



SSTS

S² TRAFFIC SOLUTIONS

December 2nd, 2024

To: Eric Zweber, Planning Consultant for City of Wayzata

From: Vernon Swing, PE

Re: Traffic and Parking Analysis Memorandum – Proposed 200 Lake St E Mixed Use, Wayzata, MN

Executive Summary

Traffic and parking analyses have been conducted for a 3-Story Mixed-use Redevelopment at 200 Lake Street E in Wayzata, Hennepin County, MN. The study documents the existing conditions, the anticipated site-generated traffic and its distribution, reviews the traffic operations at the site access and adjacent intersections for the year 2026, and reviews the parking demand for the project. Detailed study information can be found in subsequent sections of this memo.

The following provides a summary of the study, traffic operations, parking analysis and recommendations:

- Traffic operations were analyzed for year 2026 conditions without (No-Build) and with (Build) the proposed project for weekday AM and PM peak hour conditions.
 - The proposed project is estimated to generate 39 new trips (22 entering and 17 exiting) during the morning traffic peak hour, 50 new trips (20 entering and 30 exiting) during the evening traffic peak hour and 372 new daily trips. Results of the traffic analysis indicate acceptable operations with minimal vehicle delay and minimal vehicle queuing at adjacent intersections and the site access.
 - It is recommended that the site access driveway has enhanced signage warning vehicles of pedestrian and bicycle crossing on the south side of Lake St E.
 - 162 parking spaces are proposed with the redevelopment and will provide adequate on-site parking per ITE's Parking Generation Manual and Wayzata Zoning Code. Furthermore, based on parking time of day estimates there will likely be a surplus range of 48 - 95 spaces available in the ramp that could be used as additional public parking to serve the surrounding businesses.
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Per your request, S² Traffic Solutions, LLC has conducted a traffic and parking analysis for the proposed redevelopment of the former 2.27-acre TCF Bank headquarters site as a 3-story mixed use residential building with 50 residential units, 13,262 sq ft of office space, and 5,225 sq ft of additional retail space. The site will also include 162 vehicle parking spaces and 48 bicycle parking spaces. The development referred to hereafter as the Proposed Project is located at 200 Lake Street E in Wayzata, Hennepin County, MN, on the south side of Lake St E between Ferndale Rd S and Barry Ave S. Access to the site will be available via two driveways along Lake St E, the west access is near Ferndale Ave S which will serve the surface lot, and the east access is near Grove Ln E which will handle trucks and the internal parking spaces. (See Figures 1 and 2 for the Vicinity Map and Site Plans, respectively). It is noted that the location of the east access is at the existing eastern driveway to the site and the west access is located at the existing west access to the site, and the middle access that was previously used by TCF Bank has been eliminated.

This memorandum documents the existing conditions, the anticipated site-generated traffic and its distribution, and reviews the traffic operations at the following intersections for the year after completion of the development, 2026:

- Lake St E & Minnetonka Ave S
- Lake St E & Grove Ln E/Barry Ave S
- Lake St E & Edgewood Ct
- Lake St E & Ferndale Ave S
- Barry Ave & Wayzata Blvd E
- Site Access Driveway (to the parking garage)

Additionally, this memo addresses the anticipated parking demand for the Proposed Project.

Existing Conditions

The existing conditions of the roadways and intersection providing direct access to the Proposed Project were gathered during a site visit conducted in July of 2024 and are noted in **Table 1**. Additionally, **Figure 3** shows the existing lane geometry and traffic control at the study intersections.

Table 1. Study Roadway Characteristics

Roadway	Functional Class	Typical Section	Posted Speed	AADT
Lake St E (CSAH 15)	Major Collector	3-Lane Undivided Urban	30 mph	6,200
Grove Ln E/Barry Ave	Minor Collector	2-Lane Undivided Urban	30 mph	1,250
Minnetonka Ave S	Local Road	2-Lane Undivided Urban	20 mph	1,000
Edgewood Ct	Local Road	2-Lane Undivided Urban	20 mph	120
Wayzata Blvd E	A Minor Reliever	3-Lane Undivided Urban	35mph	6,745
Ferndale Ave S	Major Collector	2-Lane Undivided Urban	30 mph	3,900

* Turn lanes are provided at major intersections and operations are similar to a three-lane roadway.

-AADT Sources: MnDOT’s Traffic Mapping Application, Wayzata’s Comprehensive Plan, or interpolated from existing PM peak hour traffic counts

Existing Traffic Volumes

AM and PM peak hour turning movement counts were obtained at all study area intersections. Turning movement counts from August, 2021 were used for the following intersections:

- Lake St E & Barry Ave S
- Lake St E & Minnetonka Ave S
- Wayzata Blvd & Barry Ave S

Turning movement counts for the following intersections were conducted on Wednesday, March 23rd, 2022:

- Lake St E & Ferndale Rd S
- Lake St E & Edgewood Ct

The AM peak traffic hour was found to occur from 8:00 - 9:00 AM and the PM peak traffic hour was found to occur from 4:30 - 5:30 PM. **Figure 4**, Existing Traffic Volumes, illustrates the existing turning movement traffic volumes as well as available ADT counts.

Future Conditions

To quantify the impacts of a development on the surrounding roadway system, it is necessary to first analyze traffic conditions that would be present without the inclusion of the proposed project. The anticipated construction completion date for the Proposed Project is 2025, thus year 2026 was selected for analysis to compare traffic conditions after initial traffic patterns to and from the Proposed Project have become established. To determine the future 2026 traffic conditions a two-step approach was taken.

