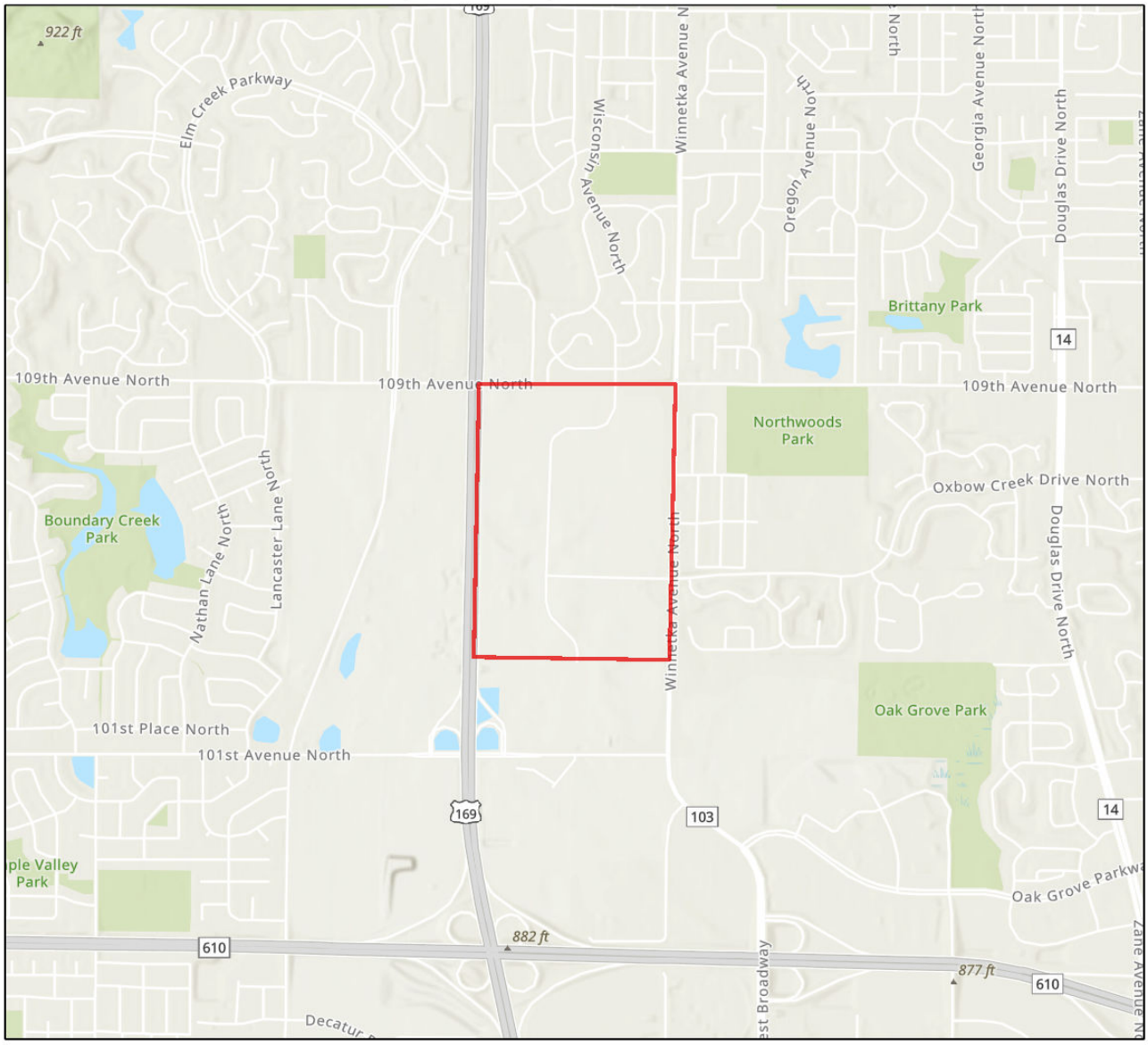
Project Size (acres): 238.16

County(s): Hennepin

TRS: T119 R21 S6, T120 R21 S31

Project Hotdish

USA Topo Basemap With Locator Map



N
W E
S

0 0.15 0.3 0.6 0.9 1.2
Miles

Project Boundary

Project Type: Development, Commercial/Institutional/Industrial

Project Size (acres): 238.16

County(s): Hennepin

TRS: T119 R21 S6, T120 R21 S31

Climate *(MacKenzie Young-Walters, 651-602-1373)*
Metropolitan Council staff encourages the project proposer to explore using native plants and trees to reduce the stormwater runoff from the development and minimize impervious surfaces' contribution to the urban heat island effect.

Council staff also encourages the project proposer to consider utilizing EV ready design to facilitate the transition to electric vehicles and help offset the greenhouse gas emissions from the proposed commercial development and motor vehicle fuel station covered by the AUAR update.

The Council will not take formal action on the AUAR Update. If you have any questions or need further information, please contact Eric Wojchik, Principal Reviewer, at 651-602-1330 or via email at eric.wojchik@metc.state.mn.us.

