

# Blake Road Station Development

**Environmental Assessment Worksheet**

August 2020

Prepared for:

**T R I L O G Y**

REAL ESTATE GROUP

Prepared by:

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# Environmental Assessment Worksheet

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's (EQB's) website at: <http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

**Cumulative potential effects** can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 19.

**Note to reviewers:** Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation, and the need for an EIS.

## 1. Project Title

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Blake Road Station Development

## 2. Proposer

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**Proposer:** Trilogy Real Estate Group  
**Contact Person:** Bryan Farquhar  
**Title:** Chief Development Officer  
**Address:** 520 West Erie Street, Suite 100  
**City, State, ZIP:** Chicago, IL 60654  
**Phone:** 312-750-0900  
**Fax:** 312-750-0909  
**Email:** [bfarquhar@trilogyreg.com](mailto:bfarquhar@trilogyreg.com)

## 3. RGU

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**RGU:** City of Hopkins  
**Contact Person:** Kersten Elverum  
**Title:** Director of Economic Development & Planning  
**Address:** 1010 1<sup>st</sup> Street South  
**City, State, ZIP:** Hopkins, MN 55343  
**Phone:** 952-548-6340  
**Fax:** 952-935-1834  
**Email:** [kerverum@hopkinsmn.com](mailto:kerverum@hopkinsmn.com)

#### 4. Reason for EAW Preparation

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**Check one:**

Required:

EIS Scoping

Mandatory EAW

Discretionary:

Citizen petition

RGU discretion

Proposer initiated

**If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s):**

Minnesota Rules, part 4410.4300, subpart 32 (Mixed residential and industrial-commercial projects)

#### 5. Project Location

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**County:** Hennepin

**City/Township:** Hopkins

**PLS Location (1/4, 1/4, Section, Township, Range):** NW 1/4 of the SE 1/4 of Section 19, Township 117N, Range 21W

**Watershed (81 major watershed scale):** Mississippi River – Twin Cities

**GPS Coordinates:** 44.926292636870954 decimal degrees (latitude), -93.38706593699751 decimal degrees (longitude)

**Tax Parcel Number:** 27053-1911721420044, 27053-1911721420045, and 27053-1911721420046

**At a minimum, attach each of the following to the EAW:**

- **County map showing the general location of the project** (see Figure 1)
- **US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries** (see Figure 2)
- **Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.** (see Figure 3 and Appendix A)

#### 6. Project Description

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- a. **Provide the brief project summary to be published in the *EQB Monitor* (approximately 50 words).**

The Blake Road Station Development project is the redevelopment of 6.4 acres of existing commercial uses at the intersection of Excelsior Boulevard and Blake Road South in Hopkins, located adjacent to the future METRO Green Line Blake Road Station. The proposed project is a multi-modal transit-oriented development that will be constructed in three phases.

- b. **Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion, include a description of the existing facility. Emphasize 1) construction and operation methods and features that will cause physical manipulation of the environment or will produce wastes; 2) modifications to existing equipment or industrial processes; 3) significant demolition, removal, or remodeling of existing structures; and 4) timing and duration of construction activities.**

The Blake Road Station Development project is the redevelopment of 6.4 acres of existing commercial uses at the intersection of Excelsior Boulevard and Blake Road South in Hopkins

(see Figure 3). The project site is south of an existing railroad corridor where the METRO Green Line Extension will operate and adjacent to the future Blake Road Station (service on this extension of the METRO Green Line will begin in 2023). The Cedar Lake Regional Trail runs parallel to the existing railroad tracks.

The proposed project is a multi-modal, transit-oriented, mixed-use development that will be constructed in three phases (see Table 1 and Appendix A). After the three phases are complete, the development will have up to 770 multi-family dwelling units, up to 19,000 square feet of retail, and up to 950 parking stalls.

The existing site area has five access points off Blake Road and Excelsior Boulevard, four of which feed directly to the site. The site accesses will remain the same as existing, except the Hill Street right-in/right-out on Blake Road, closest to the intersection, will be closed. The existing right-in/right-out on Excelsior Boulevard will be improved with a north-south private drive that divides the site in two blocks, provides necessary phasing access to existing businesses, and connects directly to the METRO Green Line station in order to provide access through the site and to the future retail space along Excelsior Boulevard. The developer is currently working with Hennepin County on site access off Excelsior Boulevard, and site access will be finalized through the permitting and approvals process.

The existing site is nearly all impervious with little landscaping and no stormwater treatment or attenuation. In the proposed condition, there will be more green space with trees and shrubs, and stormwater treatment will be added to environmentally improve the site.

A linear park will be located adjacent to the new north-south drive on Site B, and sidewalk connections will be constructed throughout the site to increase the walkability of the site with redevelopment. Along Excelsior Boulevard and Blake Road boulevard sidewalks with landscape protection and pedestrian zones will include public street furniture such as benches, planters, and bike racks.

*Table 1: Proposed Development*

<b>Phase</b>	<b>Location</b>	<b>Dwelling Units (multi-family)</b>	<b>Retail (square feet)</b>	<b>Parking Stalls</b>	<b>Construction Start Date</b>
1	Site A	215	Up to 2,000	270	Spring 2021
2	Site B	250	Up to 13,000	330	Spring 2021-2026 (pending existing lease agreements)
3	Site C	305	Up to 4,000	350	Spring 2026-2031 (pending existing lease agreements)

The existing buildings and parking lots will be demolished at the beginning of each phase of construction. Construction of the first phase is anticipated to start in spring 2021 and be complete in summer 2022. Construction of the second and third phases will depend on the existing lease agreements with the current tenants on Sites B and C.

**c. Project magnitude**

Table 2: Project Magnitude

Measure	Magnitude
Total Project Acreage	6.4 acres
Linear Project Length	Not applicable
Number and Type of Residential Units	770 multi-family dwelling units
Commercial Building Area (square feet)	Up to 19,000 square feet
Industrial Building Area (square feet)	Not applicable
Institutional Building Area (square feet)	Not applicable
Other Uses – specify (square feet)	Not applicable
Structure Height(s)	7 stories

**d. Explain the project purpose. If the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.**

The purpose of the project is to redevelop an existing commercial development into a multi-modal transit-oriented development.

**e. Are future stages of this development, including development on any other property, planned or likely to happen?  Yes  No**

**If yes, briefly describe future stages, relationship to present project, timeline, and plans for environmental review.**

All three phases of the proposed development are included in this EAW.

**f. Is this project a subsequent stage of an earlier project?  Yes  No**

**If yes, briefly describe the past development, timeline, and past environmental review.**

Not applicable.