First, a review of 2040 traffic forecasts in *Wayzata's 2040 Comprehensive Plan*¹ was completed to determine annual traffic growth rates on the study area roadways. The review indicates the following (interpolated from 2018 and 2040 AADT):

- 1.5% annual growth rate on Lake St E
- 3.0% annual growth rate on Wayzata Blvd E
- 0.5% annual growth rate on Ferndale Rd S

Second, estimated site-generated traffic from nearby potential developments (not including the Proposed Project) was considered. Conversations with the City of Wayzata indicated that traffic from the proposed 201 Lake St E Development, a mixed-use development, should be included in the 2026 No-Build Volumes. Traffic from other nearby developments were discussed with the City and it was determined the related traffic would be included in the annual growth rates noted above.

Figure 5 illustrates the 2026 No-Build traffic volumes with these growth rates applied to the existing volumes and with site-generated traffic from the proposed 201 Lake St E development.

Trip Generation and Distribution

The redevelopment of the TCF Bank site will include a 3-story building with 50 residential units, 13,262 sq ft of office space, and 5,225 sq ft of additional retail space. The volume of vehicle trips generated by the Proposed Project has been estimated for the weekday AM and PM peak hours and on a daily basis using the data methodology described in the *Trip Generation Manual*². Table 2 summarizes the trip generation estimate for the Proposed Project.

¹ *Wayzata's 2040 Comprehensive Plan*, May 2020, [Link](#)

² *Trip Generation Manual*, Institute of Transportation Engineers (ITE), 11th Edition

Table 2 - Trip Generation Proposed Project

Land Use	Land Use Code	Size	Trips Generated:				Weekday ADT
			AM Peak		PM Peak		
			Enter	Exit	Enter	Exit	
Mid-Rise Apartment/Suburban	221	50 units	4	15	12	8	227
Hardware/Paint Store	816	5,225 s.f.	3	2	7	9	42
General Office Building	710	13,262 s.f.	18	2	3	16	144
Totals - Gross			25	19	22	33	413
			44		55		
Shared Trips ¹			3	2	2	3	41
			5		5		
Totals - Net*			22	17	20	30	372
			39		50		

¹ Shared trips were estimated using the Trip Generation Handbook and a 10% reduction was used.

* New trips after shared trip reductions.

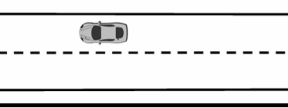
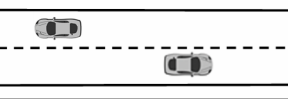
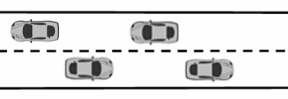
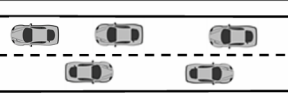
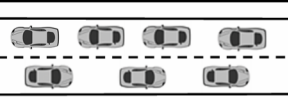
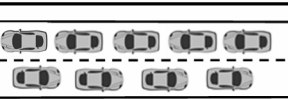
As shown in Table 2, the Proposed Project will generate 39 new trips (22 entering and 17 exiting) during the morning traffic peak hour, 50 new trips (20 entering and 30 exiting) during the evening traffic peak hour and 372 new daily trips. Shared trips were considered in the trip generation estimates and account for the complimentary nature between the land uses of the Proposed Project (i.e., an apartment resident working at the office or visiting the retail use).

The trips have been assigned to the surrounding roadways according to the existing and anticipated traffic patterns. Figure 6 illustrates the trip assignment, and Figure 7 illustrates the 2026 Build conditions, which reflects the combination of the 2026 No-Build traffic on Figure 5 with the trip assignment on Figure 6.

Traffic Operations

The operating conditions of transportation facilities, such as roadways, traffic signals, roundabouts and stop-controlled intersections, are evaluated based on the relationship of the theoretical capacity of a facility to the actual traffic volume on that facility. Various factors affect capacity including travel speed, roadway geometry, grade, number of travel lanes, and intersection control. The current standards for evaluating capacity and operating conditions are contained in the *Highway Capacity Manual*³. The procedures describe operating conditions in terms of driver delay represented as a Level of Service (LOS). Operations are given letter designations with "A" representing the best operating conditions and "F" representing the worst. Generally, LOS "D" represents the threshold for acceptable overall intersection operating conditions during a peak hour. The Chart on the following page summarizes LOS and delay criteria for signalized and unsignalized intersections.

³ *Highway Capacity Manual (HCM)*, Transportation Research Board, 7th Edition

Level of Service	Description	Delay (sec)	
		Signalized	Unsignalized/ Roundabout
A	 Primarily free-flow operation.	0-10	0-10
B	 Reasonably unimpeded operation.	>10-20	>10-15
C	 Stable operation. The ability to maneuver is more restricted than LOS B.	>20-35	>15-25
D	 Less stable operation. Small increases in flow may cause large increases in delay and reduced speeds.	>35-55	>25-35
E	 Unstable operation. Low speeds and considerable delay.	>55-80	>35-50
F	 Congested operation. High delay and extensive queuing.	>80	>50

For side street stop-controlled intersections special emphasis is given to providing an estimate for the level of service of the minor approaches. Traffic operations at an unsignalized intersection with side street stop-control can be described two ways. First, consideration is given to the overall intersection level of service. This takes into account the total number of vehicles entering the intersection and the capability of the intersection to support these volumes. Second, it is important to consider the delay on the minor approaches, since the mainline does not have to stop. It is common for intersections with higher mainline traffic volumes to experience increased levels of delay and poor level of service on the side streets.

A final fundamental component of operational analyses is a study of vehicular queuing, or the line of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable Level of Service, but if queues from the intersection extend back to block entrances to turn lanes or accesses to adjacent land uses, unsafe operating conditions could result. In this report, the Industry Design Standard 95th percentile queue length is used. The 95th Percentile Queue Length refers to that length of vehicle queue that has only a five-percent probability of occurring during an analysis hour.