Sincerely,

Angela R. Torres, AICP, Senior Manager
Local Planning Assistance

CC: Tod Sherman, Development Reviews Coordinator, MnDOT - Metro Division
Reva Chamblis, Metropolitan Council District No. 2
Judy Sventek, Water Resources Manager
Eric Wojchik, Sector Representative/ Principal Reviewer
Reviews Coordinator

N:\CommDev\LPA\Communities\Brooklyn Park\Letters\Brooklyn Park 2024 NorthPark Business Center AUAR Update Ok Comments 21068-5.docx

DEPARTMENT OF NATURAL RESOURCES

Division of Ecological and Water Resources
Region 3 Headquarters
1200 Warner Road
Saint Paul, MN 55106

Transmitted by Email

February 28, 2024

Amber Turnquest
City of Brooklyn Park
5200 85th Ave. N.
Brooklyn Park, MN 55443

Dear Amber Turnquest,

Thank you for the opportunity to review the NorthPark Business Center Alternative Urban Areawide Review (AUAR) Update located within the City of Brooklyn Park in Hennepin County. The DNR respectfully submits the following comments for your consideration:

1. Section 3.2.2. Water Quality – Stormwater Runoff. The project area is located within a Wellhead Protection Area and a Drinking Water Supply Management Area that is extremely sensitive to pollution due to the excessively drained sandy soils in the area. The planned increase in impervious surfaces will also increase the amount of road salt used in the project area. Chloride released into local lakes, streams, and groundwater does not break down, and instead accumulates in the environment, potentially reaching levels that are toxic to aquatic wildlife and plants. 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 encourage the City of Brooklyn Park to consider requiring that developments significantly increasing impervious surfaces develop a chloride management plan that outlines what BMP's and strategies will be used to reduce chloride use within the project area and include this plan within Operations and Maintenance Agreements. 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.

2. Section 5, Mitigation Summary and Update:

   a. Please note that a Natural Heritage Review to determine if a project is likely to impact state-listed species is only considered current for 12 months because the Natural

Heritage Information System (NHIS) is constantly being updated as we obtain more data regarding rare features. Therefore, a new query of the NHIS database is necessary to determine if the remaining project yet to be completed is likely to impact state-listed species that are protected by law. This may be done using a current NHIS license or by submitting the project to Minnesota Conservation Explorer.

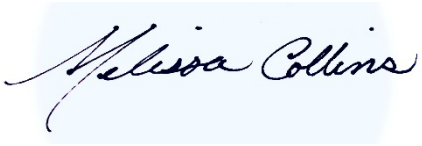
Please be aware that the status of some federally-listed species has changed since 2018. To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish & Wildlife Service's online Information for Planning and Consultation (IPaC) tool.

b. We recommend that the developer utilize native, pollinator-friendly vegetation in landscaping and stormwater ponds as much as possible. The Board of Water and Soil Resources' Lawns to Legumes website has many excellent resources related to selecting seed mixes and establishing pollinator habitat. Please also see this statewide Pollinator Plan and consider how the City of Brooklyn Park can incorporate pollinator-friendly practices and ordinances into local projects. Stormwater features provide an excellent opportunity to replace standard turf with a diverse plant mix that provides greater wildlife and water quality benefits.

c. Please note that a DNR Water Appropriation Permit is required if the water pumped exceeds 10,000 gallons in a day, or one million gallons in one year. The DNR General Permit for Temporary Appropriation, with its lower permit application fee and reduced time for review, may be used for the dewatering if the dewatering volume is less than 50 million gallons and the time of the appropriation is less than one year.

Thank you again for the opportunity to comment on 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

Equal Opportunity Employer

Metropolitan District
Waters Edge Building
1500 County Road B2 West
Roseville, MN 55113

March 4, 2024

Amber Turnquest
Principal Planner
City of Brooklyn Park
5200 85th Ave. N.
Brooklyn Park, MN 55443

SUBJECT: MnDOT Review #**AUAR24-002**
NorthPark Business Center AUAR
SE Quad US 169 & 109th Avenue North
Brooklyn Park, Hennepin County

Dear Ms. Turnquest:

Thank you for the opportunity to review the **NorthPark Business Center AUAR.** MnDOT has reviewed the documents and has the following comments:

Water Resources:
A drainage permit will be necessary for this development. There is a known flooding and capacity issue to the north. The drainage permit will need to demonstrate that the new development will not make the drainage issue worse. Any projects adjacent to MnDOT ROW or connecting to MnDOT drainage facilities will require a MnDOT drainage permit to ensure that current drainage rates to MnDOT right-of-way will not be increased. The drainage permit application, including the information below, should be submitted online to: https://dotapp7.dot.state.mn.us/OLPA/.