**7. Cover Types**

**Estimate the acreage of the site with each of the following cover types before and after development.**

Table 3: Cover Types

Cover Type	Before (Acres)	After (Acres)
Wetlands	0.0	0.0
Deep Water/Streams	0.0	0.0
Wooded/Forest	0.0	0.0
Brush/Grassland	0.0	0.0
Cropland	0.0	0.0
Lawn/Landscaping	0.4	0.8
Impervious Surface	6.0	5.5
Stormwater Pond	0.0	0.1
Other (describe)	0.0	0.0
<b>Total</b>	<b>6.4</b>	<b>6.4</b>

## 8. Permits and Approvals Required

List all known local, state, and federal permits, approvals, certifications, and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing, and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules Chapter 4410.3100.*

Table 4: Permits and Approvals Required

Unit of Government	Type of Application	Status
Minnesota Department of Health	Watermain permit	To be applied for
Minnesota Department of Labor and Industry	Plumbing permit	To be applied for
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System (NPDES) permit	To be applied for
Minnehaha Creek Watershed District	Stormwater permit	To be applied for
Hennepin County	Right-of-way permit	To be applied for
	Driveway permits	To be applied for
City of Hopkins	Planned unit development (PUD) and site plan approval	To be applied for
	Rezoning	
	Building permits	To be applied for
	Demolition permit	To be applied for
	Erosion control, grading, and stormwater permit	To be applied for
	Right-of-way permit	To be applied for
	EIS need decision	In process
	Traffic Impact Analysis	In process; to be updated as needed through permitting and PUD process
	Preliminary and final plat	To be obtained, if needed

## 9. Land Use

### a. Describe:

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

The project site is an existing commercial development. Adjacent existing land uses include commercial development to the west and north, multi-family residential east of Blake Road, and The Blake School south of Excelsior Boulevard. Railroad tracks and

the Cedar Lake Regional Trail are located to the north of the project site. There are no parks or prime or unique farmlands within or adjacent to the project site.

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

*Cultivate Hopkins*, the city's draft 2040 comprehensive plan, identifies the project site as a potential redevelopment area. The future land use plan shows the project site as an activity center with a minimum density of 75-150 dwelling units per acre because it is within ¼ mile of a light rail station.<sup>1</sup>

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

The project site is within two zoning districts. Sites A and B are zoned B-4 Neighborhood Business, and Site C is zoned I-1 Industrial.<sup>2</sup> The project site is not within any overlay districts. The proposed development will require site rezoning from Neighborhood Business and Industrial to a Mixed-Use District.

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

The project is compatible with the planned land use and zoning as outlined in the 2040 Comprehensive Plan for the project site and adjacent areas. The project will require a planned unit development (PUD) to ensure compliance with the setback standards, height standards, and floor area ratio (FAR) requirements for the Blake Road Station Area.

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

As discussed above, a PUD will be required for the proposed development due to deviations to standards for the Blake Road Station Area, such as increased landscaping and site amenities and a reduction in setbacks and parking counts from current city code requirements.

## 10. Geology, Soils, and Topography/Land Forms

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

According to the Geologic Atlas of Hennepin County (2018),<sup>3</sup> bedrock geology of the project site consists of Platteville and Glenwood Formations, fine-grained limestone containing thin

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<sup>1</sup> Built Environment. *Cultivate Hopkins*. Available at <https://www.hopkinsmn.com/726/Cultivate-Hopkins>.

<sup>2</sup> City of Hopkins Zoning Map. Available at <https://www.hopkinsmn.com/DocumentCenter/View/213/Zoning-Map---11-by-17-Inches-PDF>.

<sup>3</sup> Available at <https://conservancy.umn.edu/handle/11299/200919>

shale partings near the top and base, underlain by green, sandy shale. The estimated depth to bedrock is approximately 26-50 feet. The surficial geology consists of fine-grained sand to sandy gravel deposits.

No sinkholes, unconfined/shallow aquifers, or karst conditions were identified in the project area.

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

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, there are two soil types within the site. Urban land-Udorthents (cut and fill land) complex, 0 to 6 percent slopes makes up 98.2 percent (6.3 acres), while the remaining 1.8 percent (0.1 acres) consists of Urban land-Lester complex, 2 to 18 percent slopes. The soil type is not rated for an erosion hazard rating, meaning that erosion is unlikely under ordinary climatic conditions.

According to the Geotechnical Engineering Report (January 28, 2020) prepared for the project site, the site topography ranges from 914 feet to 922 feet in elevation, sloping downward from southwest to northeast. Site grading for the proposed development will occur, with approximately 20,000 cubic yards (cy) of excavation proposed for site grading and development.

## 11. Water Resources

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

There are no surface waters within or adjacent to the project site. Minnesota Department of Natural Resources (DNR) Public Waters within one mile of the project site include Minnehaha Creek, Mirror Lake, and five unnamed public water wetlands (see Figure 4). Minnehaha Creek, located 0.4 miles north of the site, is listed on the Minnesota Pollution Control Agency's (MPCA's) 303d Impaired Waters List for benthic macroinvertebrates bioassessments, chloride, dissolved oxygen, and fish bioassessments.

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

According to the Geotechnical Engineering Report (January 28, 2020) prepared for the project site, groundwater was measured at depths ranging from 13.5 to 33.5 feet. Perched water may be present over less permeable soils and could contribute to fluctuations in water conditions.

The project site is located within the Edina Wellhead Protection Area and Drinking Water Supply Management Area (low vulnerability). According to the Minnesota Department of Health's (MDH's) Minnesota Well Index,<sup>4</sup> there are no wells within the project site or within 150 feet of the project site.

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

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

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

Based on the Metropolitan Council's Sewer Availability Charge determination standards for the proposed improvements with the proposed uses (see site plan in Appendix A), the additional wastewater flows are projected to be approximately 212,900 gallons per day (GPD) at full buildout over the next 10 years. Wastewater is expected to be equivalent to domestic strength wastewater. In the event a specific user would have wastewater stronger than domestic strength wastewater, a pretreatment facility would be required to be installed.

A sewer line to service the three buildings will be stubbed off of one of the two existing sanitary mains in Excelsior Boulevard. An existing public sanitary sewer lift station exists in an easement on the south side of the site, adjacent to Excelsior Boulevard. This lift station will need to be protected and remain in service throughout construction, or provisions will need to be made for temporary bypass pumping during interruptions in service. Increase in flows to the lift station would likely require improvements to the lift station. Manholes will be provided every 200 feet to provide access to the main line on the site for serviceability and monitoring. All sanitary sewers are located outside the MDH required setbacks from a well. No on-site wells have been identified; however, if unidentified wells are found, the MPCA and MDH will be contacted and any wells

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<sup>4</sup> Available at <https://mnwellindex.web.health.state.mn.us/>

will be sealed by a licensed well contractor according to Minnesota Rules Chapter 4725.

