Attachment C

COUNTY	CITYTWP	PROPNAME	ADDRESS	TOWI	RANG	SEC	QUARTER	USGS	REPORTNUI	NRH	CE DOI	INVENTNUM
Hennepin												
	Hopkins											
		Chicago, Milwaukee, and Saint Paul Railroad Depot	Canadian Pacific Railroad at TH 169	28	24	6	NW-NW	Hopkins	HE-2010-21H			HE-HOC-345
	Minneapolis											
		Kenilworth Railroad Bridge (Minneapolis and Saint Louis Railway Bridge)	over Kenilworth Canal	28	24	6	NW-SE	Minneapolis South	HE-2012-9H		Y	HE-MPC-1850
		Pedestrian Bridge over Kenilworth Lagoon (Minneapolis and St. Louis Railroad Bridge)		28	24	6	NW-NW	Minneapolis South	HE-2012-9H		Y	HE-MPC-1851
	St. Louis Park											
		St. Louis Park Roadside Parking Are	SE corner of the jct. Of TH 100 and TH 7	28	24	6	S-SW-NW	Mineapolis South	xx-98-6H			HE-SDC-017
		Peavey-Haglin Concrete Grain Elevator	Highway 7 & Highway 100	28	24	6	C-S-NW	Minneapolis South		Y		HE-SLC-009
		Lilac Way Mn. Hwy. 100	Mn. Hwy. 100	28	24	6		Minneapolis South	HE-94-19H			HE-SLC-015
		St. Louis Park Roadside Parking Area	5025 Hwy 7	28	24	6	SW-SW-NW	Minneapolis South	HE-2010-20H			HE-SLC-017
		St. Louis Park Roadside Parking Area		28	24	6	SW-SW-NW	Minneapolis South	XX-98-6H			HE-SLC-017
		Bridge No. 5598	over Minnetonka Blvd on MNTH 100	28	24	6						HE-SLC-018
		Bridge No. 5462	carries MNTH 7 over MNTH 100	28	24	6		Minneapolis South				HE-SLC-021
		Bridge No. 5308	MNTH 100 / under Soo Line RR	28	24	6						HE-SLC-025
		Bridge No. 5309	MNTH 100 / under C&NW RY	28	24	6						HE-SLC-026
		Woodmark Industries Building	4601 Hwy 7	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-052
		Northland Aluminum, Inc.	5005 Hwy 7	28	24	6	SW-NW	Minneapolis South	HE-2010-20H			HE-SLC-054
		Hoffman Callan Company	3007 Highway 7/3000 France Ave. S	28	24	6	NE-NE	Minneapolis South	HE-2010-20H		Y	HE-SLC-055
Hennepin												
	St. Louis Park											
		House	3109 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-076
		House	3105 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-077
		House	3101 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-SLC-078			HE-SLC-078
		House	3100 Natchez Ave S	28	24	6	NE-NW	Minneapolis South				HE-SLC-079
		House	3049 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-080
		House	3045 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-081
		House	3041 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-082
		House	3037 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-083
		House	3029 Natchez Ave S	28	24	6	NW-NE	Minneapolis South	HE-2012-20H			HE-SLC-084
		House	3040 Natchez Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-085
		House	3044 Natchez Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-086
		House	3052 Natchez Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-087
		House	3029 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-088
		House	3033 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-089
		House	3037 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-090
		House	3041 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-091
		House	3045 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-092
		House	3049 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-093
		House	3024 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-094
		House	3028 Monterey Ave S	28	24	6	NW-NE		HE-2010-20H			HE-SLC-095
		House	3034 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-096
		House	3044 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-097
		House	3048 Monterey Ave	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-098
Hennepin												
	St. Louis Park											
		House	3100 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-099
		House	3104 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-100
		House	3108 Monterey Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-101
		Apartments	4516 Hwy 7	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-102
		House	3046 Lynn Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-103
		Apartments	3030 Raleigh Ave S	28	24	6	NW-NW	Minneapolis South	HE-2010-20H			HE-SLC-104
		Business	4725 Hwy 7	28	24	6	SE-NW	Minneapolis South	HE-2010-20H			HE-SLC-106
		Business	4521 Hwy 7	28	24	6	NW-NE	Minneapolis South				HE-SLC-107
		Business		28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-107
		Business	3113 Lynn Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-108
		Business	3119 Lynn Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-109
		Commercial Building	4838 35th St W	28	24	6	SE-NW	Minneapolis South	HE-2015-8H			HE-SLC-1094
		Apartment Building	4300-4310 Hwy 7	28	24	6	NW-NE	Minneapolis South	HE-2015-8H			HE-SLC-1097
		House & Garage	3040-3042 Lynn Ave S	28	24	6	NW-NE	Minneapolis South	HE-2015-8H			HE-SLC-1099
		Business	3200 Lynn Ave S	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-110
		Park Towers Apartments	4810 Highway 7	28	24	6	NE-NW	Minneapolis South				HE-SLC-1101
		Apartment Building	4405 Hwy 7	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-111
		Business	4301 Hwy 7	28	24	6	NW-NE	Minneapolis South	HE-2010-20H			HE-SLC-112
		House	3907 31st St W	28	24	6	NE-NE	Minneapolis South				HE-SLC-113
		House		28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-113
		House	3917 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-114
		House	3921 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-115
		Apartment Building	4009 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-116
Hennepin												
	St. Louis Park											
		House	4013 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-117
		House	4101 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-118
		House	4105 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-119
		House	4117 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-120
		House	4125 31st St W	28	24	6	NE-NE	Minneapolis South	HE-2010-20H			HE-SLC-121
		House	3057 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-124
		House	3053 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-125
		House	3049 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-126
		House	3041 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-127
		House	3050 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-128
		House	3044 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-129
		House	3040 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-130
		House	3036 Ottawa Ave S	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-131
		Business	4906 35th St W	28	24	6	NE-SW	Minneapolis South	HE-2010-20H			HE-SLC-132
		Business	4905 35th St W	28	24	6	NE-SW	Minneapolis South	HE-2010-20H			HE-SLC-133
		Business	4930 35th St W	28	24	6	NE-SW	Minneapolis South	HE-2010-20H			HE-SLC-134
		Business	5100 35th St W	28	24	6	NW-SW	Minneapolis North	HE-2010-20H			HE-SLC-135
		Business	3501 State Hwy 100 S	28	24	6	NW-SW	Minneapolis South	HE-2010-20H			HE-SLC-136
		St. Louis Park City Hall	5005 Minnetonka Blvd	28	24	6	NE-NW	Minneapolis South	HE-2010-20H			HE-SLC-311
		Minneapolis and St. Louis Railroad Bridge (Bridge No. 5309)		28	24	6	NW-NW	Minneapolis South				HE-SLC-517
		Chicago, Milwaukee, and St. Paul Railroad Bridge (Bridge No. 5308)	over TH 100	28	24	6	NW-NW	Minneapolis South	HE-2010-21H			HE-SLC-520

		B'nai Abraham Synagogue (B'nai Emet Synagogue)	3115 Ottawa Ave.	28	24	6	NW-NE	Minneapolis South	HE-SLC-566
Hennepin									
	St. Louis Park								
		commercial building	4330 Highway 7	28	24	6	NW-NE		HE-SLC-567
		Park Tower Apartments	4810 Highway 7	28	24	6	NE-NE	Hopkins	HE-SLC-574

Attachment D

MEMORANDUM

To: Jennifer Monson
City of St. Louis Park

From: JoNette Kuhnau, P.E., PTOE
Jacob Rojer, P.E.

Date: June 29, 2021

Re: Beltline Station Development
Traffic Technical Memorandum – June 2021 Update
St. Louis Park, MN

Introduction

Sherman Associates Development, LLC is proposing to redevelop an approximately 7-acre site south of Hennepin County State Aid Highway (CSAH) 25 and east of Beltline Boulevard in St. Louis Park, Minnesota. The proposed redevelopment is a mix of residential, commercial, and transit-oriented uses consistent with the City of St. Louis Park's 2040 Future Land Use plan. The development is proposed to include approximately 403 apartment units in three buildings, a 20,000 square foot grocery store, and 1,800 square feet of retail space attached to the park-and-ride ramp that will be located on the site. The conceptual site plan is provided in **Attachment A**.

The purpose of this memorandum is to document the traffic analysis completed for the development, determine the impacts of the proposed access changes, and identify transportation infrastructure improvements or mitigations. The methodology, assumptions, and results of the analysis are presented in the following sections.

Background Information

Study Area

The study area includes CSAH 25 between the Minnesota Trunk Highway (TH) 100 Northbound Ramps and Lynn Avenue, and Beltline Boulevard between CSAH 25 and Park Glen Road. The intersections that were analyzed are listed below and are shown in **Exhibit 1**. All exhibits are included in **Attachment B**.

- CSAH 25 & Beltline Boulevard/Ottawa Avenue S
- Beltline Boulevard & CSAH 25 South Service Road
- Beltline Boulevard & Park Glen Road
- CSAH 25 & Lynn Avenue
- CSAH 25 & Monterey Avenue (future intersection)

- Beltline Boulevard & Backage Road (future intersection)

The CSAH 25 & TH 100 Northbound Ramps intersection was also included in the traffic modeling to accurately represent vehicle progression on CSAH 25, but traffic operations for this intersection were not evaluated.

Vehicle turning movement volume, pedestrian, and bicycle counts for the existing study intersections were collected between 6:00 AM and 7:00 PM on Wednesday, September 4, 2019. The counts were conducted with schools in session. The vehicle turning movement counts included vehicle classifications used to determine heavy vehicle percentages for the approaches at the study intersections.

The existing traffic signal timing information for the CSAH 25 & TH 100 Northbound Ramps intersection and the CSAH 25 & Beltline Boulevard/Ottawa Avenue S intersection were provided by MnDOT. The traffic signal at the CSAH 25 & Beltline Boulevard/Ottawa Avenue S intersection is currently running with a 190 second cycle length in the AM peak hour and a 200 second cycle length in the PM peak hour.

Roadway Characteristics

The existing conditions are not included in this report due to magnitude of planned roadway improvements and speed limit adjustments within the study area that will take place between 2021 and 2024. An existing conditions analysis would therefore not be informative due to the number of changes in the transportation conditions. The following provides a detailed description of the existing roadways that are included in the study area and the proposed changes by 2024:

Beltline Boulevard is currently a four-lane undivided roadway that runs in the north/south direction along the west side of the proposed redevelopment. Beltline Boulevard is a Municipal State Aid Street (MSAS) and is a Major Collector roadway per the City of St. Louis Park's Comprehensive Plan, with an improvement project planned for 2021. The project will make the following changes in the study area:

- Convert Beltline Boulevard from a 4-lane section to a 3-lane section from 36th Street to Park Glen Road with a single lane in each direction and a two-way left turn lane.
- On-street bike lanes and trails will be provided on both sides of Beltline Boulevard.

Based on the City's recommended speed limit map, Beltline Boulevard is anticipated to have a posted speed limit of 25 miles per hour (mph). The annual average daily traffic (AADT) in 2018 was 10,500 vehicles per day (vpd).

CSAH 25 is currently a four-lane divided roadway that runs in the east/west direction along the north side of the proposed redevelopment. CSAH 25 is classified as a Minor Augmentor roadway. The 2018 AADT on CSAH 25 at Lynn Avenue is 18,200 vpd and the posted speed limit is 45 mph.

In 2018, St. Louis Park and Hennepin County collaborated on a study to explore roadway layouts that would transform CSAH 25 between TH 100 and France Avenue into an "urban boulevard". The study reviewed potential options for repurposing the right-of-way to provide enhanced multimodal facilities, traffic calming, and landscaped boulevards. Currently, no timeframe for implementation of these improvements has been identified.

Park Glen Road is a two-lane undivided roadway that serves as an access road for commercial and residential developments on the east and west sides of Beltline Boulevard. Park Glen Road is designated as a city street in the City of St. Louis Park's Comprehensive Plan. Per the City's recommended speed limit map, Park Glen Road is anticipated to have a speed limit of 20 mph. AADT volumes on Park Glen Road are not available.

Lynn Avenue is a local city street and does not have a published AADT volume. A 13-hour traffic count conducted at the Lynn Avenue & CSAH 25 South Service Road intersection in September 2019 was used to estimate a total daily volume of approximately 350 vehicles per day. There is currently no posted speed limit on Lynn Avenue.

Pedestrian, Bicycle, and Transit Facilities

Pedestrian

With the city's planned improvements on Beltline Boulevard, pedestrian facilities will be provided on both sides of the roadway between Park Glen Road and 36th Street, which will tie into the trails being constructed on both sides of the roadway between Park Glen Road and CSAH 25 as part of the METRO Green Line Extension/Southwest Light Rail (SWLRT). Additionally, the Cedar Lake Trail runs along the south side of the site and provides access to the regional trail network. The SWLRT project will construct a bridge to grade separate the Cedar Lake Trail over Beltline Boulevard.

There are not currently sidewalks along CSAH 25. However, according to the St. Louis Park Comprehensive Plan the corridor is planned for future pedestrian facilities.

Bicycle

The reconstruction of Beltline Boulevard will provide trails on both sides of the road as well as the on-street bicycle facilities. As previously mentioned, the facilities along Beltline Boulevard will connect to the Cedar Lake Trail on the south edge of the site. This provides access to the regional bicycle/trail network.

Transit

Transit service is currently available near the project area and will be expanded in the near future. There is one bus route within the study area, and the METRO Green Line Beltline Boulevard Station is currently under construction and is anticipated to open in 2024.

Route 17F is a local bus route from St. Louis Park to Downtown Minneapolis with major stops along Minnetonka Boulevard, Lake Street, and Hennepin Avenue. The 17F is a spur route of Route 17 and is currently not running due to the COVID-19 pandemic. It is assumed that the route will resume service in the future. The connecting bus service at the Beltline Boulevard Station to support the METRO Green Line will be determined by Metro Transit prior to opening days of the LRT service.

METRO Green Line Extension is a future LRT route that will operate from downtown Minneapolis to Eden Prairie. The Beltline Station will be located on the east side of Beltline Boulevard immediately south of the proposed development. Based on the proximity to this station, it is anticipated that the METRO Green Line will be the most likely alternate mode of transportation for site trips.

Future Year (2024) Analysis

Future Year Conditions

Several improvements are planned in the study area as part of the SWLRT project and as part of City-led projects. The following improvements and changes are being constructed in the study area:

- Light rail transit (LRT) operating south of the site in the existing rail corridor, operating at 10-minute headways in each direction and crossing Beltline Boulevard with twelve LRT crossings per hour during peak periods.
- Install a new traffic signal at the CSAH 25 & Lynn Avenue intersection, with a dedicated eastbound right-turn lane and a dedicated westbound left-turn lane.
- Install a new traffic signal on Beltline Boulevard at the rail crossing to prevent vehicle queues from extending across the tracks (queue cutter signal).
- Grade separate the Cedar Lake Trail over Beltline Boulevard just north of the railroad crossing and remove the existing at-grade trail crossing.
- Improve and expand the capacity at the CSAH 25 & Beltline Boulevard/Ottawa Avenue S intersection:
    - Extend the westbound left turn lane to approximately 460 feet.
    - Construct a second northbound left turn lane.
    - Extend the northbound right turn lane.
- Close the CSAH 25 South Service Road east of Beltline Boulevard.
- Construct a Backage Road that connects Lynn Avenue to Beltline Boulevard and provides access for buses and park-and-ride vehicles.
- Add a right-in only access on northbound Beltline Boulevard to connect to the Backage Road.
- Construct a right-in only access from CSAH 25 to Monterey Avenue, south of CSAH 25.
- Convert Beltline Boulevard from a 4-lane section to a 3-lane section from 36th Street to Park Glen Road with a single lane in each direction and a two-way left turn lane (City-led project).
- On-street bike lanes and trails will be provided on both sides of Beltline Boulevard (City-led project).