This study has utilized the industry current Synchro/SimTraffic software package (12th Edition) to analyze the 2026 No-Build and Build conditions for both the AM and PM peak hours. It is noted, the reported results are from the aggregate of 10 SimTraffic simulations which use a random number generator to seed the network with vehicles. These results reflect dynamic conditions and are more accurate than the results of the static analysis reported by Synchro. Due to the random number generator, results can sometimes show slightly better operations on minor movements under higher traffic conditions when the intersections are operating well. This can be seen when delays and queues noted in the Build Scenario are slightly less than the No-Build Scenarios.

Analysis Results

Table 3 summarizes the results of the operational analysis for the 2026 No-Build conditions. Note the 2026 No-Build operations reflect the additional traffic associated with the annual growth rate and the 201 Lake St E development applied to existing traffic volumes.

Table 3 – 2026 No-Build

Intersection	Measure of Effectiveness (Delay in Sec and Queue in Ft)				
	Criteria	AM Peak Hour		PM Peak Hour	
Lake St E & Ferndale Rd S (All-Way Stop-Controlled)	Overall LOS & Delay	A	4.4	A	4.8
	Worst Movement LOS & Delay	A	6.6 (NBT)	A	7.0 (NBT)
	95th Percentile Queue		SBTR - 54'		WBL - 63'
Lake St E & Surface Lot (Side-Street Stop-Controlled)	Overall LOS & Delay				
	Worst Movement LOS & Delay		N/A		N/A
	95th Percentile Queue				
Lake St E & Edgewood Ct (Side-Street Stop-Controlled)	Overall LOS & Delay	A	0.3	A	0.3
	Worst Movement LOS & Delay	A	5.5 (SBL)	A	7.8 (SBL)
	95th Percentile Queue		SBLR - 26'		SBLR - 34'
Lake St E & Parking Garage Access (Side-Street Stop-Controlled)	Overall LOS & Delay				
	Worst Movement LOS & Delay		N/A		N/A
	95th Percentile Queue				
Lake St E & Barry Ave S (All-Way Stop-Controlled)	Overall LOS & Delay	A	5.4	A	6.2
	Worst Movement LOS & Delay	A	6.6 (WBT)	A	7.4 (WBT)
	95th Percentile Queue		WBTR - 60'		WBTR - 76'
Lake St E & Minnetonka Ave S (Side-Street Stop-Controlled)	Overall LOS & Delay	A	1.7	A	1.9
	Worst Movement LOS & Delay	A	5.1 (SBL)	A	7.0 (SBL)
	95th Percentile Queue		SBLR - 52'		SBLR - 58'
Wayzata Blvd & Barry Ave S (Side-Street Stop-Controlled)	Overall LOS & Delay	A	1.3	A	1.5
	Worst Movement LOS & Delay	B	11.9 (SBL)	B	13.0 (NBL)
	95th Percentile Queue		WBL - 36'		NBLT - 37'

The results shown in Table 3 indicate that the overall operations at all study area intersections are forecast to function at acceptable LOS A, and all approaches and movements are forecast to function at acceptable LOS B or better in the 2026 No-Build scenario.

Table 4 summarizes the results of the operational analyses for the 2026 Build conditions. Again, the 2026 Build operations reflect the additional traffic associated with the annual growth rate and the 201 Lake St E development applied to existing traffic volumes with the addition of the net new traffic forecast for the Proposed Project.

Table 4 – 2026 Build

Intersection	Measure of Effectiveness (Delay in Sec and Queue in Ft)				
	Criteria	AM Peak Hour		PM Peak Hour	
Lake St E & Ferndale Rd S (All-Way Stop-Controlled)	<i>Overall LOS & Delay</i>	A	4.5	A	4.8
	<i>Worst Movement LOS & Delay</i>	A	6.7 (EBT)	A	6.9 (NBT)
	<i>95th Percentile Queue</i>		NBR - 55'		WBL - 67'
Lake St E & Surface Lot (Side-Street Stop-Controlled)	<i>Overall LOS & Delay</i>	A	0.7	A	0.6
	<i>Worst Movement LOS & Delay</i>	A	6.0 (NBL)	A	6.0 (NBL)
	<i>95th Percentile Queue</i>		NBLR - 41'		NBLR - 34'
Lake St E & Edgewood Ct (Side-Street Stop-Controlled)	<i>Overall LOS & Delay</i>	A	0.4	A	0.3
	<i>Worst Movement LOS & Delay</i>	A	5.6 (SBL)	A	7.2 (SBL)
	<i>95th Percentile Queue</i>		SBLR - 28'		SBLR - 34'
Lake St E & Parking Garage Access (Side-Street Stop-Controlled)	<i>Overall LOS & Delay</i>	A	1.8	A	1.7
	<i>Worst Movement LOS & Delay</i>	A	6.2 (NBL)	A	7.7 (NBL)
	<i>95th Percentile Queue</i>		NBLR - 56'		NBLR - 54'
Lake St E & Barry Ave S (All-Way Stop-Controlled)	<i>Overall LOS & Delay</i>	A	5.5	A	6.4
	<i>Worst Movement LOS & Delay</i>	A	6.9 (WBT)	A	7.6 (WBT)
	<i>95th Percentile Queue</i>		WBTR - 65'		WBTR - 77'
Lake St E & Minnetonka Ave S (Side-Street Stop-Controlled)	<i>Overall LOS & Delay</i>	A	1.7	A	2
	<i>Worst Movement LOS & Delay</i>	A	5.7 (SBL)	A	7.0 (SBL)
	<i>95th Percentile Queue</i>		SBLR - 51'		SBLR - 62'
Wayzata Blvd & Barry Ave S (Side-Street Stop-Controlled)	<i>Overall LOS & Delay</i>	A	1.5	A	1.6
	<i>Worst Movement LOS & Delay</i>	B	11.4 (NBL)	B	14.3 (NBL)
	<i>95th Percentile Queue</i>		WBL - 43'		NBLT - 43'

The results shown in Table 4 indicate the 2026 Build operations of the study area intersections are at the same acceptable LOS A or better for overall operations and LOS B or better for individual travel lane operations, with manageable vehicle queuing. The addition of site-generated traffic slightly increases delay and queuing but not above unacceptable levels as the existing roadway network has available capacity.