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

Not applicable.

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

Not applicable.

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

The project site consists of primarily impervious surfaces. It was initially developed prior to the implementation of regulations to manage stormwater runoff quality and quantity, and no apparent stormwater best management practices (BMPs) appear to be located within the site. Stormwater from the site currently sheet flows off the site to several municipal storm sewer catch basins in the surrounding roads that flow in the storm sewer system eastbound in Excelsior Boulevard right-of-way, and ultimately to Minnehaha Creek.

Post-construction quality of stormwater runoff from the project site will be improved by BMPs to meet the treatment requirements of the City and Minnehaha Creek Watershed District (MCWD) for total suspended solids (TSS) removal, as well as MPCA treatment requirements. Stormwater quantity will be controlled such that volume and discharge rates are consistent with MCWD for redevelopment (1 inch or 0.5 inch of abstraction). All proposed BMPs for the project site will occur outside the public right-of-way. Completed conveyance systems and BMPs for the project will be designed according to acceptable industry standards and conform to jurisdictional requirements. In combination with limited aboveground raingardens, underground filtration treatment and attenuation will likely be utilized to meet the water quality standards where space for aboveground BMPs is limited. Pre-treatment of stormwater will be provided as required by the City and MCWD. The soils in the stratum of underground filtration are generally sandy (SP) soils with high infiltration rates; however, due to soil vapor and groundwater contamination, filtration with stormwater BMP liners will likely be necessary as opposed to infiltration. The final design of the site, once determined, will achieve all of the outcomes stated above to

manage stormwater within the project boundaries and will comply with all City of Hopkins, MCWD, and MPCA stormwater requirements.

A Stormwater Pollution Prevention Plan (SWPPP) will be developed in accordance with the National Pollutant Discharge Elimination System (NPDES) permit administered by the MPCA. The SWPPP will cover temporary measures to prevent pollution during construction (erosion and sediment control as well as controls to minimize spills, leaks, or other discharges of pollutants) and permanent measures to prevent stormwater pollution after construction. These BMPs may include one or more of the following: silt fencing, inlet sediment filters, sediment traps, grit chambers, temporary ditch checks, rock filter dikes, fiber logs, turf reinforcement mats, temporary seeding, riprap and erosion control blankets for disturbed areas, and seeding or placement of sod or other plant material for final restoration. An Erosion Control Plan checklist will be followed by the developer to meet city and state requirements, minimize drainage problems and soil erosion, and prevent sediment from entering curb and gutter systems and storm sewer inlets.

- iii. Water Appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use, and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.**

Water appropriation for new wells or an increase in authorized volume is not anticipated for the project as the City's current system can accommodate the development. However, if dewatering is required for construction, a permit will be obtained from the DNR. No wells have been identified within the project site; therefore, no well abandonment is anticipated.

- iv. Surface Waters**

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

No wetland features or surface waters were identified within the project site; therefore, no impacts are anticipated.

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

No impacts to surface water features are anticipated.

## **12. Contamination/Hazardous Materials/Wastes**

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

A Phase I Environmental Site Assessment (ESA) (January 14, 2020) was completed for the project site. Potentially contaminated properties were identified through user-provided information, a regulatory database review, historical and physical records review, interviews, local government inquiries, and a visual noninvasive reconnaissance of the site and adjoining properties. The following Recognized Environmental Conditions (RECs) were identified in connection with the project site:

- Historical and current operations on the project site included the use and storage of hazardous substances and/or petroleum products (including a lab, a boat store with paint booth, a filling station, a dry cleaner, a machine shop, a printer, and a forklift repair facility), which have the potential to impact soil, soil vapor, and groundwater.
- During a Phase II ESA conducted in association with construction of the METRO Green Line Extension, trichloroethene-impacted groundwater and fill soil with debris was encountered.
- Historically, nearby properties have operated as auto shops, gas stations, or dry cleaners. Both auto service shops and dry-cleaning facilities historically used and stored chemicals that can present risk if released into soil and groundwater. There is potential for nearby historical facilities to be a source of impact to soil, groundwater, or soil vapor.

A Limited Phase II ESA (February 11, 2020) was completed for the project site to further evaluate RECs identified during the Phase I ESA. Specifically, the Limited Phase II ESA included evaluation of soil, soil vapor, and groundwater conditions at the project site. The results of the Phase II ESA indicate that conditions exist on the project site that may require response actions, including the following:

- Trichloroethylene (TCE) was detected in five of the 12 groundwater samples. The TCE impacts are fairly widespread across the project site and do not necessarily suggest one onsite source. Diesel range organics (DRO) were detected in seven of the 11 groundwater samples.
- Elevated concentrations of soil vapors were detected below the eastern (Site B) and western (Site A) building floor slabs.
- No field indications of contamination were noted in the soil samples. Impacts relative to regulatory criteria were only encountered in one of the 19 soil samples.

A Response Action Plan/Construction Contingency Plan (RAP/CCP) will be prepared that will describe how impacted soil and other media would be managed during redevelopment and will include procedures that will be used to identify, evaluate, and determine disposition of previously unidentified impacted materials that could be encountered.

Liners will be used for the stormwater BMPs in the contaminated areas to prevent infiltration.

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

Demolition debris and earth materials will be generated during demolition of the existing buildings and parking lot. Demolition debris is inert material such as concrete, brick, bituminous, and rock. The solid wastes generated during demolition will be recycled or disposed of at a state-permitted landfill.

Asbestos-containing materials (ACM) will require management prior to any demolition, renovation, or operations and maintenance work that might disturb identified or assumed asbestos materials. If ACM is discovered during renovation/demolition activities, disturbance work will immediately stop until a determination regarding asbestos content within the material is discovered.

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

Hazardous waste products are not anticipated to be produced or stored within the proposed development.

**c. Project Related Use/Storage of Hazardous Materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location, and size of any above or below**

**ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spills or releases of hazardous materials. Identify measures to avoid, minimize, or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.**

No above ground or underground storage tanks have been identified within the project site. Any hazardous waste materials used/stored during construction and/or operation of the project will be disposed of in the manner specified by local or state regulation or by the manufacturer. A spill prevention plan will be developed, and proper spill prevention controls will be in place for any vehicle refueling or maintenance that occurs on site during construction.