Three analysis scenarios were analyzed to determine the impacts of the proposed redevelopment and the proposed accesses on both Beltline Boulevard and CSAH 25. The proposed development is anticipated to be fully built out by 2023, so 2024 was chosen as the future year for analysis because it is one year after the development opens and also coincides with the opening year for the METRO Green Line extension. The future year analysis scenarios include:

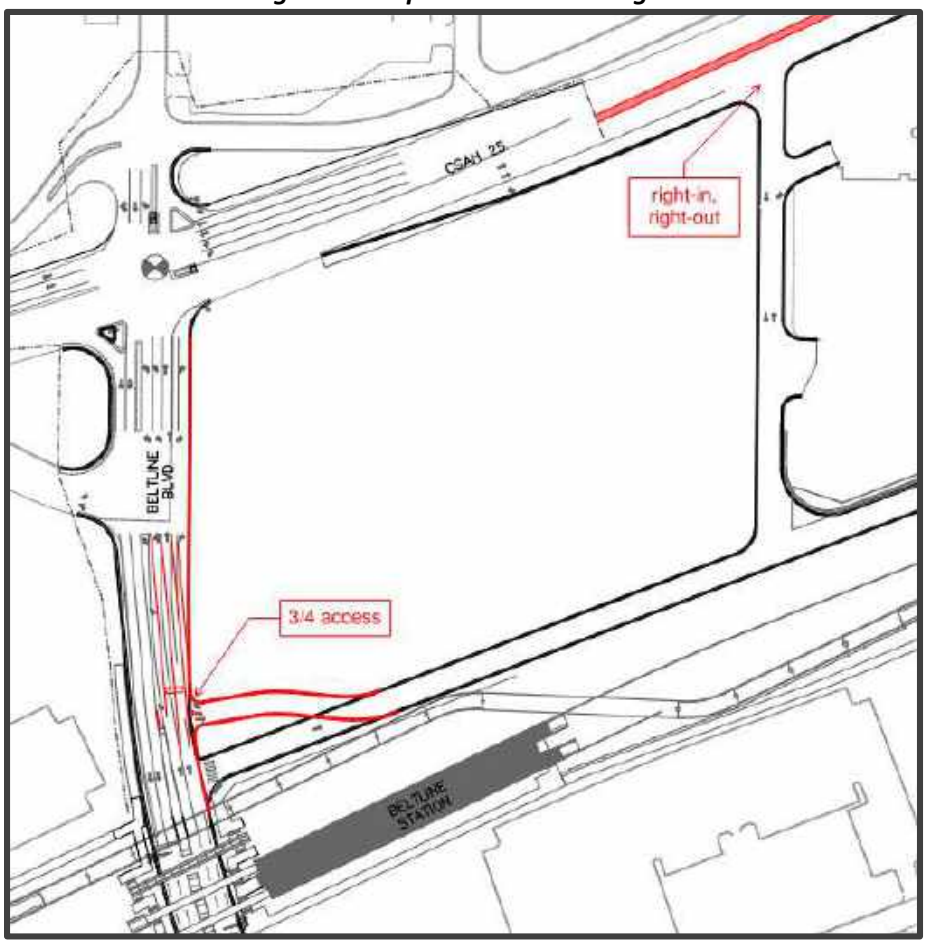
- Opening Year (2024) No-Build Conditions – The no-build traffic volumes are the anticipated future traffic volumes with area growth taken into consideration and the

inclusion of the planned Beltline Station park-and-ride. In this scenario, access would be provided to the proposed site based on the improvements described above.

- Opening Year (2024) Scenario 1 Build Conditions – The Scenario 1 Build traffic volumes would be the anticipated traffic from the proposed development in addition to the no-build traffic volumes. Access to the site would remain the same as Opening Year (2024) No-Build Conditions. The geometry and intersection control for both Opening Year (2024) No-Build Conditions and Opening Year (2024) Build Scenario 1 Conditions is shown in **Exhibit 2**.
- Opening Year (2024) Scenario 2 Build Conditions – The Scenario 2 Build traffic volumes would be the anticipated traffic from the proposed development in addition to the no-build traffic volumes. The development project is proposing site access modifications in order to make the retail component of the site viable. These changes would better facilitate access into and out of the site and include:
    - Convert the right-in only access on Beltline Boulevard that connects to the Backage Road to a ¾ access and shift the intersection further to the north. This would add left-in access from southbound Beltline Boulevard to the Backage Road and right-out access from the Backage Road to northbound Beltline Boulevard. The proposed ¾ access is located to still provide a minimum 60-foot median between the railroad crossing and the access, which meets the Federal Railroad Administration (FRA) requirements for the proposed quiet zone.
    - Add right-out access from Monterey Avenue to eastbound CSAH 25 to convert the CSAH 25 & Monterey Avenue intersection to a right-in/right-out intersection. The location of the access would remain the same as the Opening Year (2024) No-Build scenario.

  The proposed changes to the site accesses are shown in **Figure 1**. The geometry and intersection control for Opening Year (2024) Build Scenario 2 Conditions at all study intersections is shown in **Exhibit 3**.

Figure 1: Proposed Access Changes



Volume Development

Background Growth

The projected changes in traffic volumes and patterns between the existing and forecast Opening Year (2024) No-Build Conditions included background traffic growth and additional traffic generated by the proposed Beltline Station park-and-ride. The following annual growth rates were used to represent background growth based on information in the Saint Louis Park 2040 Comprehensive Plan:

- 0.7% per year on CSAH 25 west of Beltline Boulevard/Ottawa Avenue S
- 0.8% per year on CSAH 25 east of Beltline Boulevard/Ottawa Avenue S
- 1.2% on Beltline Boulevard/Ottawa Avenue S

Trip generation estimates and regional trip distribution for the park-and-ride facility were based on the same rates and distribution used for the SWLRT project. The trip distribution and trip assignment for the park-and-ride are shown in **Exhibits 4 & 5**, respectively. The trips generated by the park-and-ride were added to the background growth to produce the total forecast Opening Year (2024) No-Build Conditions traffic volumes, which are shown in **Exhibit 6**.

Trip Generation and Distribution

The trip-generating potential of the proposed development was calculated using information within the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition. Standard ITE trip rates were used to develop the gross new trips generated by the site. The trip generation was based on the following uses:

- Multifamily Housing (Mid-Rise) (ITE code 221)
- Supermarket (ITE code 850)
- Coffee/Donut Shop without Drive-Thru (ITE code 936)

Based on the proximity to the Beltline Boulevard LRT station, a mode split of 15% transit was assumed for the residential land use and 10% transit was used for the commercial land uses. Site generated trips are expected to exhibit multiple routing patterns when traveling to and from the subject site, as described below:

- **Internal Capture** – The proposed commercial use on the proposed site is intended to complement the residential use; thus, it is likely that some patrons that visit the commercial use will originate from the residential land use on site and will not travel on external roadways to access the commercial land use. To reflect these "internally captured" trips, an internal capture reduction was applied for the proposed residential and commercial uses. Internal capture rates are based on Table 6.1 in the *ITE Trip Generation Handbook, 3rd Edition*.
- **Pass-by** – Pass-by traffic reflects the travel patterns of motorists who are already traveling on the adjacent study roadways and stop at the site en route to another primary destination.
- **Primary Trips** – Primary trips reflect new traffic volumes generated by the proposed development that are assumed to approach and depart on the same route. Trips to/from the site that are not pass-by or internal capture trips are expected to be primary trips.

Table 1 summarizes the trip generation for the proposed site. Note that the development site plan shows a 20,000 square foot grocery store, however a 32,000 square foot grocery store was analyzed to be conservative.

Table 1: Proposed Site Vehicle Trip Generation

ITE Land Use Code	Land Use	Size	Units	AM Peak			PM Peak		
				Total	In	Out	Total	In	Out
221	Multifamily Housing (Mid-Rise)	403	Dwelling Unit(s)	145	40	105	180	110	70
850	Supermarket	32	1,000 Sq Ft	125	75	50	295	150	145
936	Coffee/Donut Shop w/o D.T.	1.8	1,000 Sq Ft	185	95	90	65	35	30
Total Site Trips				455	210	245	540	295	245
Total Rounded Residential Trips				**145**	**40**	**105**	**180**	**110**	**70**
Residential Internal Capture				0	0	0	60	45	15
Residential Mode Share (15% Reduction in Vehicle Trips)				20	5	15	20	10	10
Residential Pass-by Reduction				0	0	0	0	0	0
Total External Residential Vehicle Trips				**125**	**35**	**90**	**100**	**55**	**45**
Total Rounded Commercial Trips				**310**	**170**	**140**	**360**	**185**	**175**
Commercial Internal Capture				0	0	0	60	15	45
Commercial Mode Share (10% Reduction in Vehicle Trips)				30	15	15	30	15	15
Commercial Pass-by Reduction				0	0	0	90	50	40
Total External Commercial Vehicle Trips				**280**	**155**	**125**	**180**	**105**	**75**
Total External Vehicle Trips				**405**	**190**	**215**	**280**	**160**	**120**

The trips generated by the proposed development were distributed through the study network based on the two scenarios of Opening Year (2024) Build Conditions. Separate distributions were utilized for residential trips and commercial trips based on the location of the residential use on the east side of the site and residents' familiarity with access from routes other than Beltline Boulevard.

The Scenario 1 development trip distribution for residential trips is shown in **Exhibit 7**, and **Exhibit 8** shows the Scenario 1 development trip distribution for commercial trips. The Scenario 1 combined trip assignment for residential and commercial (net external vehicle trips) is shown in **Exhibit 9**. The Scenario 1 pass-by trips for the supermarket land use were also distributed and assigned throughout the network and are shown in **Exhibit 10**. The total traffic volumes for Opening Year (2024) Scenario 1 Build Conditions including the background growth, development net external vehicle trips, and development pass-by trips are shown in **Exhibit 11**.

The Scenario 2 development trip distribution for residential trips is shown in **Exhibit 12**, and **Exhibit 13** shows the Scenario 2 development trip distribution for commercial trips. The Scenario 2 combined trip assignment for residential and commercial (net external vehicle trips) is shown in **Exhibit 14**. The Scenario 2 pass-by trips for the supermarket land use were also distributed and assigned throughout the network and are shown in **Exhibit 15**. The park-and-ride traffic was redistributed for Opening Year (2024) Scenario 2 Build Conditions based on the changes in site access. The total traffic volumes for Opening Year (2024) Scenario 2 Build Conditions including the background growth, redistributed park-and-ride trips, redistributed development net external trips, and development pass-by trips are shown in **Exhibit 16**.

Traffic Analysis Methodology

Traffic operations for the weekday AM and PM peak hours were analyzed at each of the study intersections. The AM and PM peak hours were determined to occur from 7:30-8:30 AM and 4:45-5:45 PM based on the existing traffic data.

The capacity analysis was performed using Vissim software to determine the delay and level of service (LOS) for the study intersections. Vissim was chosen as the appropriate software for this analysis due to its ability to model the future SWLRT alignment immediately adjacent to the site. The LOS boundaries for signalized and unsignalized intersections, as documented in the *Highway Capacity Manual 6th Edition,* are provided in **Table 2**.

Table 2: Level of Service Boundaries

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

Opening Year (2024) No-Build Conditions Analysis

The Opening Year (2024) No-Build Conditions modeling was conducted to identify the expected traffic operations for the Opening Year (2024) without the proposed project.

An intersection capacity analysis was performed at the study intersections using the Opening Year (2024) No-Build Conditions AM and PM peak hour turning movement volumes (as shown in Exhibit 6). **Table 3** provides a summary of the average delay (seconds per vehicle) and LOS for each individual movement at the study intersections. The queue analysis table for the 2040 No Build conditions analysis is included in **Attachment C**.

Table 3: No-Build (2024) Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Beltline Boulevard/ Ottawa Ave S	Signal	EB	Left	54.4	D	72.2	E
			Through	17.3	B	43.6	D
			Right	3.1	A	12.2	B
		WB	Left	93.3	F	94.1	F
			Through	31.3	C	39.2	D
			Right	7.1	A	5.8	A
		NB	Left	70.3	E	69.3	E
			Through	42.9	D	23.9	C
			Right	8.1	A	11.2	B
		SB	Left	98.9	F	100+	F
			Through	86.4	F	87.7	F
			Right	13.1	B	17.4	B
		Intersection		30.4	C	42.6	D
Beltline Boulevard & CSAH 25 South Service Rd	Side Street Stop	EB	Left	29.7	D	100+	F
			Right	5.5	A	14.0	B
		NB	Left	6.7	A	19.9	C
			Through	10.5	B	31.1	D
		SB	Through	0.6	A	3.0	A
			Right	0.9	A	1.1	A
		Intersection		5.5	A	18.7	C
Beltline Boulevard & Park Glen Rd	Side Street Stop	EB	Left	23.2	C	100+	F
			Through	0.0	A	0.0	A
			Right	14.8	B	100+	F
		WB	Left	16.3	C	100+	F
			Through	0.0	A	100+	F
			Right	11.0	B	100+	F
		NB	Left	5.0	A	29.5	D
			Through	1.0	A	22.8	C
			Right	1.1	A	20.0	C
		SB	Left	9.0	A	38.7	E
			Through	2.9	A	3.9	A
			Right	2.8	A	6.4	A
		Intersection		4.7	A	35.6	E

Table 3 (cont.): No-Build (2024) Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Lynn Ave	Signal	EB	Through	4.2	A	6.2	A
			Right	2.6	A	2.9	A
		WB	Left	28.8	C	44.3	D
			Through	1.7	A	3.9	A
		NB	Left	36.4	D	40.9	D
			Right	14.2	B	29.0	C
		Intersection		3.8	A	7.8	A
CSAH 25 & Monterey Ave	Uncontrolled	EB	Through	0.4	A	0.6	A
			Right	1.7	A	1.3	A
		WB	Through	0.8	A	0.6	A
		Intersection		0.7	A	0.6	A
Beltline Boulevard & Backage Road	Uncontrolled	NB	Through	6.7	A	22.5	C
			Right	7.2	A	30.2	D
		SB	Through	3.3	A	4.9	A
		Intersection		5.0	A	13.5	B

There are a significant amount of movements at CSAH 25 & Beltline Boulevard that have longer delays in both peak hours, this is most likely attributed to the longer cycle lengths in the peak hours. However, all intersections operate at LOS D or better under the Opening Year (2024) No-Build Conditions except for the following:

- Beltline Boulevard & Park Glen Road – The eastbound and westbound movements in the PM peak hour operate at LOS F with excessive delays. The poor LOS is primarily caused by northbound queues on Beltline Boulevard and the decreased gaps on Beltline Boulevard due to the higher traffic volumes. The need to signalize this intersection is anticipated to be needed by Opening Day (2024) No-Build Conditions based on the results of the analysis. Without signalizing this intersection, the delay and LOS results are anticipated to deteriorate even further into the future.