It is important to note that the redevelopment of the site will result in the elimination of an access driveway that currently cross the regional bicycle trail as well as the pedestrian path that runs along the south side of Lake St E. This will result in a safer environment for these alternative transportation modes. Further, it is suggested that enhanced signing be considered to remind drivers of the regional trail crossing.

Parking Analysis

The Proposed Project provides 162 vehicle parking spaces. A parking demand review was conducted to determine if these 162 spaces are sufficient for the planned uses. The parking demand for the Proposed Project was calculated using two sources, *City of Wayzata's Zoning Code*⁴ and *ITE's Parking Generation Manual*⁵, and is shown on Table 5. These numbers represent the raw peak demand for each use and do not include a time-of-day shared demand distribution.

Table 5 – Peak Parking Demand

Land Use	Size	ITE Parking Generation			City Code	
		Land Use Code	Rate	Demand	Rate	Demand
Mid-Rise Apartment/Suburban	50 units	221	1.23	62	2.00	100
Hardware/Paint Store	5,225 s.f.	816	1.05	5	0.003	16
General Office Building	13,262 s.f.	710	1.95	26	0.003	40
Total				93		156

To account for land use specific parking peaks occurring at different times of the day, a Time of Day (TOD) distribution has been completed. For example, on a typical weekday the parking for housing will peak overnight when most residents are home while the office use parking will peak in the middle of the weekday day when most employees are at work. Using hourly TOD distributions for each land use from the *Parking Generation Manual* and the *Zoning Code*, the proposed project estimated parking demand is shown in Tables 6 and 7, respectively.

Table 6 –Weekday Time of Day Parking Demand - Per ITE

Hour	Mid-Rise Apartment		General Office		Hardware/Paint Store		Total Demand
	Utilization	Demand	Utilization	Demand	Utilization	Demand	
12 AM	100%	62	0%	0	0%	0	62
1 AM	100%	62	0%	0	0%	0	62
2 AM	100%	62	0%	0	0%	0	62
3 AM	100%	62	0%	0	0%	0	62
4 AM	100%	62	0%	0	0%	0	62
5 AM	96%	60	0%	0	0%	0	60
6 AM	86%	54	0%	0	0%	0	54
7 AM	77%	48	13%	4	17%	1	53
8 AM	66%	41	47%	13	67%	4	58
9 AM	60%	38	87%	23	75%	4	65
10 AM	57%	36	99%	26	83%	5	67
11 AM	55%	35	100%	26	100%	5	66
12 PM	52%	33	86%	23	92%	5	61
1 PM	50%	31	84%	22	67%	4	57
2 PM	52%	33	93%	25	67%	4	62
3 PM	51%	32	93%	25	75%	4	61
4 PM	57%	36	85%	23	67%	4	63
5 PM	62%	39	57%	15	50%	3	57
6 PM	65%	41	21%	6	8%	1	48
7 PM	68%	43	0%	0	0%	0	43
8 PM	75%	47	0%	0	0%	0	47
9 PM	82%	51	0%	0	0%	0	51
10 PM	87%	54	0%	0	0%	0	54
11 PM	91%	57	0%	0	0%	0	57
Max		62		26		5	67

⁴ *City of Wayzata Zoning Code*, Part IX-Zoning, Chapter 920 – Off Street Loading and Parking.

⁵ *Parking Generation Manual*, Institute of Transportation Engineers (ITE), 6th Edition.

Table 7 –Weekday Time of Day Parking Demand - Per City Zoning Code

Hour	Mid-Rise Apartment		General Office		Retail		Total Demand
	Utilization	Demand	Utilization	Demand	Utilization	Demand	
12 AM to 7 AM	100%	100	5%	2	0%	0	102
7 AM to 6 PM	60%	60	100%	40	90%	14	114
6 PM to 12 AM	100%	100	5%	2	60%	10	112
Max		100		40		14	114

In summary, per ITE’s *Parking Generation Manual* a peak parking demand of 67 parked vehicles is estimated to occur at 10:00 AM on a weekday and per Wayzata’s *Zoning Code* 114 parked vehicles is estimated to occur during the weekday 7:00 AM to 6:00 PM timeframe. The proposed 162 parking stalls will provide adequate on-site parking for the Proposed Project with an estimate surplus range of 48 - 95 spaces, which may be available for the surrounding businesses or the general public.

Conclusion

In conclusion, the proposed development has appropriate access to the site and to the surrounding roadway network. The traffic operational analysis indicates there is available capacity on the roadways surrounding the site, and the additional traffic from the Proposed Project will have minor impacts on traffic operations in the area.

It is recommended that the site access driveways have enhanced signage warning vehicles of the bicycle crossing on the south side of Lake St E.

The 162 parking spaces planned for the Proposed Project will provide more than adequate parking for the on-site uses. There will likely be a surplus of available parking throughout the day and into the evening. The surplus of spaces could be used as additional public parking to serve the surrounding businesses.

Please contact Vernon Swing at vswingtraffic@gmail.com or 612-968-4142 with any questions.

Attachments: Figures 1-7

(Appendices with Traffic Counts, Trip Generation Data, Synchro/Simtraffic Worksheets are available upon request.)