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

Regulated material and/or waste will be managed in accordance with state requirements. No known toxic or hazardous wastes are anticipated to be generated on the site. Toxic or hazardous waste to be stored on the site during construction will include fuel and oil necessary to operate heavy construction equipment and during operations may include commercial cleaning supplies.

### **13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)**

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

The project site has been previously disturbed through construction of commercial buildings. Due to fragmented and low-quality habitat, the wildlife that inhabit this area are generalist species adapted to highly disturbed conditions. These species are generally more tolerant of human presence and activities and have demonstrated by their presence that they adapt readily to the human environment.

Based on information from the US Fish and Wildlife Service range map, the project site is located within a high potential zone of the rusty patched bumble bee; however, the impervious nature of the site does not provide suitable habitat.

The project site is not located within any regionally significant ecological areas (RSEAs).

- b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-965) and/or correspondence number (ERDB) from which the data were obtained, and attach the**

**Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe results.**

A review of the DNR Natural Heritage Inventory System was conducted per license agreement LA-965 for the project site and within approximately one mile of the project site. The database includes known occurrences of any state endangered, threatened, or special concern species. The review identified no species within one mile of the project site.

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

No impacts to fish, wildlife, plant communities, rare features, or ecosystems are anticipated. A request for concurrence was submitted to the DNR and is currently pending (see correspondence in Appendix B).

The proposed project would not result in the introduction of invasive species. Disturbed areas would be reestablished using appropriate native and stabilization seed mix.

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

No adverse impacts to fish, wildlife, plant communities, and sensitive ecological resources are anticipated as a result of the proposed project.

Currently, the existing site has a minimal amount of landscape with the site being mostly buildings and parking lots. The planned development will increase the landscaped area with a blend of biodiverse, native, drought-tolerant plant species that could provide pollinator habitat.

Bird-friendly building materials (opaque surfaces, punched window openings, limited areas with large expanses of glazing) and site lighting are proposed to avoid and minimize impacts to migrating birds to the extent practicable.

## **14. Historic Properties**

---

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

A search of the Minnesota State Historic Preservation Office's Statewide Inventory was requested to identify known historic properties and archaeological sites in the vicinity of the project. The database search identified one property that is considered eligible for listing in the National Register of Historic Places (see correspondence in Appendix B). This property, the Minneapolis and Saint Louis Railroad Depot, is located approximately 0.6 miles west of the project site at 9451 Excelsior Boulevard. Given its distance from the project site, no effects to this property are anticipated.

The Statewide Inventory has no archaeological records in the project area. In addition, the Minnesota Office of the State Archaeologist Public Viewer Map indicates there are no known archaeological sites and no known Minnesota Indian Affairs Council archaeological or cultural sites within the section in which the project site is located (Section 19, Township 117N, Range 21W).

## 15. Visual

---

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

The project site is an existing commercial development with one-story buildings and surface parking lots. The proposed project will result in the construction of three seven-story buildings, neighborhood-scale streets and pedestrian improvements, including boulevards with street trees, and a linear park. The proposed project is compatible with planned land use for the area, and lighting will be in conformance with city ordinances. The project site is not near any unique scenic views or vistas. Adverse visual effects are not anticipated.

## 16. Air

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

No stationary source emissions are anticipated; therefore, no mitigation is required.

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

Motor vehicles emit a variety of air pollutants including carbon monoxide (CO), hydrocarbons, nitrogen oxides, and particulates. The primary pollutant of concern is CO, which is a byproduct of the combustion process of motor vehicles. CO concentrations are highest where vehicles idle for extended periods of time. For this reason, CO concentrations are generally highest in vicinity of signalized intersections where vehicles are delayed and emitting CO. Generally, concentrations approaching state air quality standards are found within about 100 feet of a roadway source. Further from the road, the CO in the air is dispersed by the wind such that concentrations rapidly decrease.

MnDOT has developed a screening method designed to identify intersections that will not cause a CO impact above state standards. MnDOT has demonstrated that even the 10 highest traffic volume intersections in the Twin Cities do not experience CO impacts.

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

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

The project would generate temporary fugitive dust emissions during construction. These emissions would be controlled by watering, sprinkling, or calcium chloride application, as appropriate or as prevailing weather and soil conditions dictate. Dust emissions are not anticipated during operations as all surfaces will either be impervious or vegetated.

The construction and operation of the project are not expected to generate objectionable odors.

Dust and odors are not anticipated to have a significant impact on human health, quality of life, or the environment.

## 17.Noise

---

**Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area; 2) nearby sensitive receptors; 3) conformance to state noise standards; and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.**

The project site is an existing commercial development surrounded by other commercial uses, railroad tracks, a county road, and city streets that generate noise. Nearby sensitive receptors include the residential areas east of Blake Road.

Noise will be temporarily generated by construction activities. The city ordinance (Sec.102-517) states, "Ground vibration and noise caused by motor vehicles, trains, or temporary construction or demolition shall be exempt from these regulations. However, if deemed appropriate, the city may establish limits on the hours of operation of temporary construction or demolition operation to limit off-site impacts."

Operations of the project will generate noise consistent with the existing commercial and residential uses in the area and are not anticipated to affect quality of life. Building design will incorporate noise reduction technologies in interior spaces.

**18. Transportation**

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

The Traffic Impact Analysis conducted for the proposed project is included in Appendix C. Below is a summary of the information included in that report.

*Parking*

The project site includes 219 existing parking spaces. The proposed project includes 270 parking stalls on Site A, 330 parking stalls on Site B, and 350 parking stalls on Site C for a total of 950 parking stalls. The majority of the stalls will be enclosed within the building. The proposed parking is consistent with city ordinances (Sec. 102-365).

*Traffic Generation*

The trip-generating potential of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. Standard ITE trip rates were used to develop the total trips generated by the site. The average rate for ITE land uses were used to calculate the trip generation potential of the site.

The studies completed by the Metropolitan Council for the METRO Green Line Extension forecast that Blake Road Station, adjacent to the proposed site, will serve 1,300 riders per day in 2040 and that the majority of riders are expected to walk to the station. Based on its proximity and density, the proposed project will likely create a significant portion of the projected ridership. However, the traffic analysis for the proposed project did not assume a transit reduction to provide a worst-case traffic analysis scenario.

Table 5 provides a summary of the AM and PM peak hour trip generation for the existing development based on existing traffic counts, and Table 6 provides a summary of the number of trips anticipated to be generated by the proposed project during the weekday AM and PM peak hours in 2030 with the existing site traffic removed.