It should be noted that the capacity improvements completed as part of the SWLRT project maximize the realistic capacity of the study area. Any additional mitigation to increase capacity may not be feasible due to property impacts and improvement costs.

Opening Year (2024) Scenario 1 Build Conditions Analysis

The Opening Year (2024) Scenario 1 Build Conditions modeling was conducted to identify the expected traffic operations for the Opening Year (2024) with the SWLRT roadway geometrics and the proposed development. This option is not viable from a development standpoint, as the retail component of the site needs additional access to attract and retain tenants. However, this analysis will be used as a comparison to determine the change in operations between Scenarios 1 and 2

at the Beltline Boulevard & Backage Road intersection and the CSAH 25 & Monterey Avenue intersection.

An intersection capacity analysis was performed at the study intersections using the Opening Year (2024) Scenario 1 Build Conditions AM and PM peak hour turning movement volumes (as shown in Exhibit 11). **Table 4** provides a summary of the average delay (seconds per vehicle) and LOS for each individual movement of the study intersections. The queue results table for the Scenario 1 Build Conditions analysis is included in **Attachment C**.

Table 4: Opening Year (2024) Scenario 1 Build Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Beltline Boulevard/ Ottawa Ave S	Signal	EB	Left	57.0	E	91.0	F
			Through	19.9	B	62.7	E
			Right	3.8	A	25.8	C
		WB	Left	94.1	F	100+	F
			Through	31.7	C	39.8	D
			Right	11.0	B	7.5	A
		NB	Left	68.6	E	76.0	E
			Through	47.7	D	24.9	C
			Right	8.2	A	11.6	B
		SB	Left	100+	F	100+	F
			Through	84.4	F	95.9	F
			Right	15.7	B	21.4	C
		Intersection		32.2	C	51.8	D
Beltline Boulevard & CSAH 25 South Service Rd	Side Street Stop	EB	Left	31.5	D	100+	F
			Right	5.3	A	13.8	B
		NB	Left	6.5	A	24.0	C
			Through	11.8	B	35.4	E
		SB	Through	0.6	A	4.8	A
			Right	1.0	A	1.5	A
		Intersection		5.9	A	21.5	C
Beltline Boulevard & Park Glen Rd	Side Street Stop	EB	Left	21.8	C	100+	F
			Through	0.0	A	0.0	A
			Right	17.3	C	100+	F
		WB	Left	20.4	C	100+	F
			Through	0.0	A	100+	F
			Right	12.7	B	100+	F
		NB	Left	4.7	A	32.3	D
			Through	0.9	A	38.6	E
			Right	1.0	A	31.0	D
		SB	Left	9.8	A	49.7	E
			Through	2.7	A	5.8	A
			Right	2.8	A	3.8	A
		Intersection		4.8	A	49.4	E

Table 4 (cont.): Opening Year (2024) Scenario 1 Build Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Lynn Ave	Signal	EB	Through	9.9	A	14.0	B
			Right	5.0	A	7.8	A
		WB	Left	44.5	D	53.8	D
			Through	5.4	A	6.0	A
		NB	Left	43.7	D	51.3	D
			Right	32.8	C	43.0	D
		Intersection		11.8	B	16.4	B
CSAH 25 & Monterey Ave	Uncontrolled	EB	Through	0.6	A	2.1	A
			Right	2.2	A	2.2	A
		WB	Through	1.7	A	2.1	A
		Intersection		1.3	A	2.1	A
Beltline Boulevard & Backage Road	Uncontrolled	NB	Through	6.5	A	27.1	D
			Right	7.3	A	28.0	D
		SB	Through	3.2	A	6.9	A
		Intersection		4.9	A	16.7	C

The Opening Year (2024) Scenario 1 Build conditions analysis generally exhibits issues in the same locations as the Opening Year (2024) No-Build conditions analysis. However, some individual movements also had a change in LOS between the Opening Year (2024) No-Build Conditions analysis and the Opening Year (2024) Scenario 1 Build Conditions analysis.

- At the CSAH 25 & Beltline Boulevard/Ottawa Avenue S intersection, the eastbound through movement is anticipated to operate at LOS E under Opening Year (2024) Scenario 1 Build Conditions. This is primarily due to the additional site traffic that is utilizing CSAH 25 to access the site.
- The northbound through movement at the Beltline Boulevard & CSAH 25 South Service Road intersection is anticipated to operate at LOS E under Opening Year (2024) Scenario 1 Build Conditions due to queue spillback from the northbound queue at the CSAH 25 & Beltline Boulevard/Ottawa Avenue S intersection.
- The northbound through movement at the intersection of Beltline Boulevard & Park Glen Road are expected to operate at LOS E under Opening Year (2024) Scenario 1 Build Conditions. This is caused by the queue extending from the CSAH 25 intersection back to the intersection with Park Glen Road.

Opening Year (2024) Scenario 2 Build Conditions Analysis

The Opening Year (2024) Scenario 2 Build Conditions modeling was conducted to identify the expected traffic operations for the Opening Year (2024) with the proposed roadway geometrics that make the proposed commercial development viable. As previous mentioned, the proposed roadway changes are described below (and shown in Exhibit 3).

- Convert the right-in only access on Beltline Boulevard that connects to the Backage Road to a ¾ access and shift the intersection further to the north. This would add left-in access from southbound Beltline Boulevard to the Backage Road and right-out access from the Backage Road to northbound Beltline Boulevard.
- Add right-out access from Monterey Avenue to eastbound CSAH 25 to convert the CSAH 25 & Monterey Avenue intersection to a right-in/right-out intersection. The location of the access would remain the same as the Opening Year (2024) No-Build scenario.

An intersection capacity analysis was performed at the study intersections using the Opening Year (2024) Scenario 2 Build Conditions AM and PM peak hour turning movement volumes (as shown in Exhibit 16). **Table 5** provides a summary of the average delay (seconds per vehicle) and LOS for each individual movement of the study intersections. The queue results table for the Scenario 2 Build Conditions analysis is included in **Attachment C**.

Table 5: Opening Year (2024) Scenario 2 Build Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Beltline Boulevard/ Ottawa Ave S	Signal	EB	Left	56.7	E	98.1	F
			Through	26.0	C	70.6	E
			Right	6.3	A	27.9	C
		WB	Left	95.4	F	95.6	F
			Through	35.6	D	40.9	D
			Right	10.6	B	4.8	A
		NB	Left	55.9	E	60.7	E
			Through	42.6	D	23.6	C
			Right	8.3	A	11.2	B
		SB	Left	100+	F	100+	F
			Through	84.8	F	99.0	F
			Right	15.4	B	24.8	C
		Intersection		34.9	C	53.2	D
Beltline Boulevard & CSAH 25 South Service Rd	Side Street Stop	EB	Left	32.8	D	100+	F
			Right	5.0	A	30.2	D
		NB	Left	12.5	B	26.1	D
			Through	15.6	C	35.4	E
		SB	Through	0.8	A	3.8	A
			Right	0.9	A	1.6	A
		Intersection		7.6	A	22.1	C
Beltline Boulevard & Park Glen Rd	Side Street Stop	EB	Left	27.8	D	100+	F
			Through	0.0	A	0.0	A
			Right	17.0	C	100+	F
		WB	Left	23.4	C	100+	F
			Through	0.0	A	100+	F
			Right	13.8	B	100+	F
		NB	Left	5.8	A	25.5	D
			Through	0.9	A	35.1	E
			Right	1.1	A	32.0	D
		SB	Left	10.8	B	41.4	E
			Through	3.8	A	5.3	A
			Right	5.0	A	3.7	A
		Intersection		5.7	A	55.1	F

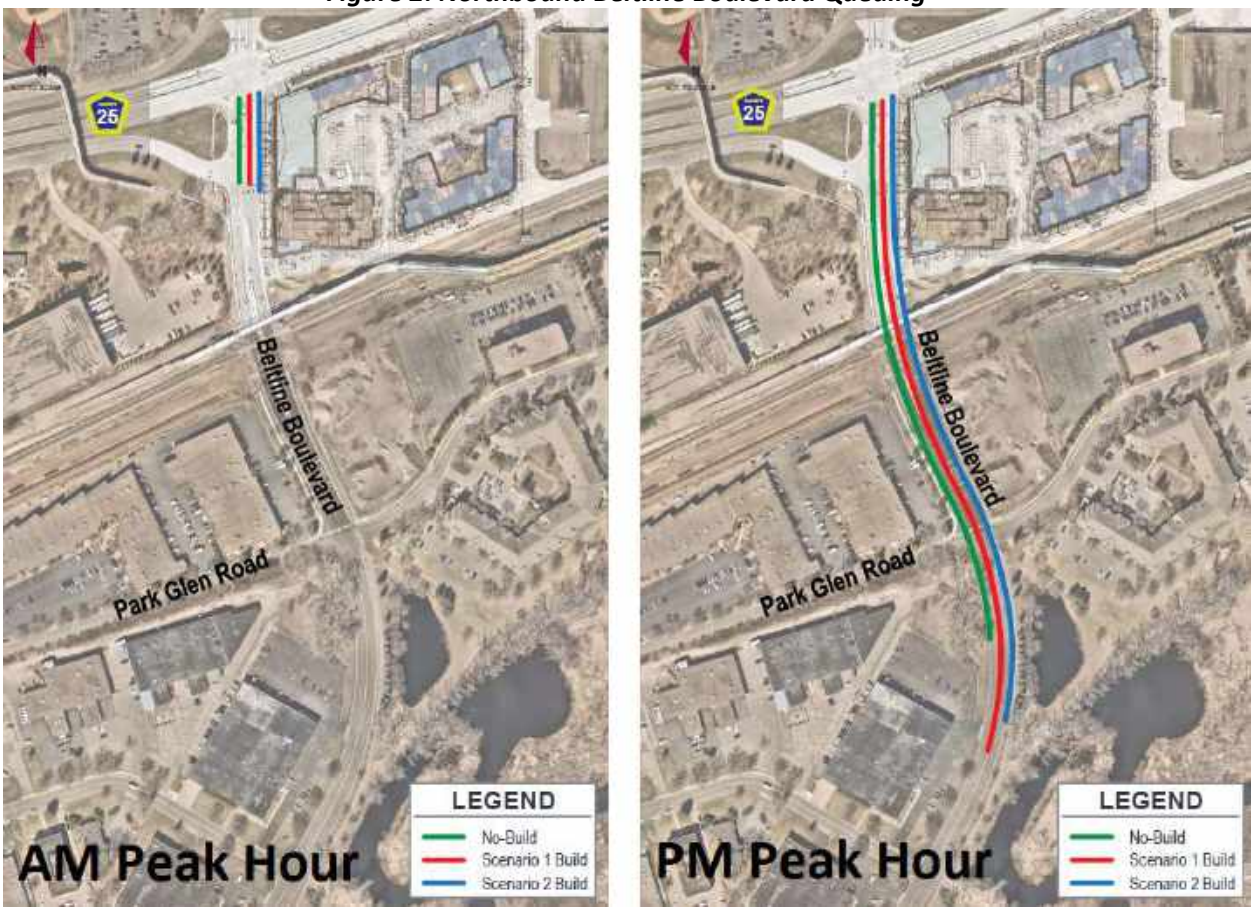
Table 5 (cont.): Opening Year (2024) Scenario 2 Build Conditions Delay Results

Intersection	Control Type	Approach	Movement	AM PEAK HOUR		PM PEAK HOUR	
				Delay	LOS	Delay	LOS
CSAH 25 & Lynn Ave	Signal	EB	Through	6.8	A	6.5	A
			Right	3.4	A	3.9	A
		WB	Left	41.7	D	46.0	D
			Through	3.0	A	3.4	A
		NB	Left	38.6	D	39.0	D
			Right	22.2	C	23.2	C
		Intersection		6.9	A	7.5	A
CSAH 25 & Monterey Ave	Side Street Stop	EB	Through	0.5	A	0.8	A
			Right	1.0	A	1.1	A
		WB	Through	1.7	A	1.2	A
		NB	Right	10.0	B	11.5	B
		Intersection		1.4	A	1.3	A
Beltline Boulevard & Backage Road	Side Street Stop	WB	Right	13.8	B	71.3	F
		NB	Through	7.5	A	30.2	D
			Right	8.2	A	30.1	D
		SB	Left	7.3	A	23.5	C
			Through	2.6	A	4.1	A
		Intersection		5.9	A	20.3	C

In general, the same movements are anticipated to have LOS E/F operations under Opening Year (2024) Scenario 2 Build Conditions compared to Opening Year (2024) Scenario 1 Build Conditions. The only additional movement that is expected to operate at LOS E under Opening Year (2024) Scenario 2 Build Conditions is the eastbound left-turn movement at CSAH 25 & Beltline Boulevard/Ottawa Avenue S in the AM peak hour. The overall increase in delay compared to Opening Year (2024) Scenario 1 Build Conditions is only approximately two seconds and this movement is not directly affected by development traffic.

As in Opening Year (2024) Scenario 1 Build Conditions, high levels of northbound delay and queuing on Beltline Boulevard are also anticipated in the PM peak hour of Opening Year (2024) Scenario 2 Build Conditions. **Figure 2** below illustrates the extent of queuing that is expected to be present along northbound Beltline Boulevard under all three analysis scenarios. Based on these queuing results, the northbound queues are not anticipated to differ significantly between Build Scenario 1 & 2.

Figure 2: Northbound Beltline Boulevard Queuing



Site Access Comparison & Study Area Mitigations

Safe and convenient access is paramount to be able to lease space, attract tenants and customers, and make this transit oriented development a success. The analysis for all scenarios shows LOS E vehicular operations at several study intersections, but the proposed site is in a prime location to encourage users to access the site via other modes of transportation.

Site Access

Beltline Boulevard/Backage Road ¾ Access: Perhaps the most critical access point for the success of the proposed development is the ¾ access on Beltline Boulevard. The operational results and benefits of the additional southbound left-turn and westbound right-turn movements are described below.

- Southbound left-turn from Beltline Boulevard onto the Backage Road:
  - The ¾ access is expected to operate acceptably in both the AM and PM peak hours. Additionally, this movement is not anticipated to have an adverse impact to the southbound through movements along Beltline Boulevard. The maximum queue is 145 feet with a proposed storage bay of 225 feet.