Figure 1 - Vicinity Map

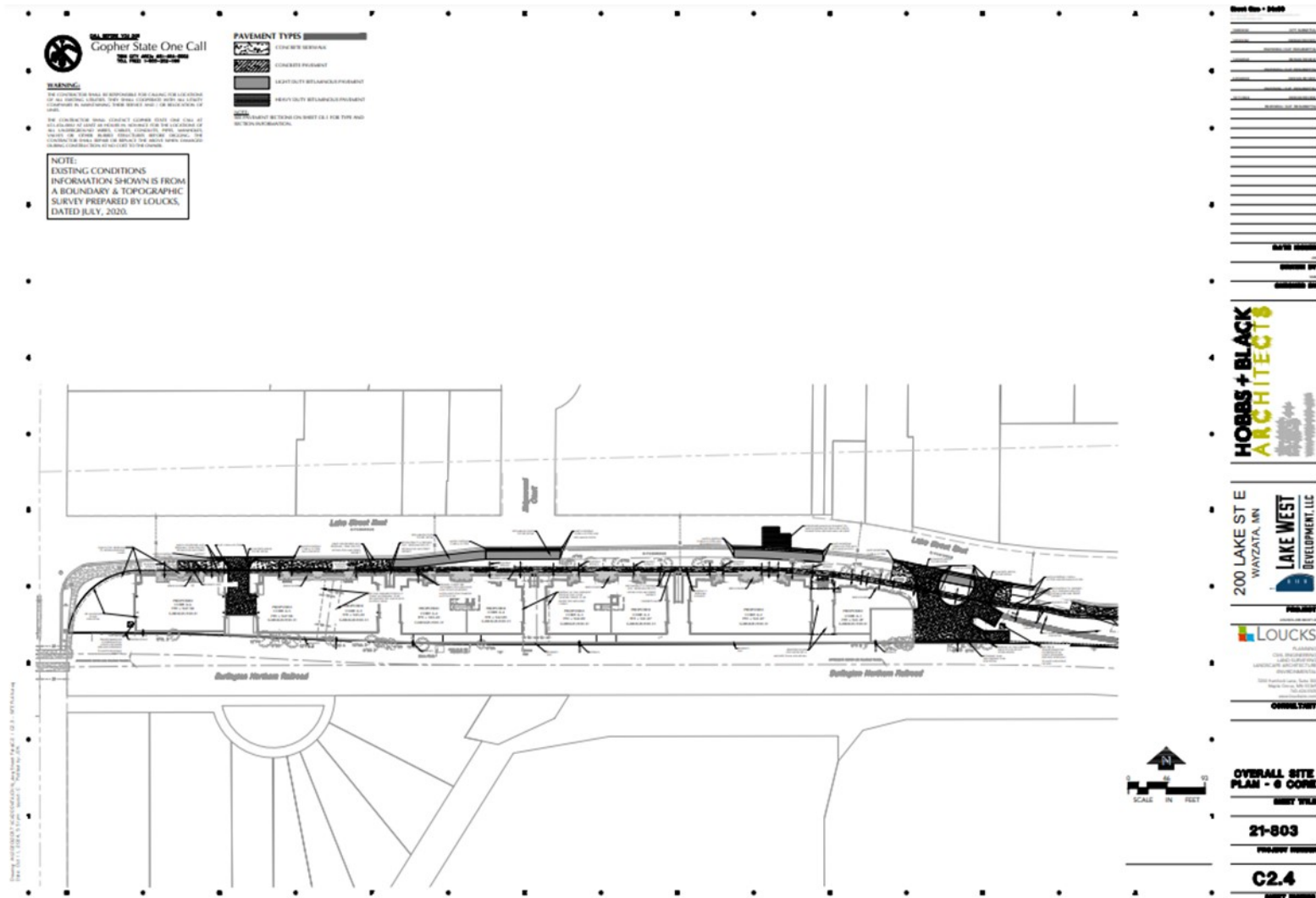


Figure 2 - Site Plan (By Others)