The following information must be submitted with the drainage permit application:

1) A grading plan showing existing and proposed contours.
2) Drainage area maps for the proposed project showing existing and proposed drainage areas. Any off-site areas that drain to the project area should also be included in the drainage area maps. The direction of flow for each drainage area must be indicated by arrows.
3) Drainage computations for pre and post construction conditions during the 2, 10, 50 and 100 year rain events.
4) Time of concentration calculations.
5) An electronic copy of any computer modeling used for the drainage computations.
6) See also the attached Drainage Permits Checklist for more information.
Once a drainage permit application is submitted, a thorough review will be completed and additional information may be requested. Water Resources Engineering will work with the applicant to ensure acceptable outlets to the ROW.

From: Riley, Stephen Anthony (Steve) CIV USARMY CEMVP (USA) <Stephen.A.Riley@usace.army.mil>
Sent: Wednesday, February 21, 2024 9:31 AM
To: Roess, Madeline <Madeline.Roess@kimley-horn.com>
Cc: Amber Turnquest <Amber.Turnquest@brooklynpark.org>; Brown, Meghan J CIV USARMY CEMVP (USA) <Meghan.J.Brown@usace.army.mil>
Subject: RE: MVP-2015-00890-KBH [Non-DoD Source] Notice of Availability for the Northpark Business Center AUAR Update - City of Brooklyn Park, Hennepin County, MN

H

The Corps of Engineers St. Paul District Regulatory Division (the Corps) recently received a request for a Alternative Urban Areawide Review (AUAR) for the Northpark Business Center.

Our office is committed to efficient, helpful service. It is unclear if your project will have impacts to jurisdictional waters. If your project will have impacts to aquatic resources, please submit a permit application with the impacts clearly identified and we can assist you through our permit review process if authorization is required.

You may also request a pre-application meeting to discuss your project prior to submitting a permit application. You can find more information on our permit program and our joint application here: https://www.mvp.usace.army.mil/Missions/Regulatory/Permitting-Process-Procedures/. **Be sure to select the pre-application box on the joint application.*

Please note this recommendation is only pertaining to the Corps process and does NOT indicate whether a review is required from the state or local authorities.

If we do not receive a response from you within 3 business days we will assume nothing further is needed from our office.

Thanks,
Steve Riley
Environmental Protection Technician
U.S. Army Corps of Engineers
10867 East Gull Lake Drive
Brainerd, MN 56401

Please direct questions concerning drainage issues to Jason Swenson, MnDOT Metro Water Resources at 651-234-7539 or Jason.Swenson@state.mn.us.

Permits:
In addition to any permits mentioned above, any use of, or work within or affecting, MnDOT right of way will require a permit.

Permits can be applied for at this site: https://olpa.dot.state.mn.us/OLPA/. Please upload a copy of this letter when applying for any permits.

Please direct questions regarding permit requirements to Buck Craig of MnDOT's Metro Permits Section at 651-775-0405 or Buck.Craig@state.mn.us.

Review Submittal Options
MnDOT's goal is to complete reviews within 30 calendar days. Review materials received electronically can be processed more rapidly. Do not submit files via a cloud service or SharePoint link. In order of preference, review materials may be submitted as:

1. Email documents and plans to metrodevreviews.dot@state.mn.us. Attachments may not exceed 20 MB (megabytes) per email. Documents can be zipped as well. If multiple emails are necessary, number each email.

2. Files over 20 MB can also be uploaded to MnDOT's Web Transfer Client site: https://mft.dot.state.mn.us. Create an account and folder, upload documents to that folder, then check the folder and share to metrodevreviews.dot@state.mn.us. Please send an accompanying email with a narrative for the development.

If you have any questions concerning this review, please contact me at (651) 234-7797.

Sincerely,

Cameron Muhic
Senior Planner

Copy sent via E-Mail:
Buck Craig, Permits
Jason Swenson, Water Resources
Ryan Wilson, Area Manager
Michael D. Nelson, Surveys
Amrish Patel, Transit
Sara Dunlap, Ped/Bike
Lance Schowalter, Design
Eric Lauer-Hunt, Traffic
Ben Klismith, Area Engineer
Doug Nelson, Right-of-Way
Mike Kowski, Maintenance
Joe Widing, Metropolitan Council

From:	Johnny Hoang
To:	Amber Turnquest; Xp Lee; Jeffrey Lunde
Subject:	CR 103 & Oxbow Creek Drive - Brooklyn Park 2024 NorthPark Business Center Alternative
Date:	Wednesday, February 21, 2024 2:11:46 PM

Dear Commissioner Lunde, Councilmember XP Lee, Planner Turnquest.

According to the Northpark AUAR updates there will be a significant amount of traffic on Winnetka with a potential of 19,900 daily trips.

We along with approximately 300 households live to the immediate east of Winnetka (CR 103.)

There have been multiple accidents on this road within the past couple years since the completion of Northland Business Park.

Are there any plans for traffic and accidents mitigation at CR 103 on Oxbow Creek? According to MnDOT studies, having a round-a-bout significantly reduces congestions and accidents. If that is not feasible, a stop light would be a much safer at controlling traffic than the current stop sign.

Thank you,