  - The movement is vital to the retail component of the site because of the visibility of the commercial uses on the corner of Beltline Boulevard & CSAH 25.
  - It allows for better access to the SWLRT park-and-ride which will be located adjacent to the proposed ¾ access.
- Westbound right-turn from the Backage Road onto Beltline Boulevard:
  - The access is expected to operate acceptably in the AM peak hour.
  - In the PM peak hour, it is anticipated that there will be around 70 seconds of delay as a result of northbound queues on Beltline Boulevard from the CSAH 25 & Beltline Boulevard intersection that extend beyond the access. However, this level of delay is not uncommon for side street approaches on roadways like Beltline Boulevard during the peak periods, and the 95th percentile queue length is 85 feet.
  - Delays and queues will occur for northbound traffic on Beltline Boulevard in both Scenario 1 & 2 during the PM peak hour with or without the right-turn from the Backage Road onto Beltline Boulevard.
  - Allowing the right-turn onto Beltline Boulevard from the Backage Road will decrease delay from 51 seconds to 39 seconds and queuing from 115 feet to 30 feet for the northbound left-turn at CSAH 25 & Lynn Avenue in the PM peak hour when comparing Scenarios 1 & 2. Additionally, the right-out is beneficial because vehicles destined to the west on CSAH 25 could use the right-out on Beltline Boulevard (1/8 mile) instead of having to circulate back to Lynn Avenue to make a left turn onto CSAH 25 (1/2 mile). During the PM peak hour, the estimated travel times would be similar for both routes due to the delay on Beltline Boulevard, but throughout the rest of the day, the right out on Beltline Boulevard would be faster.

CSAH 25/Monterey Avenue Right-in/Right-out: As previously mentioned, St. Louis Park and Hennepin County have collaborated to explore roadway layouts that would transform CSAH 25 into an “urban boulevard”. The corridor study reviewed potential options for repurposing the right-of-way to provide enhanced multimodal facilities, traffic calming, and landscaped boulevards. Providing right-in/right-out access at Monterey Avenue would align with the characteristics of a more urban streets. In addition, the proposed right-in-right-out access is 700 feet from the Beltline Boulevard intersection to the west and 500 feet from the Lynn Avenue intersection to the east. Per Hennepin County Access Spacing Guidelines, limited access can be provided at 1/16 mile (330 feet) in an urban setting.

The operational results and benefits of the additional northbound right-turn movement are described below.

- Northbound right-turn from Monterey Avenue onto CSAH 25:
  - The access is expected to operate acceptably in both the AM and PM peak hours of Scenario 2.
  - Allowing the northbound right-turn will disperse traffic on the proposed site to more access points, thus reducing delays at the ¾ access on Beltline Boulevard and the CSAH 25 & Lynn Avenue intersection. Which would allow more green time for CSAH 25 through movements at the Lynn Avenue signal.

- Allowing the right-turn onto CSAH 25 from Monterey Avenue will also decrease delay and queuing for the northbound right-turn at CSAH 25 & Lynn Avenue when comparing Scenarios 1 & 2.
- It is not anticipated that vehicles will utilize the right-out at Monterey Avenue to ultimately head west on CSAH 25. In conjunction with the ¾ access on Beltline Boulevard, taking a right out at the access and making an illegal U-turn at Lynn Avenue to head west will be less desirable then exiting onto Beltline Boulevard.
    - The travel time and distances for routes to exit the site were evaluated based on the roadway network, accesses, posted speed limits, and intersection delay. The typical travel time to head west on CSAH 25 from the right out onto Beltline Boulevard would be around 80 seconds. While the typical travel time to head west on CSAH 25 from the right out onto CSAH 25 and completing an illegal U-turn would be around 125 seconds.

Study Area Mitigations

Based on the results of the Opening Year (2024) No-Build and Build analyses, several improvements should be considered as traffic volumes increase within the study area.

As traffic volumes on Beltline Boulevard grow, it will become increasingly difficult for vehicles on Park Glen Road to turn onto Beltline Boulevard. A traffic signal may be required to provide gaps for vehicles on Park Glen Road. However, the analysis shows that the proposed Beltline Station Development will not trigger the need for the traffic signal. Based on conversations with the City of St. Louis Park, there are not currently plans to install a traffic signal at the intersection, but it is expected to be installed when the vacant parcel on the northeast side of the intersection is developed. The City is also exploring options to fund the signal prior to the redevelopment of the parcel.

With the anticipated northbound queues on Beltline Boulevard, there is the potential for northbound vehicles to block the southbound left turning traffic at the ¾ access. It is recommended to install additional signage for northbound Beltline Boulevard to not block the intersection. The queue cutter signal for the SWLRT should also help provide gaps in northbound traffic.

The CSAH 25/Monterey Avenue right-in/right-out is not anticipated to be a desirable movement for vehicles destined to the west on CSAH 25. However, signage should be provided on site to direct traffic to head west on CSAH 25 using either the right-out onto Beltline Boulevard or the signal at CSAH 25 & Lynn Avenue. There should also be prohibited U-turn signage on the eastbound approach of CSAH 25 at Lynn Avenue. The median at CSAH 25 & Lynn Avenue could also be redesigned with a minimal radius on the eastbound approach to discourage U-Turns. Any changes to the median will need to be verified so that they do not impact other turning movements.

Summary and Conclusion

A traffic analysis was completed for the area surrounding the proposed redevelopment site south of CSAH 25 and east of Beltline Boulevard in St. Louis Park, Minnesota. The AM and PM peak hours of traffic were analyzed under three scenarios: Opening Year (2024) No-Build Conditions, Opening Year (2024) Scenario 1 Build Conditions, and Opening Year (2024) Scenario 2 Build Conditions.

In the Opening Year (2024) No-Build Conditions, there are a significant amount of movements at CSAH 25 & Beltline Boulevard that have longer delays in both peak hours, this is most likely attributed to the longer cycle lengths in the peak hours. However, all intersections operate at LOS D or better except for Beltline Boulevard & Park Glen Road which is anticipated to have substantial delays for the side street movements in the PM peak hour. It should be noted that the capacity improvements completed as part of the SWLRT project maximize the realistic capacity of the study area. Any additional mitigation to increase capacity may not be feasible due to property impacts and improvement costs.

Overall, the Opening Year (2024) Scenario 1 Build Conditions analysis generally exhibits issues in the same locations as the Opening Year (2024) No-Build conditions analysis. However, with the addition of the site traffic, delays are expected to deteriorate slightly from the Opening Year (2024) No-Build Conditions. This results in some increased queues and delays along Beltline Boulevard.

In general, the same movements are anticipated to experience a decrease in LOS under Opening Year (2024) Scenario 2 Build Conditions as in Opening Year (2024) Scenario 1 Build Conditions. With the changes in geometry, Opening Year (2024) Scenario 2 Build Conditions is expected to have slightly more delay at CSAH 25 & Monterey Boulevard, less delay at the CSAH 25 & Lynn Avenue intersection, and acceptable operations at the ¾ access when compared to the Opening Year (2024) Scenario 1 Build Conditions.

Converting the access on Beltline Boulevard to a ¾ access and also adding right-out access from Monterey Avenue to eastbound CSAH 25, as proposed under Opening Year (2024) Scenario 2 Build Conditions, are not anticipated to have a significant impact on the operations along the two corridors. Both of these accesses are anticipated to operate acceptably in the AM peak hour and throughout the majority of the day. In the PM peak hour, there will be longer delays for the westbound right-turn onto Beltline Boulevard. However, delays of this level are not unexpected for side street movements on a corridor such as Beltline Boulevard, especially adjacent to a major traffic signal. This westbound right turn delay is the result of the northbound queues extending from the intersection of CSAH 25 & Beltline Boulevard.

Additionally, adequate access is paramount to be able to lease space, attract tenants and customers, and make this transit oriented development a success for the community and help achieve the City of St. Louis Park goals of serving people first, followed by bikes, transit, and then cars. While the analysis completed for this study shows less than desirable vehicular operations at several study intersections, the proposed site is in a prime location to encourage users to access the site via other modes of transportation.