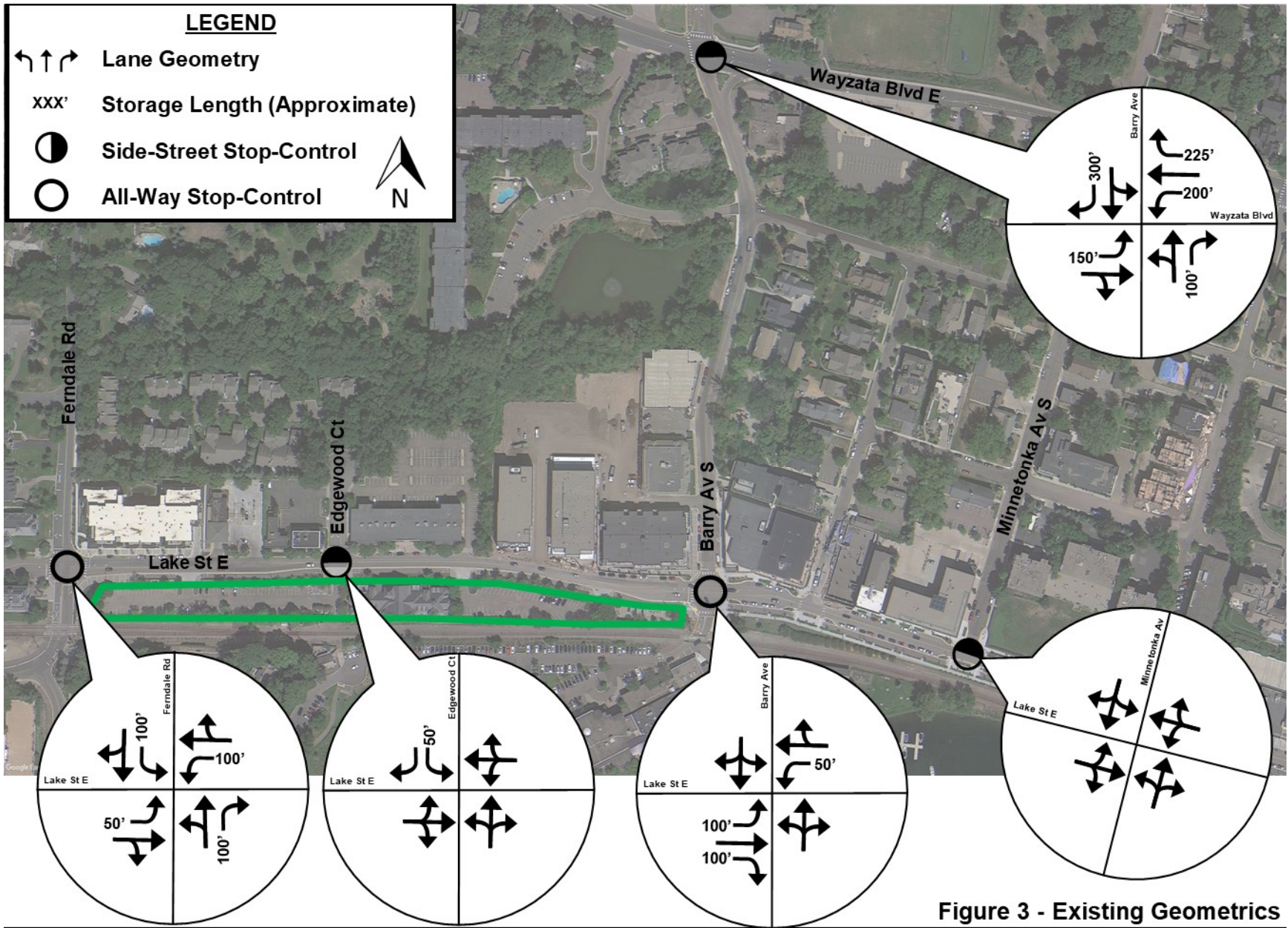


Figure 3 - Existing Geometrics

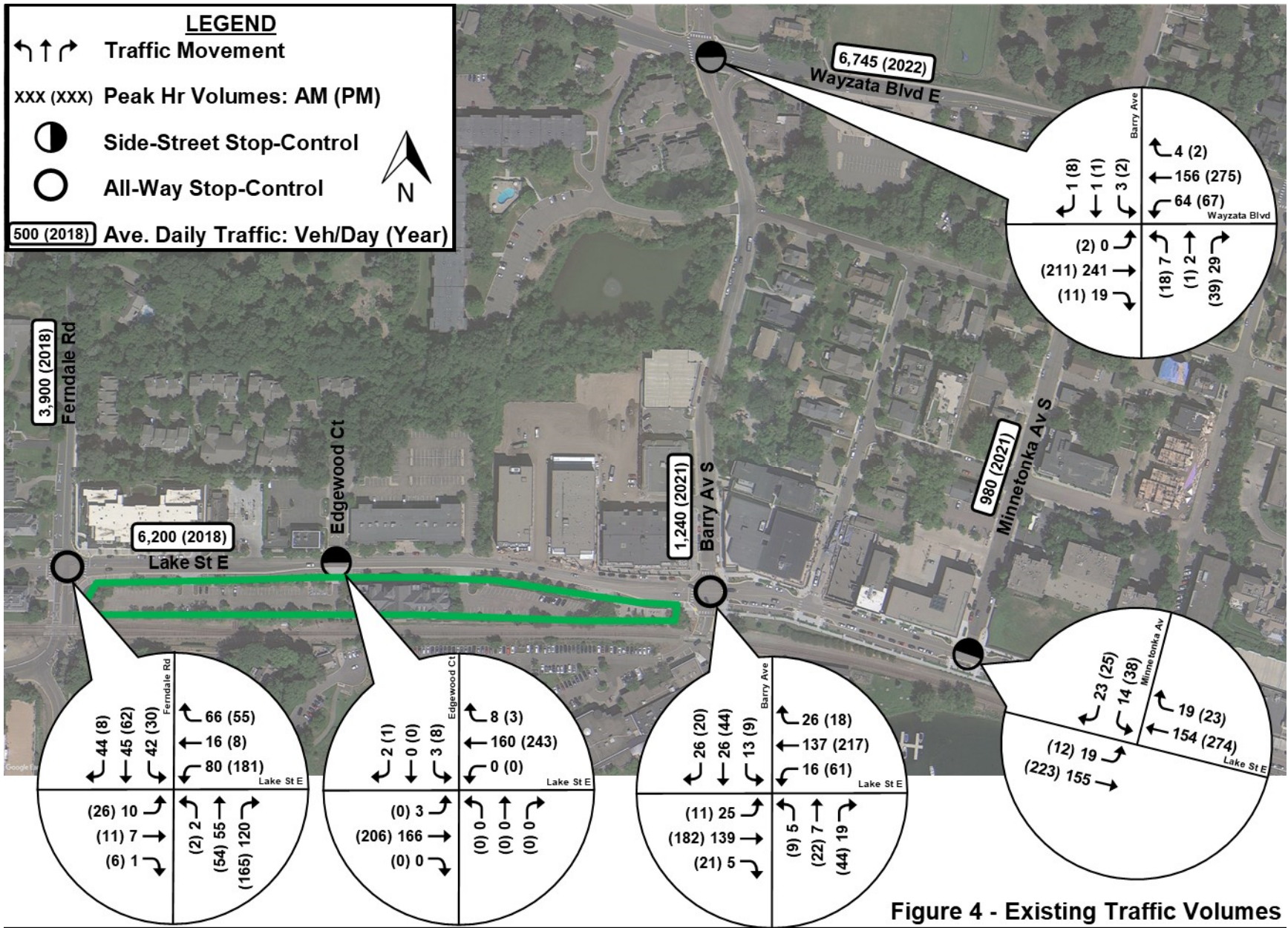