*Table 5: Existing Site Trip Generation*

Land Use Description	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing site	53	32	85	145	171	316

Table 6: Project Site Trip Generation in 2030

Land Use Description	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Site A: Multi-family housing (mid-rise) (ITE 221) <sup>5</sup>	204 units	1,110	19	54	73	55	35	90
Site B: Mid-rise residential with first floor commercial (ITE 231)	250 units	860	21	54	75	63	27	90
Site C: Multi-family housing (mid-rise) (ITE 221) <sup>5</sup>	298 units	1,622	28	79	107	80	51	131
Total site generated trips		3,592	68	187	255	198	113	311

The AM peak hour trip generation is anticipated to increase substantially with the proposed project. The existing site generates 85 AM peak hour trips, and the proposed project is anticipated to generate 255 AM peak hour trips in 2030. This difference is expected when switching from a retail-focused land use to a residential-focused land use. Trip generation will be similar to existing in the PM peak hour (316 PM peak hour trips with the existing site and 311 PM peak hour trips with the proposed project in 2030).

*Transit and Other Transportation Modes*

The project site is located adjacent to station on the METRO Green Line Extension (service will begin in 2023). As noted above, the Blake Road Station is projected to serve 1,300 riders per day in 2040, and the majority of riders are expected to walk to the station. The addition of a bus stop near the Blake Road Station will also provide more options to use transit.

In addition to the Cedar Lake Regional Trail north of the project site, there are existing bicycle and pedestrian facilities on Excelsior Boulevard and Blake Road. Excelsior Boulevard has sidewalks on both sides of the roadway west of Blake Road and has pedestrian crossings at the signals. Blake Road has trails on both sides of the roadway, which connect to the Cedar Lake Regional Trail. Blake Road also has a pedestrian crossing with flashing beacons at the access to the project site. The proposed project will have sidewalks along all the interior roadways and will provide connections to the Blake Road Station and bus stops.

- b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project’s impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation’s Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance.**

A capacity analysis was performed for the following intersections during the weekday AM and PM peak hours:

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<sup>5</sup> If Sites A and C include retail when submitted for the permitting process, the trip generation will be re-evaluated to determine if additional impacts will occur and other mitigation needed.

- Excelsior Boulevard & Milwaukee Street/Jackson Avenue
- Excelsior Boulevard & Pierce Avenue (site access)
- Excelsior Boulevard & right-in/right-out (RIRO) (site access)
- Excelsior Boulevard & Blake Road
- Blake Road & full site access (site access)
- Blake Road & RIRO (site access)
- Blake Road & 2<sup>nd</sup> Street

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is measured in average delay per vehicle. It is expressed in terms of level of service (LOS), which ranges from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The LOS grades quantify and categorize a driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in the Traffic Impact Analysis in Appendix C.

All study intersections are anticipated to operate at LOS D or better in the AM peak hour. In the PM peak hour, the study intersections are expected to operate at LOS C or better, except for Excelsior Boulevard & Pierce Avenue. Queues for the southbound approach at Excelsior Boulevard & Pierce Avenue are acceptable, but the delays for the vehicles attempting to make southbound left turns would likely cause vehicles to use a different access. Mitigation at this access will likely be required by 2030 with or without the proposed project. All turn lane queues are within their storage capacity. As future phases are proposed, a supplemental traffic analysis will be completed to ensure turn lane capacity is adequate not only for this development but also as background traffic changes over time

In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue. All other site access points operate at an acceptable level of service and safety, according to the 10-year crash history. There are no geometric changes required or recommended in the study area as a result of the proposed project.

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

To mitigate delays at Excelsior Boulevard & Pierce Avenue, it is recommended that a signal be installed at Excelsior Boulevard & Pierce Avenue by 2030. Installing a signal could provide benefits to the development traffic as well as the transit lines that will use Pierce Avenue to access the bus stops near the Blake Road Station.

## **19. Cumulative Potential Effects**

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

Cumulative potential effects are defined as “the effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid,

regardless of what person undertakes the other projects or what jurisdictions have authority over the projects.”<sup>6</sup> The geographic areas considered for cumulative potential effects are those adjacent to the project site, and the timeframe considered includes projects that would be constructed in the reasonably foreseeable future.

The METRO Green Line Extension and Blake Road Station will be located immediately north of the project site, and service is expected to begin in 2023. An Environmental Impact Statement (EIS) was completed for the METRO Green Line Extension.<sup>7</sup>

Directly northwest of the project site is a 17-acre redevelopment parcel owned by the MCWD. The MCWD purchased the site in 2001 with the intent to use 4 to 6 acres for stormwater management and the remaining land for future development. Originally, the site contained a large cold storage warehouse facility which was cleared in 2018. The MCWD and the City of Hopkins have been working together to prepare the site for redevelopment and anticipate going out for developer selection in the near future, with the intent for redevelopment to begin in 2021.

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

As stated above, the METRO Green Line Extension and Blake Road Station will be located immediately north of the project site. The EIS for the METRO Green Line Extension included the potential that the light rail line would spur redevelopment. Additionally, the City of Hopkins has planned for redevelopment in this area through their comprehensive plan process.

Additionally, while there is not yet an approved redevelopment plan for the MCWD site, the City’s 2040 comprehensive plan guides it as Activity Center, and both the MCWD and the City anticipate future redevelopment will follow this guiding. The Activity Center land use category surrounds and supports the planned Blake Road and Shady Oak light rail stations along the METRO Green Line Extension. It calls for moderate to high density mixed-use development designed to complement and enhance the existing development pattern in these areas and support the public investment in transit. The comprehensive plan expects the Activity Center areas to experience significant reinvestment and redevelopment to absorb a substantial portion of the city’s anticipated future growth. The anticipated density and scale of development in this area is medium to larger scale neighborhood and regional uses, with densities between 75 and 150 units per acre and a mix of 15 to 25 percent commercial and 75 to 85 percent residential.

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

Impacts from future developments adjacent to the project site will be addressed via the regulatory permitting and approval processes and will be individually mitigated to ensure minimal cumulative impacts occur. Additionally, the METRO Green Line previously completed

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<sup>6</sup> Minnesota Rules, part 4410.0200, subpart 11a

<sup>7</sup> Available at <https://metrocouncil.org/Transportation/Projects/Light-Rail-Projects/Southwest-LRT/Environmental.aspx>

environmental review, and the MCWD site has been contemplated within the City's comprehensive plan.