Attachments

A. Site Plan
B. Exhibits
C. Queue Results

Kimley»Horn

Attachment A. Site Plan

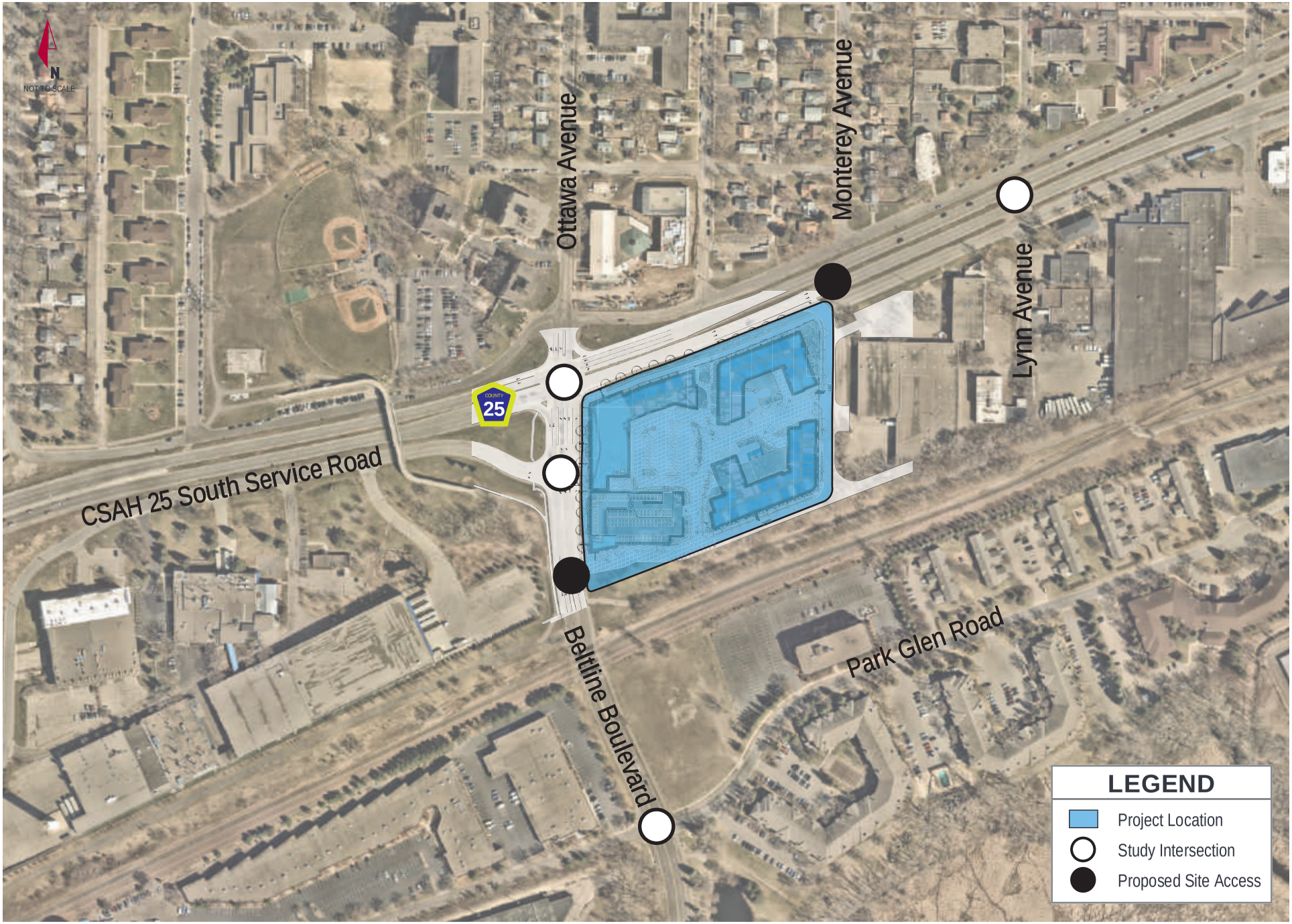
SITE PLAN

sherman ASSOCIATES

BKV GROUP

Kimley»Horn

Attachment B. Exhibits



Kimley»Horn

EXHIBIT 1

PROJECT LOCATION

BELTLINE STATION DEVELOPMENT

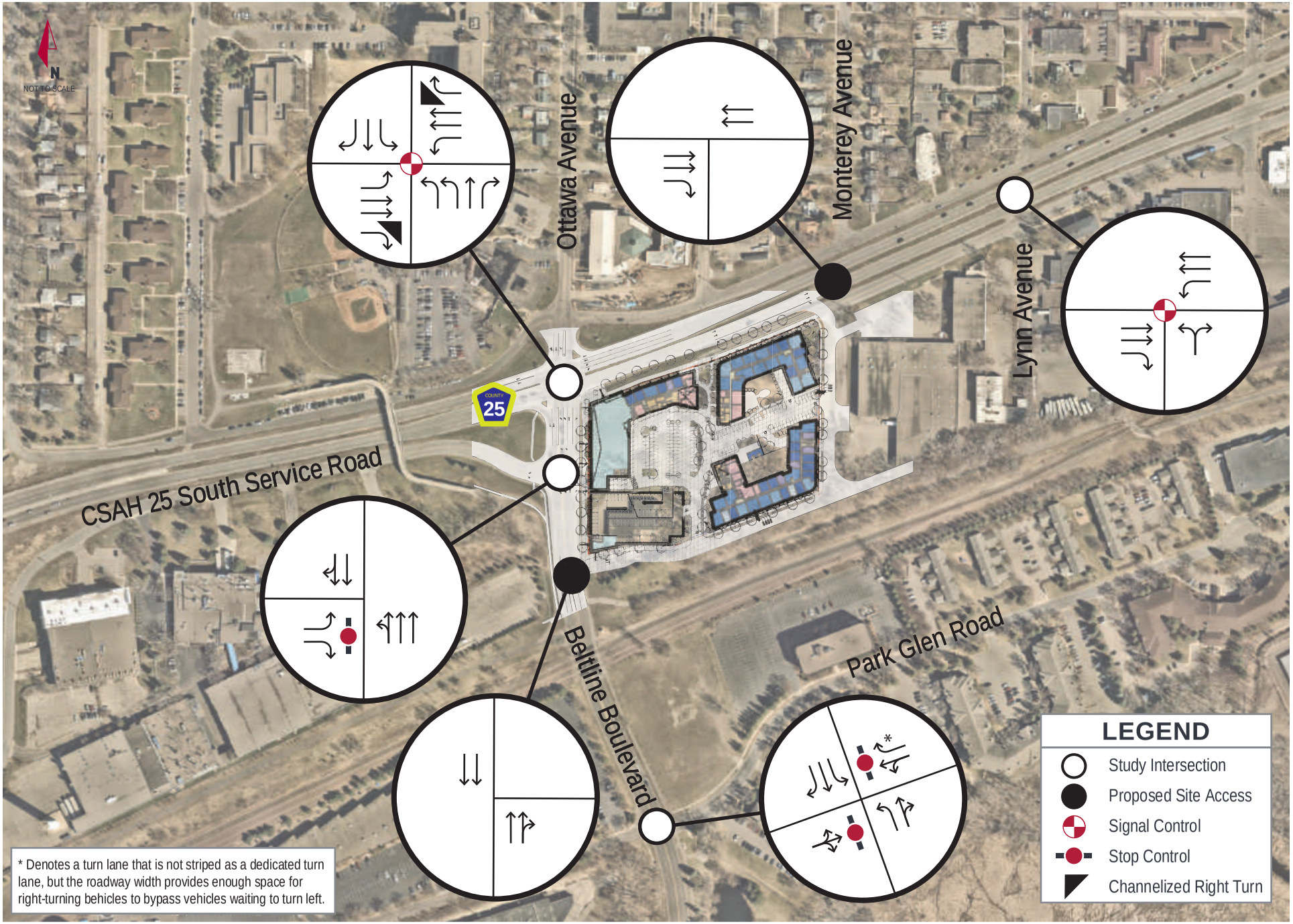


EXHIBIT 2

Kimley»Horn

OPENING YEAR (2024) NO-BUILD & SCENARIO 1 BUILD CONDITIONS GEOMETRY AND INTERSECTION CONTROL

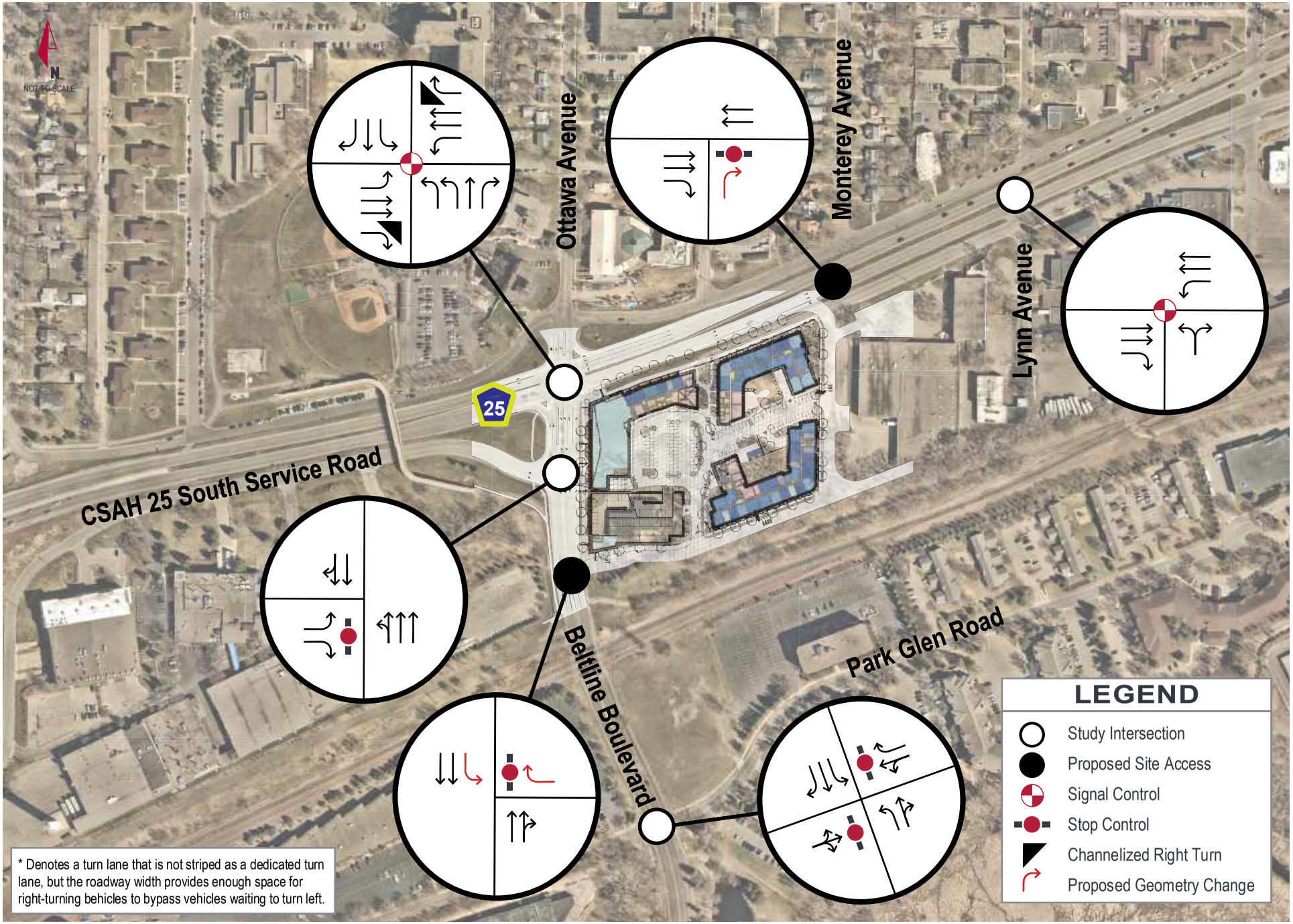
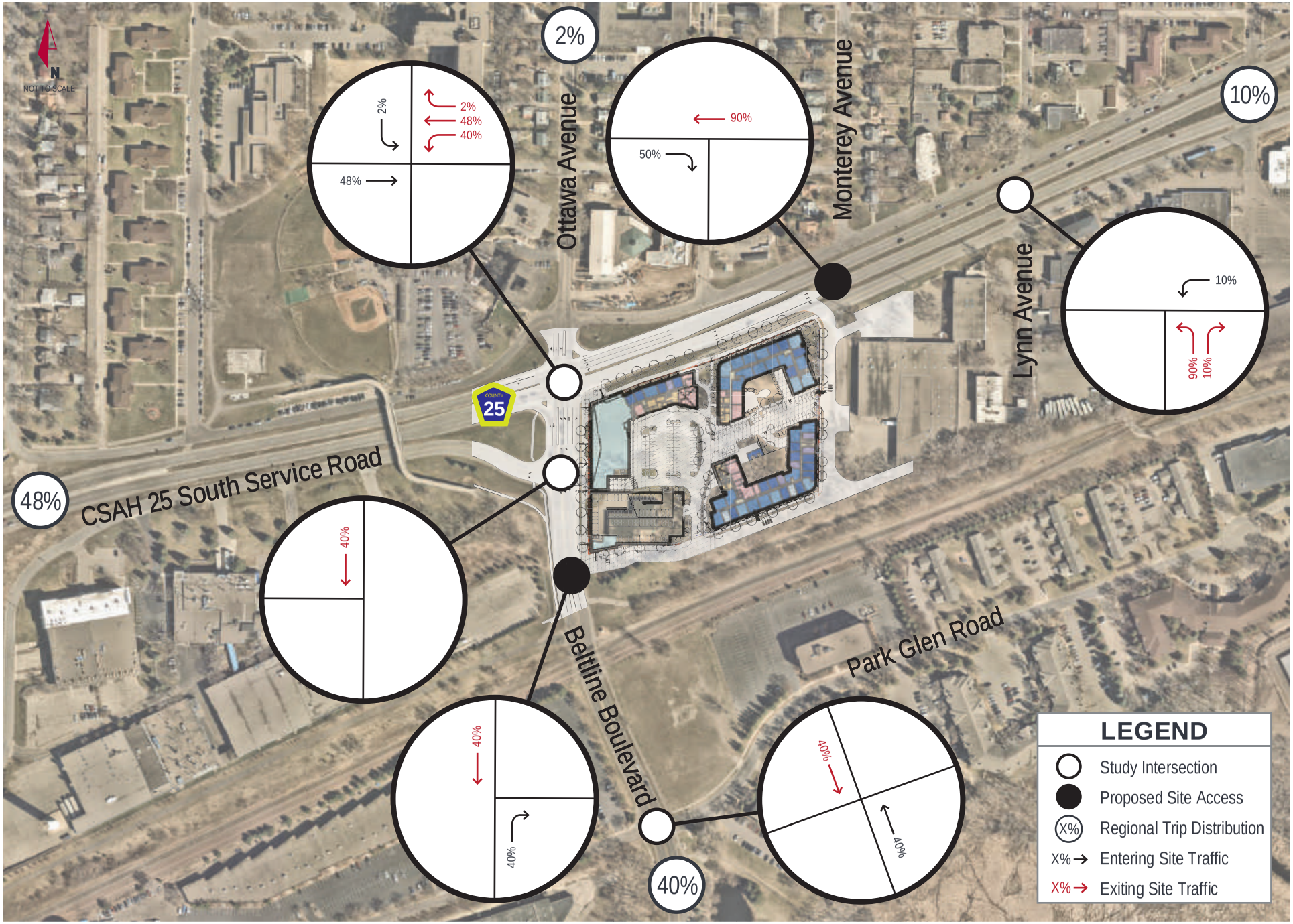


EXHIBIT 3

Kimley»Horn

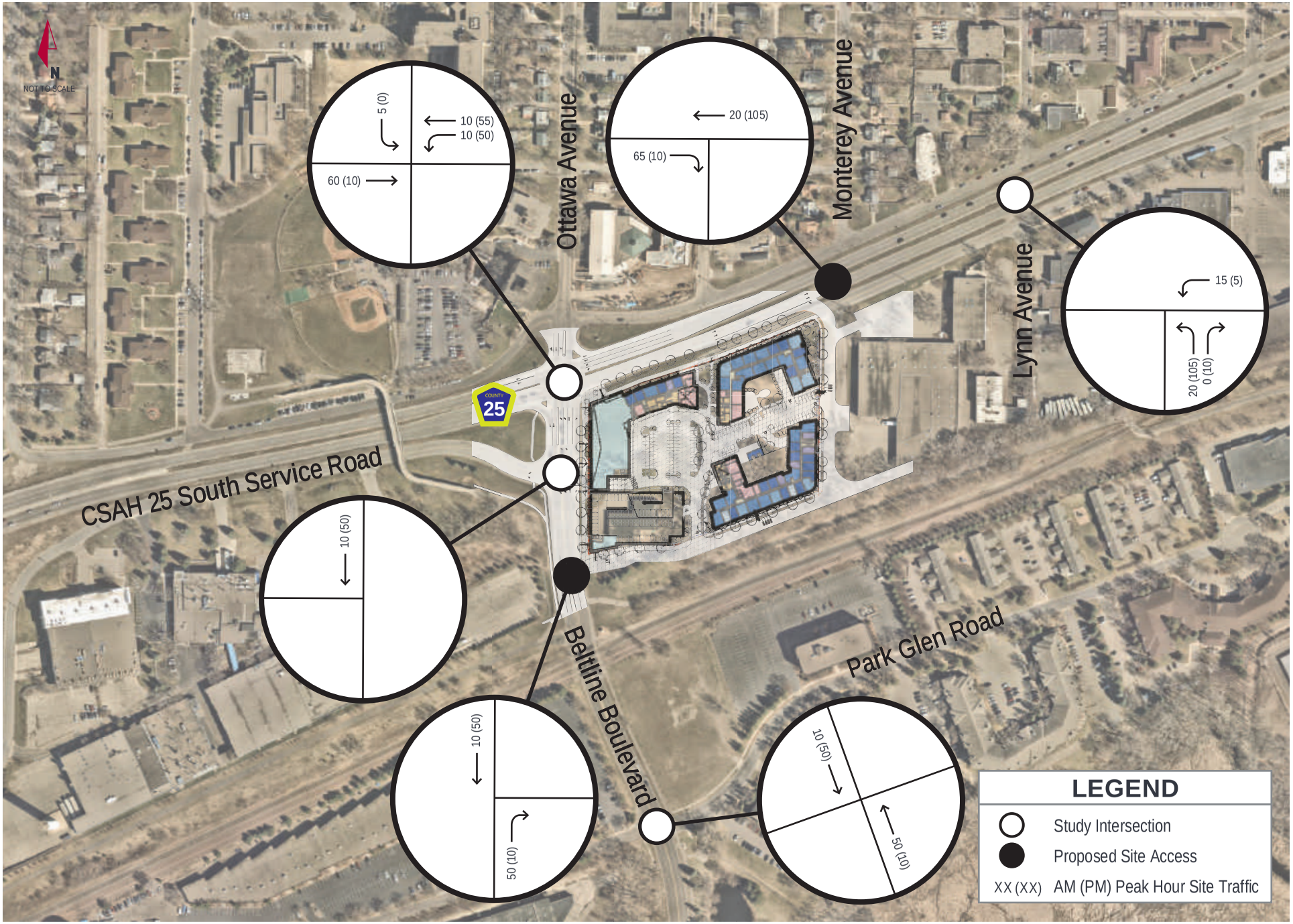
OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS GEOMETRY AND INTERSECTION CONTROL