Figure 4 - Existing Traffic Volumes

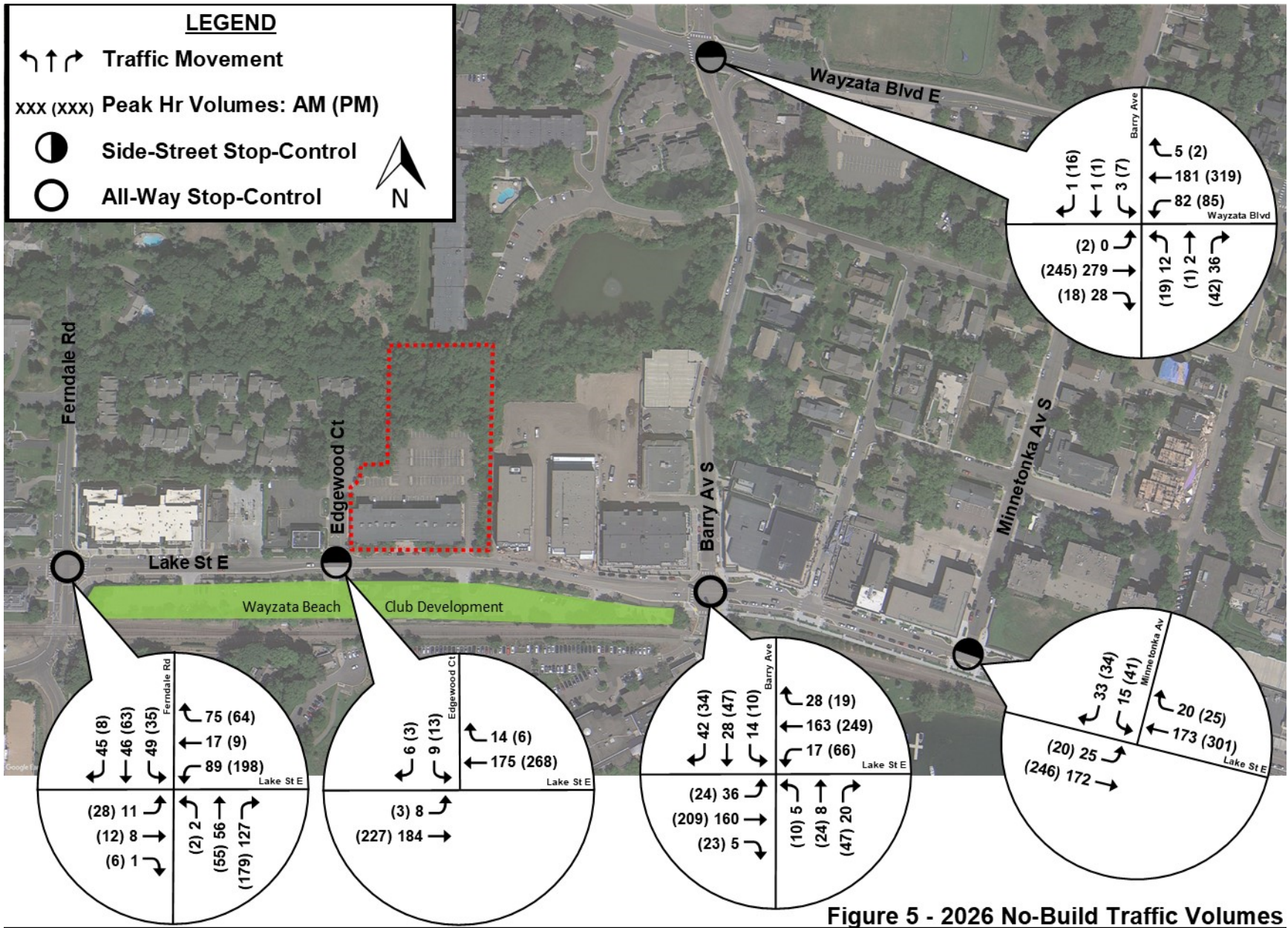


Figure 5 - 2026 No-Build Traffic Volumes

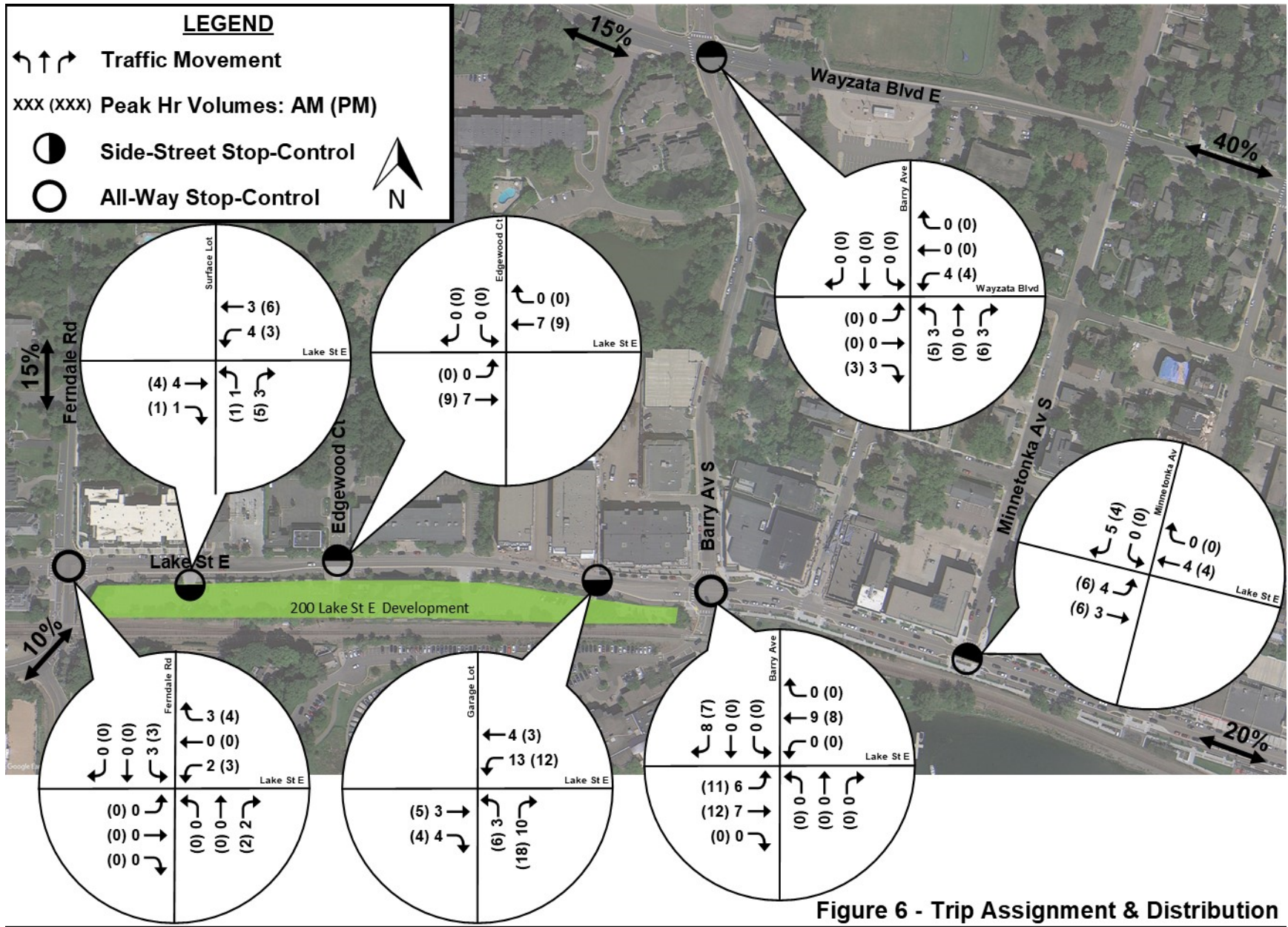