## 20. Other Potential Environmental Effects

---

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

The proposed development is a transit-oriented development adjacent to a METRO Green Line Extension light rail station. Each phase of the proposed Blake Road Station Development project defines and beautifies the streetscape while complementing the crucial transit functions in and around the site. Currently, the majority of the site is comprised of older, stressed pavement with ill-defined access and a plethora of surface parking stalls. In contrast, the proposed development will transform the site and will emphasize a neighborhood scale of connected streets, with traffic calming measures and pedestrian features, that will significantly improve the aesthetic of the area.

The project will enroll in the Xcel Energy Design Assist (EDA) program to optimize energy design strategies. Energy efficiency with performance functionality will be aggressively deployed to achieve sustainable conservation and ongoing reduction of the project's carbon footprint.

The project will add to the urban tree canopy, reduce impervious surface on the project site, and provide multi-modal connections as highlighted above. *Cultivate Hopkins*, the city's 2040 comprehensive plan, includes goals and policies focused on building and site efficiency, protecting and restoring natural resources, and improving the resiliency of the community.<sup>8</sup> The proposed project will be consistent with relevant policies identified in the comprehensive plan.

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<sup>8</sup> Natural Environment. *Cultivate Hopkins*. Available at <https://www.hopkinsmn.com/DocumentCenter/View/1993/Natural-Environment-Sustainability-and-Natural-Resources-PDF>.

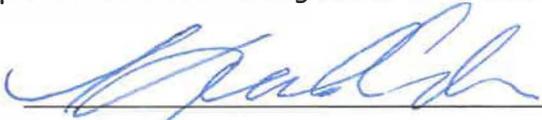
## RGU Certification

The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.

### I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages, or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively,
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature



Date

8/24/20

Title

Director of Planning & Dev

# Figures

Figure 1: County Map



Figure 2: USGS Map

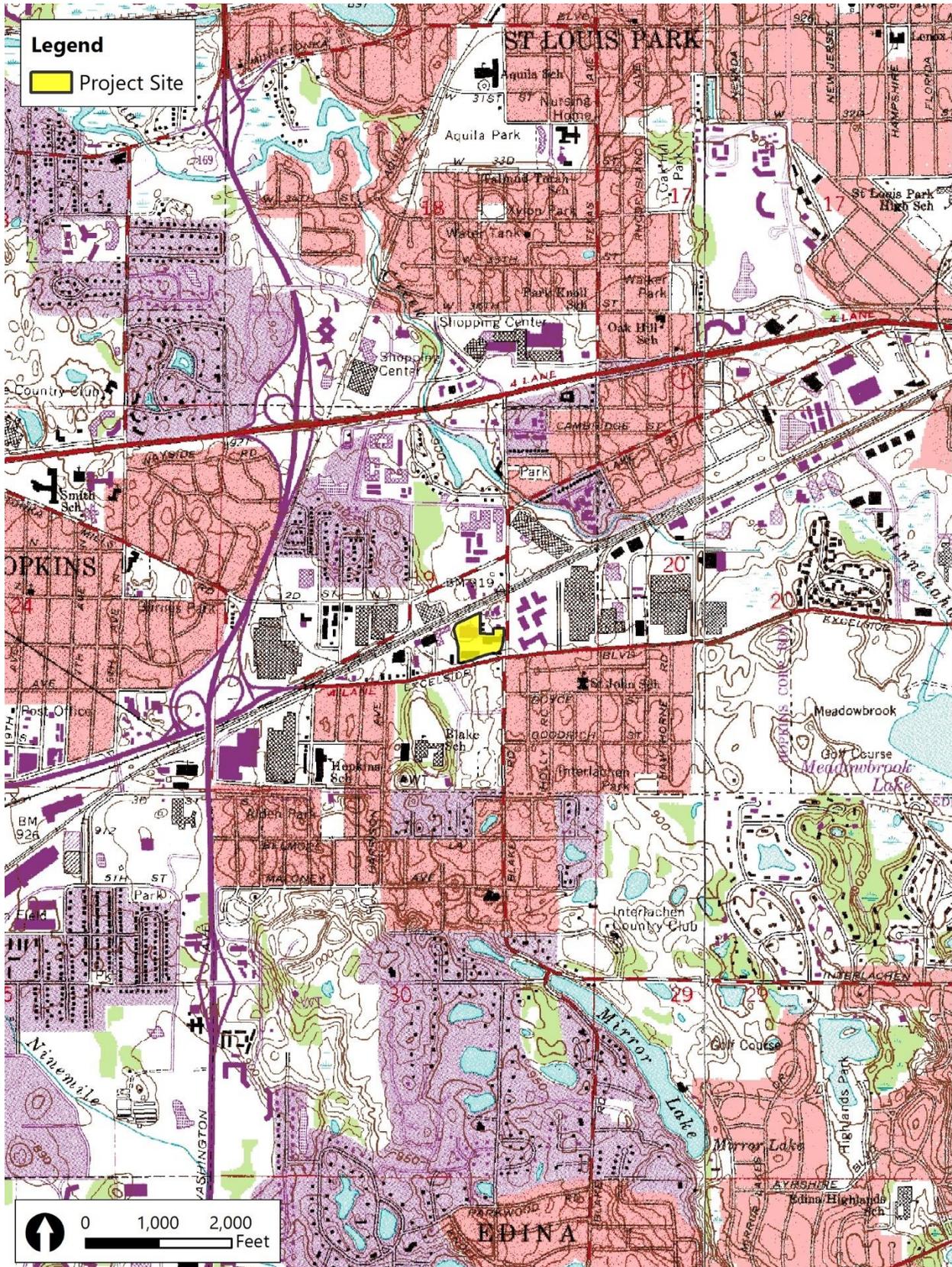


Figure 3: Existing Conditions

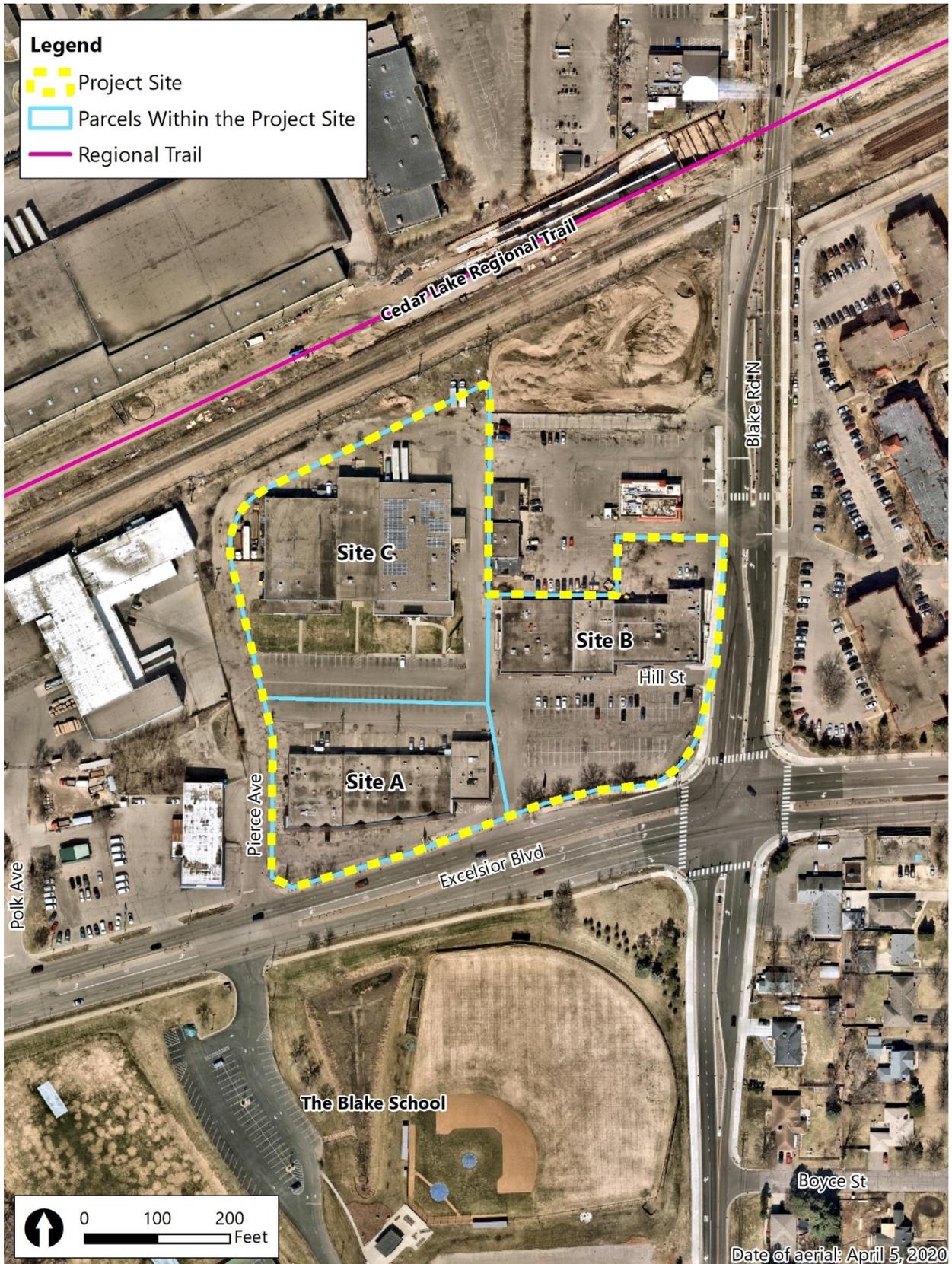


Figure 4: Water Resources



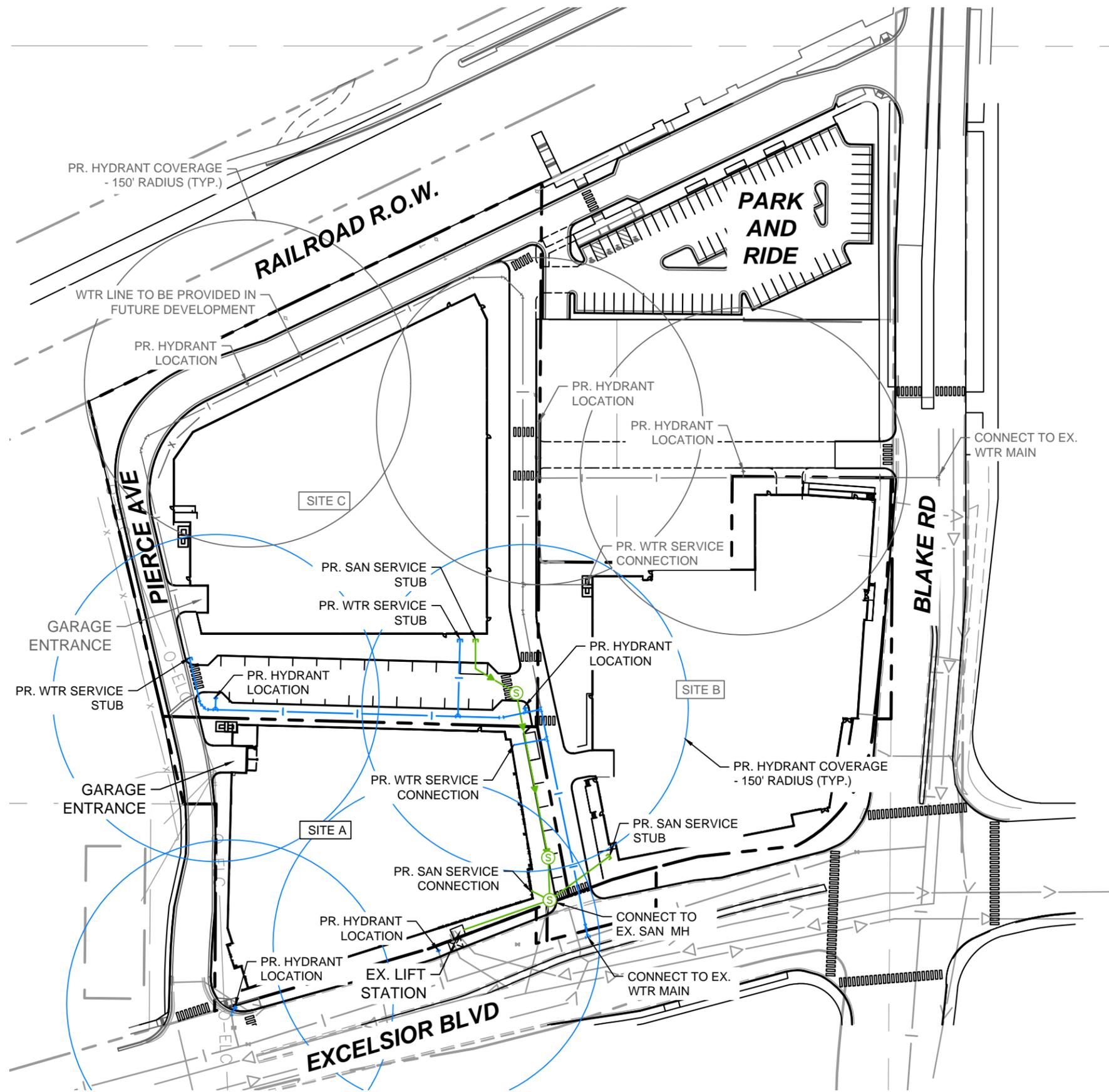
# **APPENDIX A**

## **Proposed Site Plan**



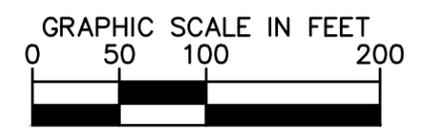
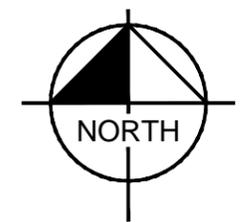
**PROGRAMMATIC LEGEND**