Kimley»Horn

EXHIBIT 4

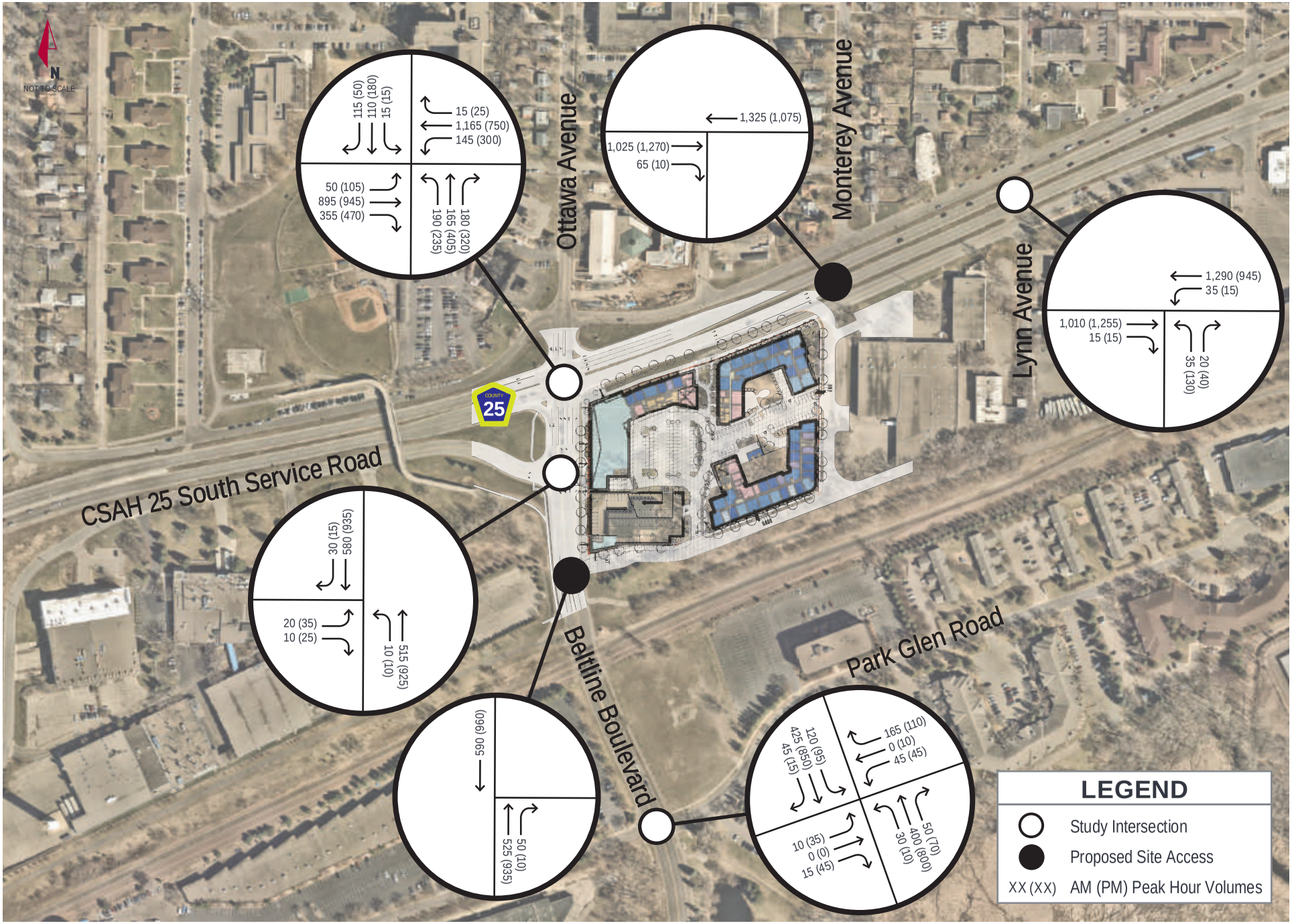
OPENING YEAR (2024) NO-BUILD CONDITIONS
PARK & RIDE TRIP DISTRIBUTION



Kimley»Horn

EXHIBIT 5

OPENING YEAR (2024) NO-BUILD CONDITIONS
PARK & RIDE TRIP ASSIGNMENT



Kimley»Horn

EXHIBIT 6

OPENING YEAR (2024) NO-BUILD CONDITIONS TOTAL TRAFFIC VOLUMES

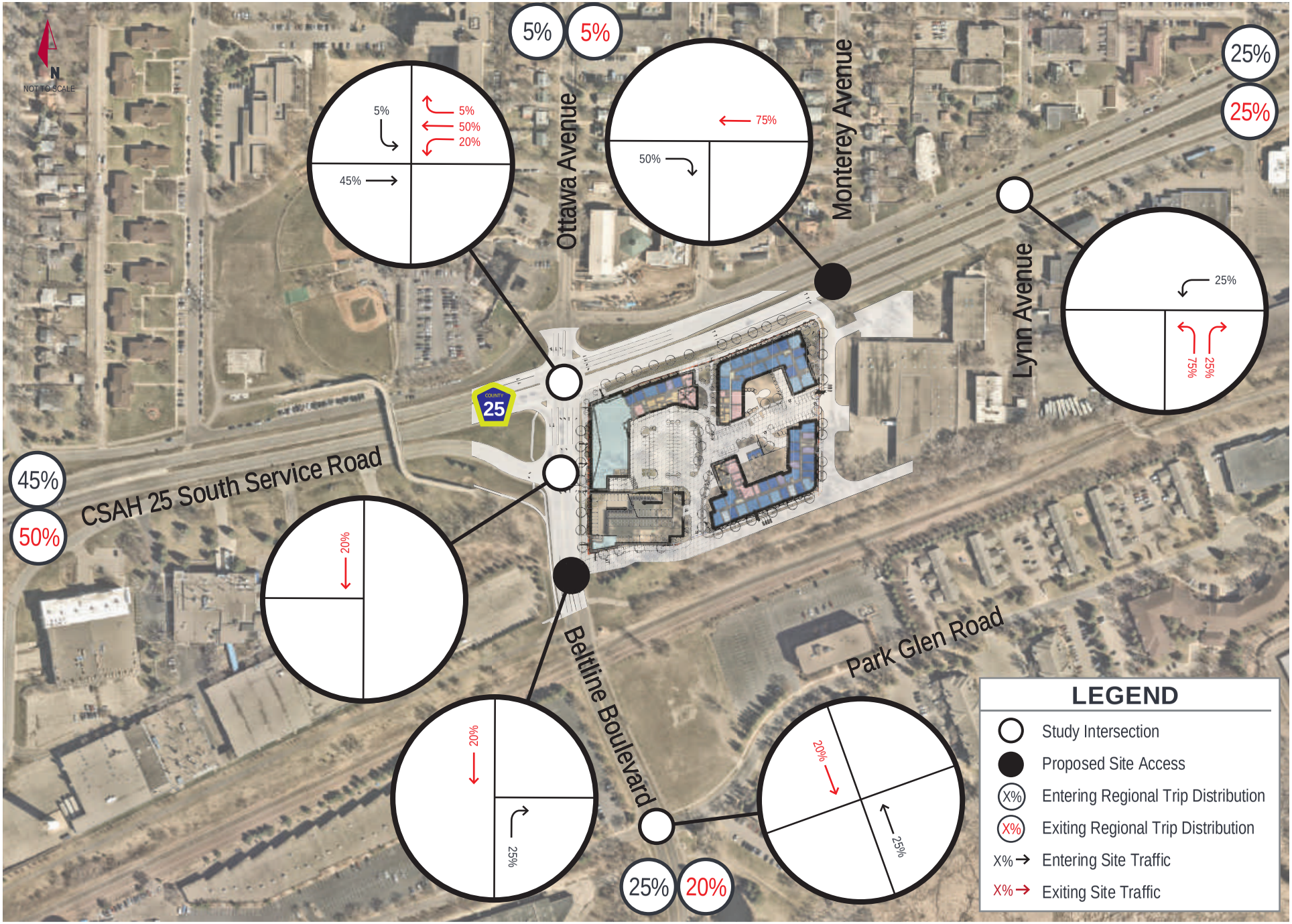


EXHIBIT 7

Kimley»Horn

OPENING YEAR (2024) SCENARIO 1 BUILD CONDITIONS
DEVELOPMENT TRIP DISTRIBUTION - RESIDENTIAL TRIPS

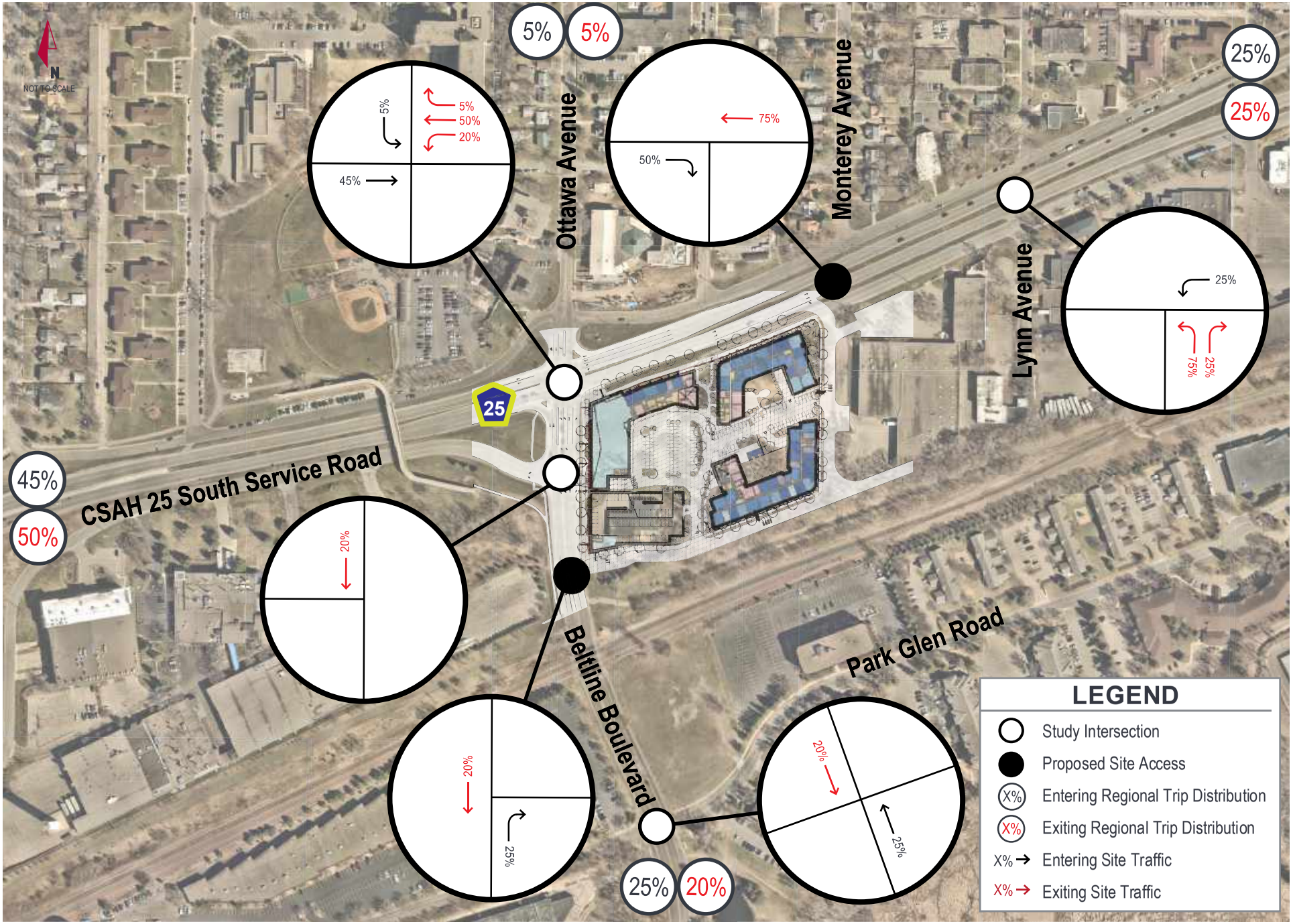


EXHIBIT 8

Kimley»Horn

OPENING YEAR (2024) SCENARIO 1 BUILD CONDITIONS
DEVELOPMENT TRIP DISTRIBUTION - COMMERCIAL TRIPS

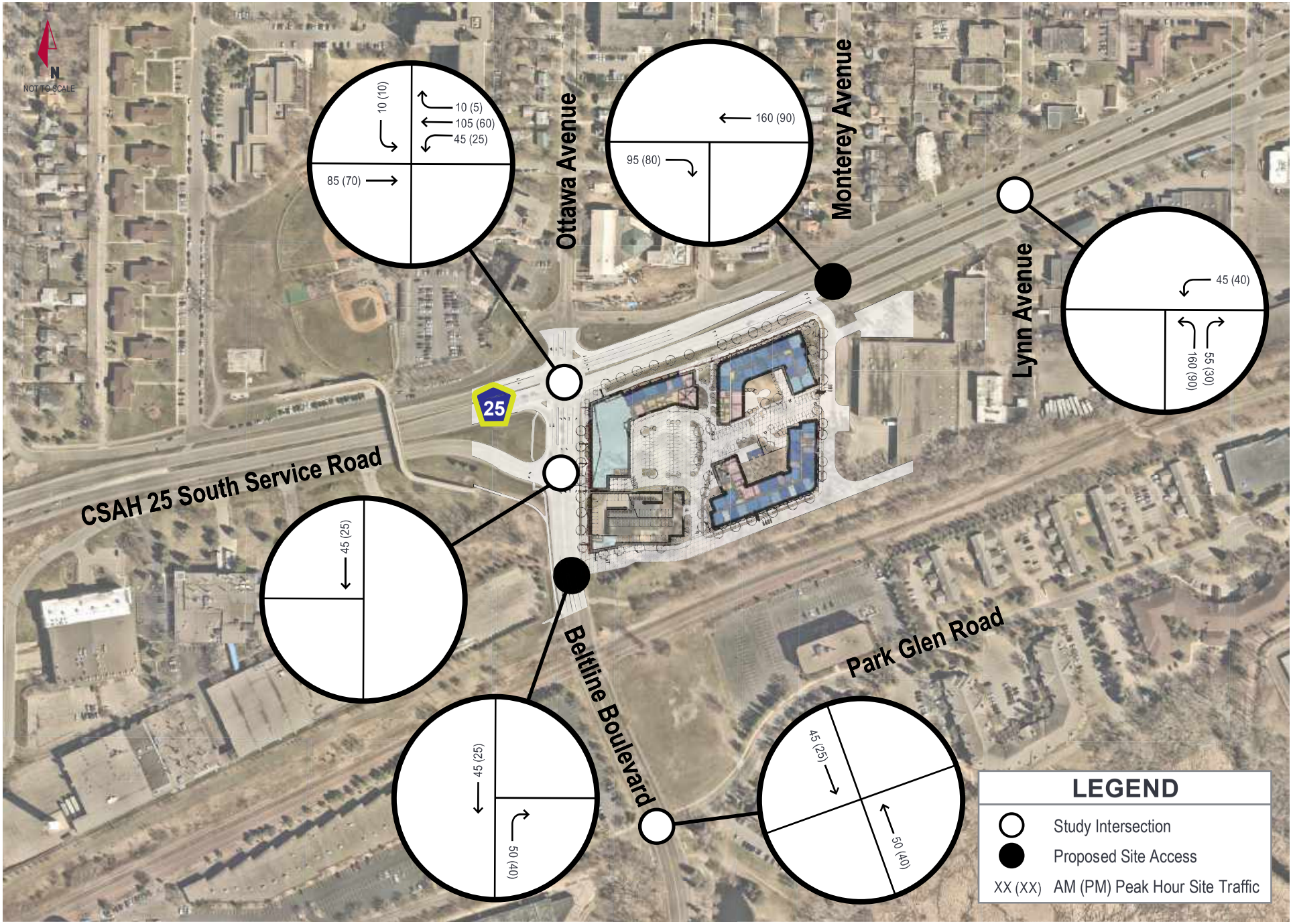


EXHIBIT 9

Kimley»Horn

OPENING YEAR (2024) SCENARIO 1 BUILD CONDITIONS
DEVELOPMENT TRIP ASSIGNMENT - NEW EXTERNAL TRIPS

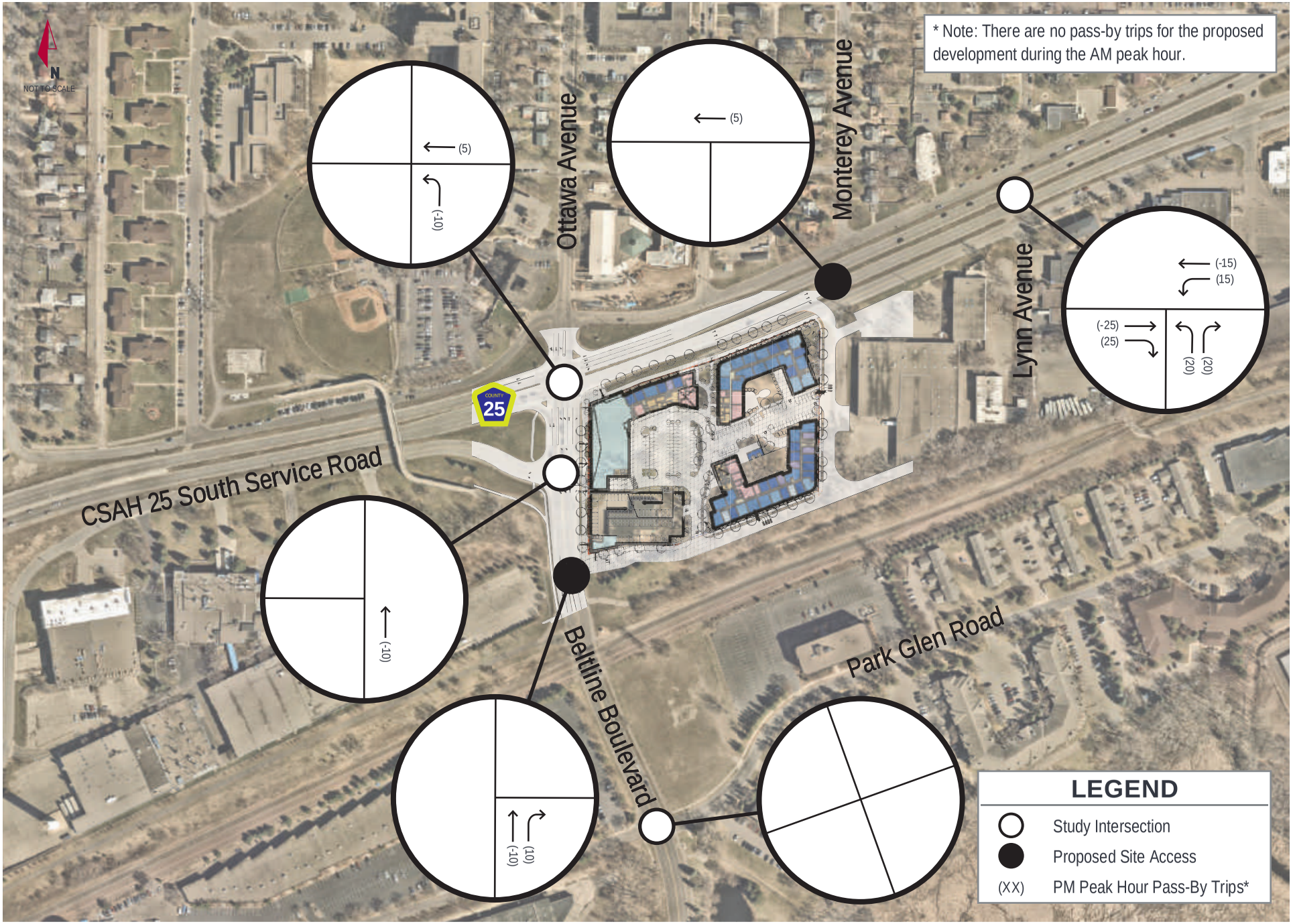
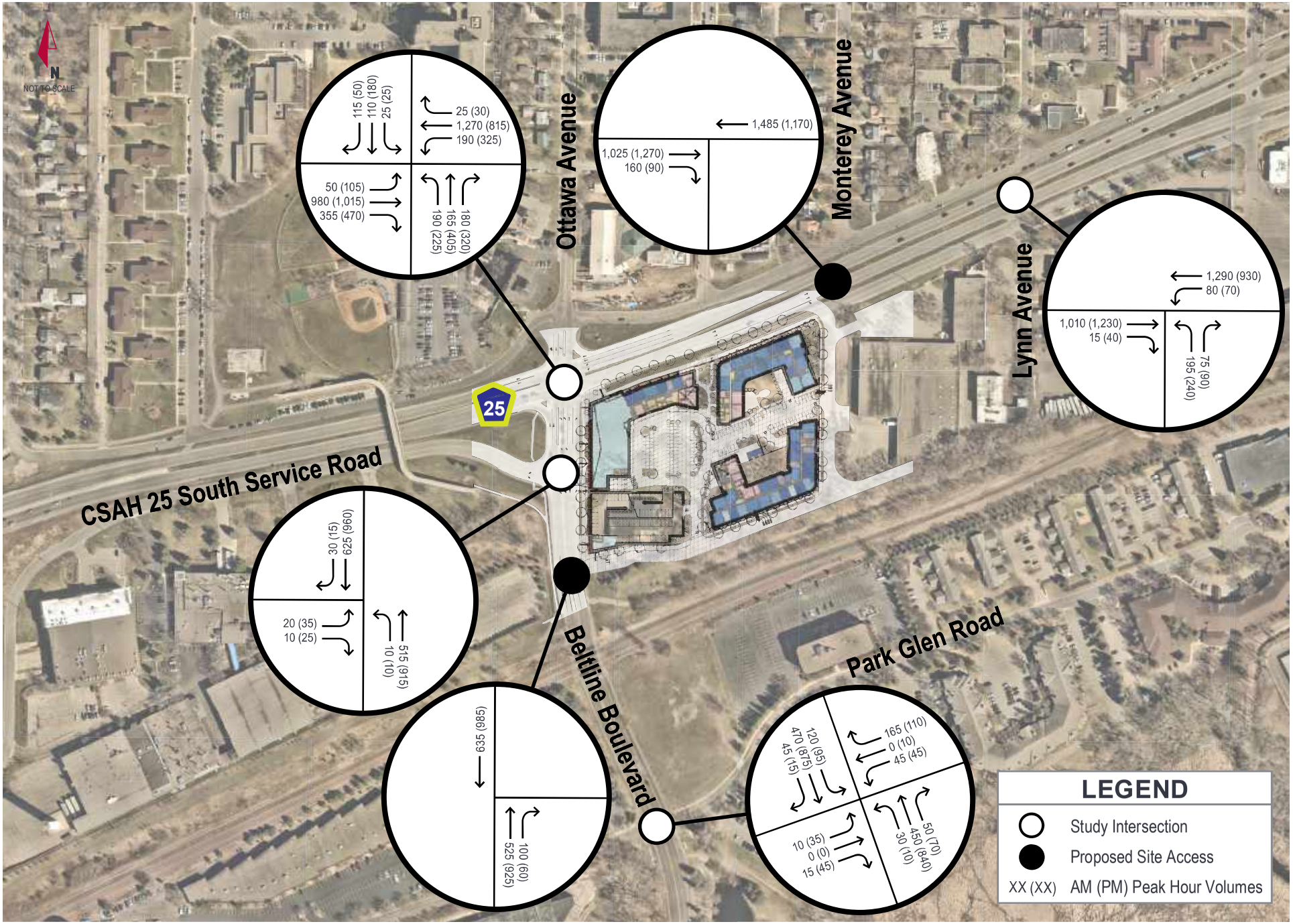