Figure 6 - Trip Assignment & Distribution

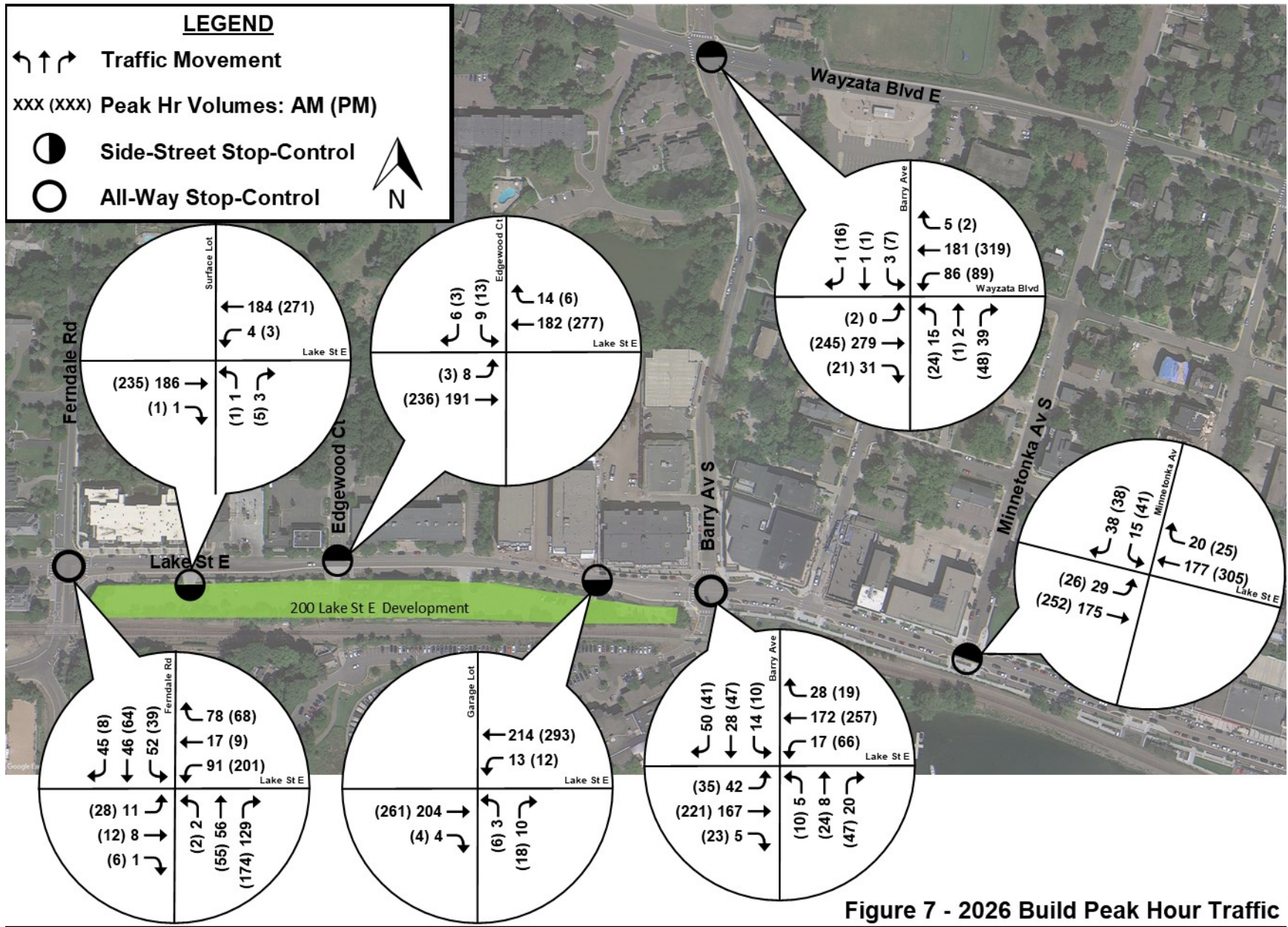


Figure 7 - 2026 Build Peak Hour Traffic