EXHIBIT 10

Kimley»Horn

OPENING YEAR (2024) SCENARIO 1 BUILD CONDITIONS DEVELOPMENT TRIP ASSIGNMENT - PASS-BY TRIPS



Kimley»Horn

EXHIBIT 11

OPENING YEAR (2024) SCENARIO 1 BUILD CONDITIONS
TOTAL TRAFFIC VOLUMES

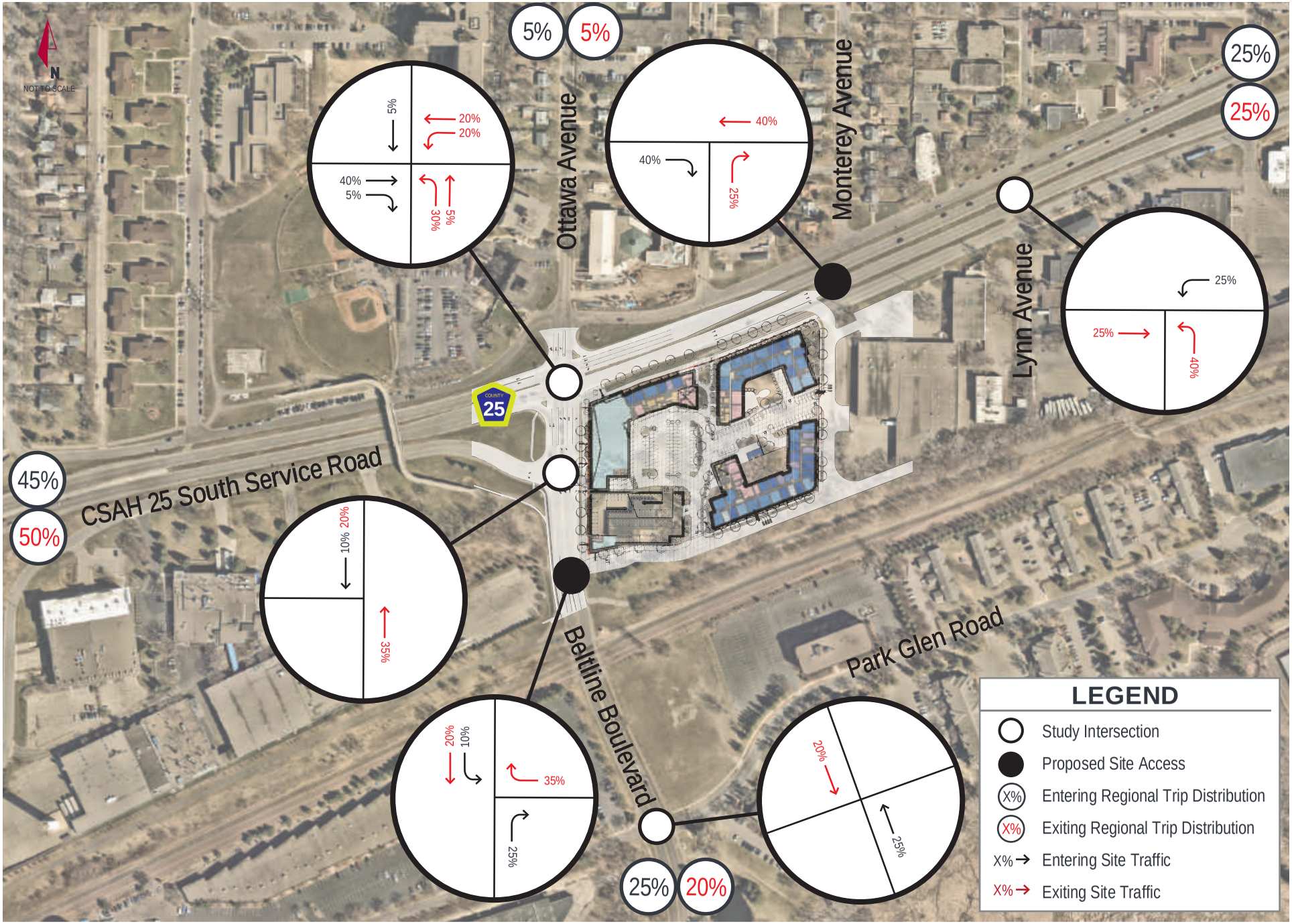


EXHIBIT 12

Kimley»Horn

OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS
DEVELOPMENT TRIP DISTRIBUTION - RESIDENTIAL TRIPS

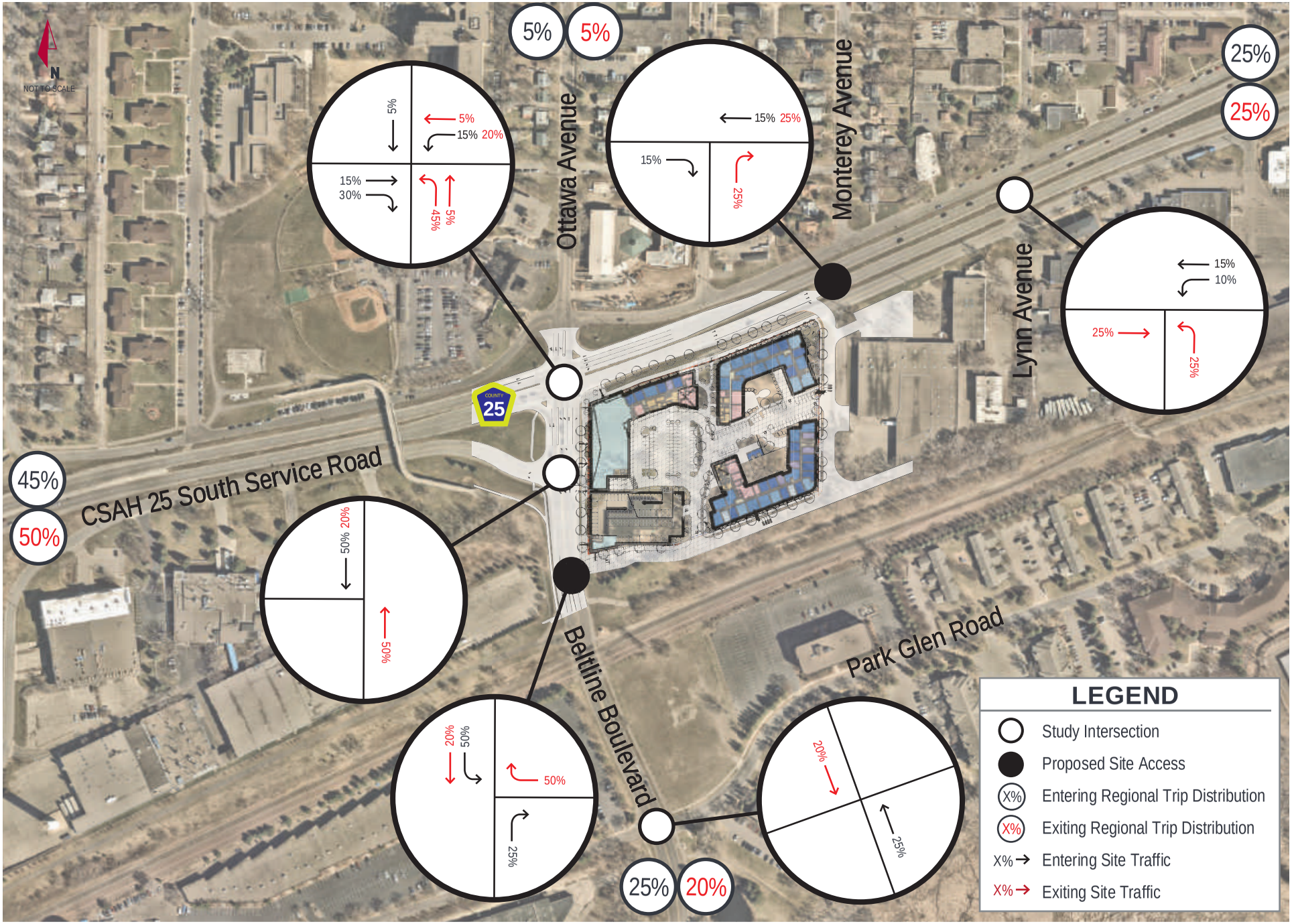


EXHIBIT 13

Kimley»Horn

OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS
DEVELOPMENT TRIP DISTRIBUTION - COMMERCIAL TRIPS

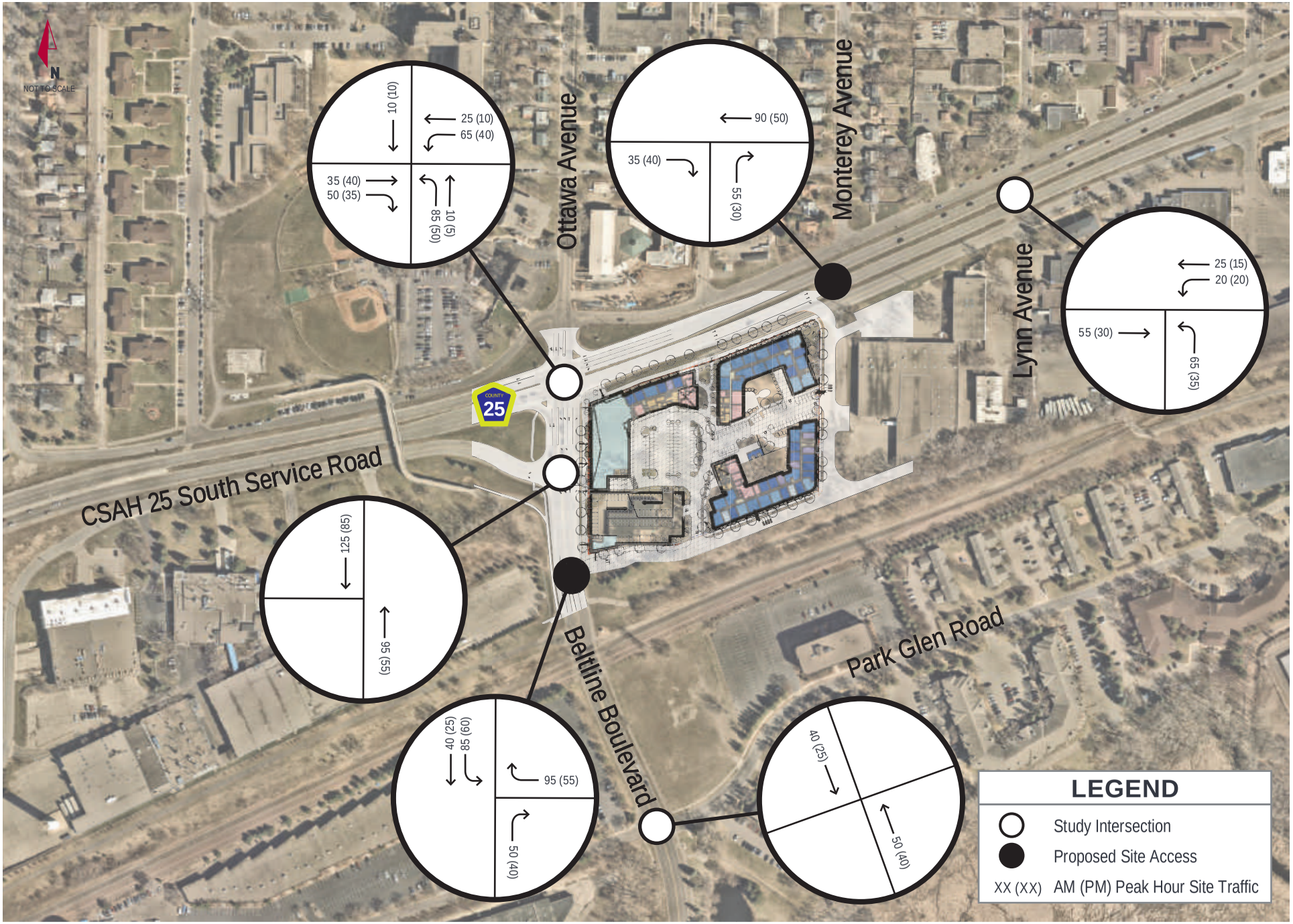


EXHIBIT 14

Kimley»Horn

OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS DEVELOPMENT TRIP ASSIGNMENT - NEW EXTERNAL TRIPS

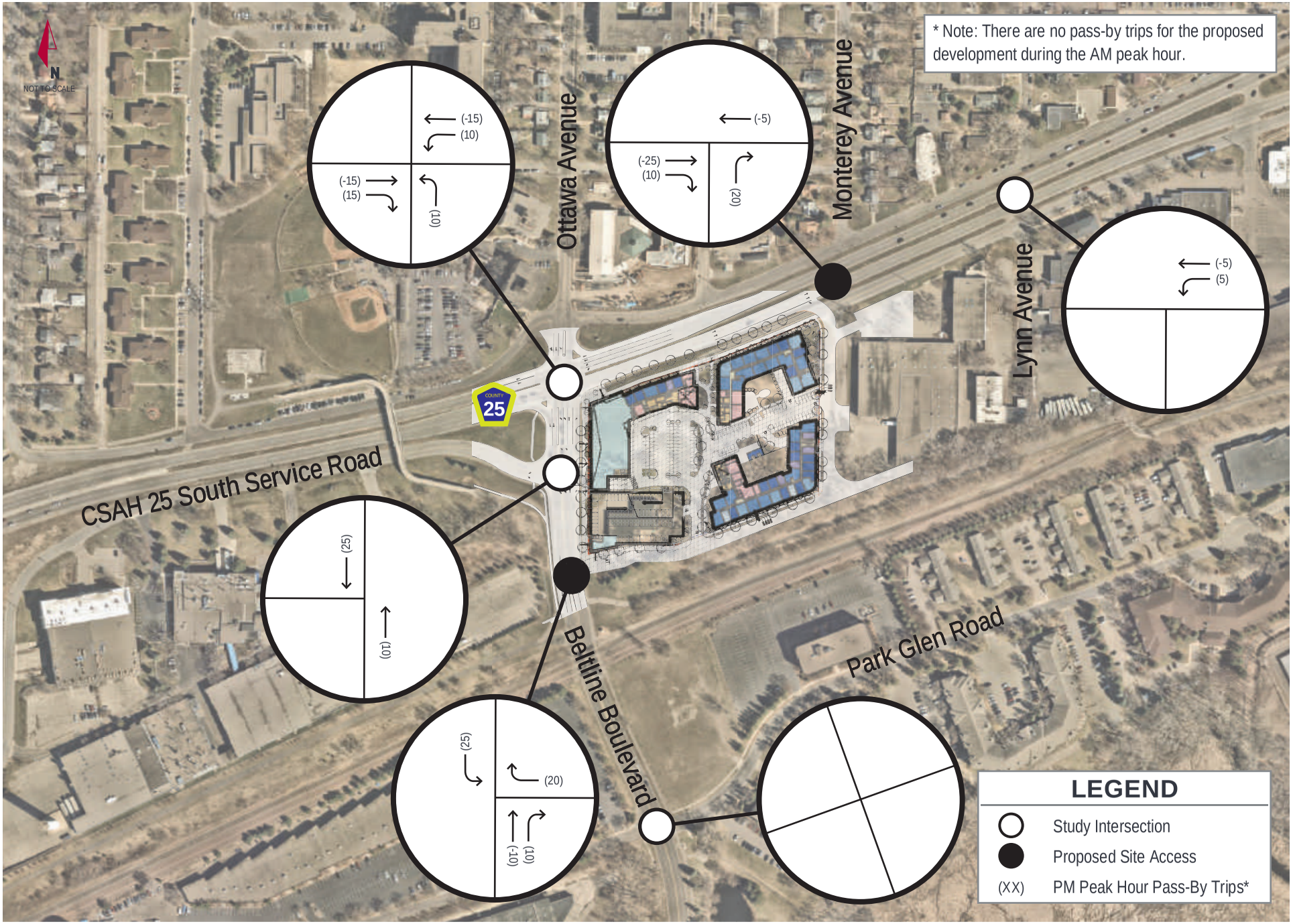


EXHIBIT 15

Kimley»Horn

OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS DEVELOPMENT TRIP ASSIGNMENT - PASS-BY TRIPS

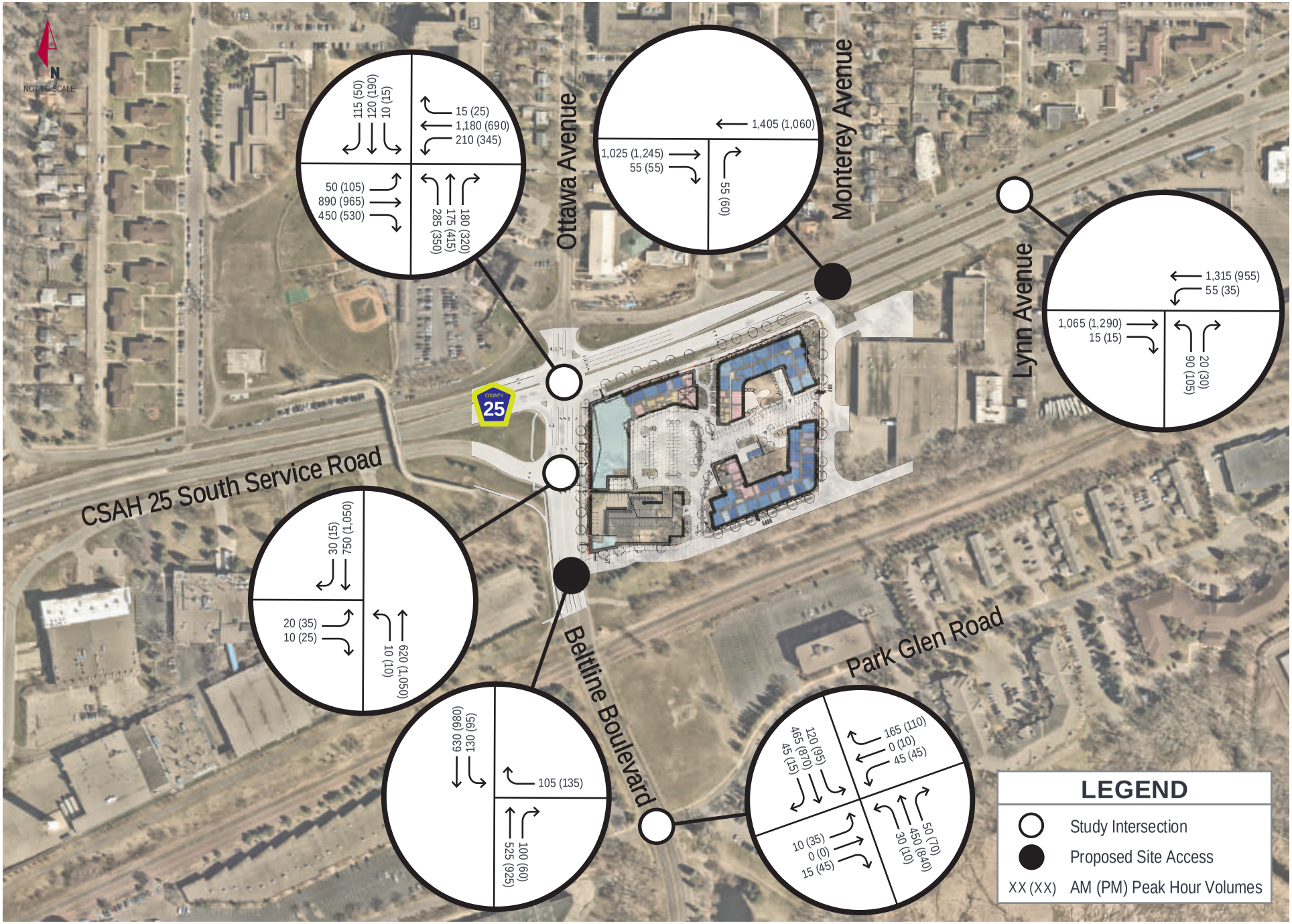


EXHIBIT 16

Kimley»Horn

OPENING YEAR (2024) SCENARIO 2 BUILD CONDITIONS
TOTAL TRAFFIC VOLUMES

Kimley»Horn

Attachment C. Opening Year Queueing Results

Opening Year (2024) No-Build Conditions Queuing Results

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Beltline Boulevard/ Ottawa Ave S	Signal	EB	Left	300	20	50
			Through	1,550	60	250
			Right	350	0	0
		WB	Left	500	95	220
			Through	1,125	175	120
			Right	350	0	0
		NB	Left	150	75	110
			Through	150	75	180
			Right	150	90	205
		SB	Left	75	10	20
			Through	75	80	120
			Right	75	10	0
Beltline Blvd & CSAH 25 Service Rd	Side Street Stop	EB	Left	625	5	60
			Right	250	5	55
		NB	Left	275	10	145
			Through	275	0	90
		SB	Through	150	0	5
			Right	150	0	10
Beltline Boulevard & Park Glen Rd	Side Street Stop	EB	Left	1,150	5	190
			Through	1,150	5	190
			Right	1,150	5	190
		WB	Left	1,550	5	330
			Through	1,550	5	330
			Right	1,550	15	255
		NB	Left	175	0	0
			Through	800	0	210
			Right	800	0	175
		SB	Left	175	5	35
			Through	850	0	0
			Right	150	0	0

Opening Year (2024) No-Build Conditions Queuing Results (cont.)

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Lynn Ave	Signal	EB	Through	1,125	15	35
			Right	200	0	0
		WB	Left	300	10	5
			Through	550	5	10
		NB	Left	500	10	40
			Right	500	10	45

Opening Year (2024) Build Scenario 1 Conditions Queuing Results

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Beltline Boulevard/ Ottawa Ave S	Signal	EB	Left	300	25	55
			Through	1,550	75	560
			Right	350	0	100
		WB	Left	500	130	325
			Through	1,125	185	140
			Right	350	0	0
		NB	Left	150	70	105
			Through	150	85	185
			Right	150	100	210
		SB	Left	75	20	30
			Through	75	75	150
			Right	75	15	0
Beltline Blvd & CSAH 25 Service Rd	Side Street Stop	EB	Left	625	5	65
			Right	250	0	65
		NB	Left	275	15	165
			Through	275	5	105
		SB	Through	150	0	15
			Right	150	0	30
Beltline Boulevard & Park Glen Rd	Side Street Stop	EB	Left	1,150	5	250
			Through	1,150	5	250
			Right	1,150	5	250
		WB	Left	1,550	5	655
			Through	1,550	5	655
			Right	1,550	15	480
		NB	Left	175	0	0
			Through	800	0	440
			Right	800	0	395
		SB	Left	175	5	100
			Through	850	0	5
			Right	150	0	0

Opening Year (2024) Build Scenario 1 Conditions Queuing Results (cont.)

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Lynn Ave	Signal	EB	Through	1,125	45	80
			Right	200	0	0
		WB	Left	300	25	25
			Through	550	20	20
		NB	Left	500	70	115
			Right	500	75	120

Opening Year (2024) Build Scenario 2 Conditions Queuing Results

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Beltline Blvd/ Ottawa Ave S	Signal	EB	Left	300	20	70
			Through	1,550	115	530
			Right	350	0	5
		WB	Left	500	145	265
			Through	1,125	210	105
			Right	350	0	0
		NB	Left	150	115	155
			Through	150	95	190
			Right	150	120	215
		SB	Left	75	10	15
			Through	75	70	175
			Right	75	10	5
Beltline Blvd & CSAH 25 Service Rd	Side Street Stop	EB	Left	625	10	145
			Right	250	5	140
		NB	Left	225	35	125
			Through	225	20	70
		SB	Through	150	0	10
			Right	150	0	15
Beltline Blvd & Park Glen Rd	Side Street Stop	EB	Left	1,150	-	300
			Through	1,150	5	300
			Right	1,150	5	300
		WB	Left	1,550	5	595
			Through	1,550	10	595
			Right	1,550	10	600
		NB	Left	175	20	0
			Through	800	0	425
			Right	800	0	375
		SB	Left	175	0	30
			Through	850	5	0
			Right	150	0	0

Opening Year (2024) Build Scenario 2 Conditions Queuing Results (cont.)

Intersection	Control Type	Approach	Movement	Storage Length (feet)	95th Percentile Queue (feet)	
					AM PEAK HOUR	PM PEAK HOUR
CSAH 25 & Lynn Ave	Signal	EB	Through	425	30	40
			Right	225	0	0
		WB	Left	300	20	10
			Through	550	10	10
		NB	Left	500	25	30
			Right	500	25	35
CSAH 25 & Monterey Ave/ Site Driveway	Side Street Stop	EB	Through	625	0	0
			Right	325	0	0
		WB	Through	425	5	0
		NB	Right	450	5	5
Beltline Blvd & Site Driveway	Side Street Stop	WB	Right	650	5	85
		NB	Through	575	0	70
			Right	575	10	95
		SB	Left	225	5	15
			Through	250	5	40