- LOBBY
- AMENITY
- RETAIL
- PARKING
- SERVICE / STORAGE



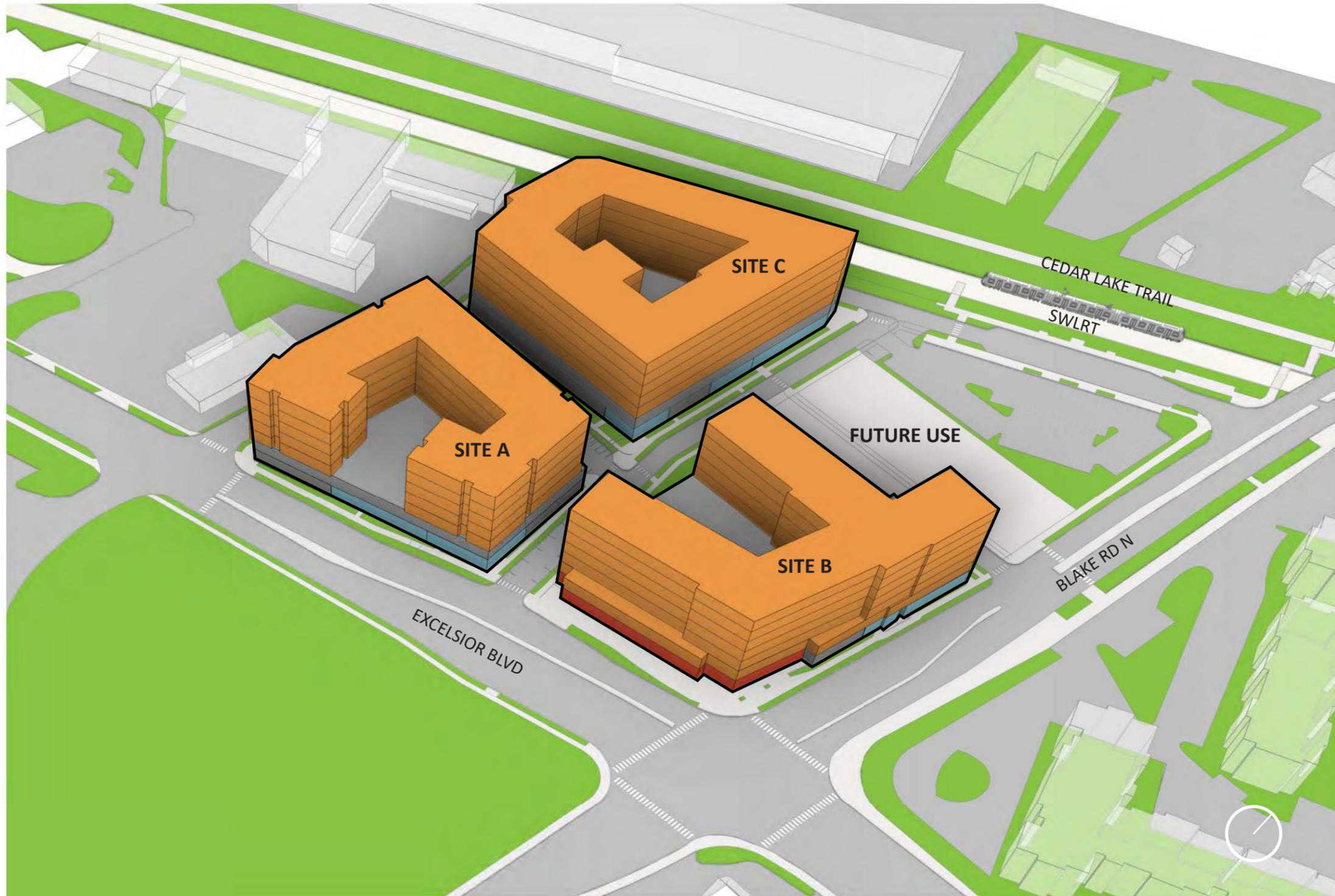
**LEGEND**

	APPROXIMATE PROPERTY LINE
	PROPOSED WATER SERVICE
	FUTURE WATER SERVICE
	PROPOSED SANITARY SERVICE
	FUTURE SANITARY SERVICE
	PROPOSED SANITARY MANHOLE



May 22, 2020

PRELIMINARY-NOT FOR CONSTRUCTION



**PROGRAMMATIC LEGEND**

	PARKING/ BIKE STORAGE		LANDSCAPE/PARK
	LOBBY/AMENITY		RESIDENTIAL
	RETAIL		



# **APPENDIX B**

## **Agency Correspondence**

## Payne, Ashley

---

**From:** Peterson, Kestra  
**Sent:** Wednesday, July 22, 2020 8:09 AM  
**To:** Review.NHIS@state.mn.us  
**Cc:** Dammel, Rachel  
**Subject:** Blake Road Station Project, Hennepin County - NHIS Review  
**Attachments:** Existing Conditions.jpg

Hello,

Kimley-Horn has been contracted to complete an EAW for the Blake Road Station Project located in Hopkins, Hennepin County, MN. Trilogy Real Estate Group is proposing to redevelop 6.4 acres of existing commercial uses at the intersection of Excelsior Boulevard and Blake Road South, adjacent to the future METRO Green Line Blake Road Station. The proposed redevelopment would include the phased construction of three multi-use buildings that include residential units, retail, and parking.

A review of the DNR Natural Heritage Inventory System database was conducted per license agreement LA-965 for the area within one mile of the project site, and no records were identified. There are no regionally significant ecological areas (RSEAs) or DNR public waters within one mile of the project site.

Based on the above information, no adverse impacts to fish, wildlife, plant communities, rare features, or ecosystems are anticipated. Please review our conclusions and provide concurrence if you agree. Let us know if you have any questions or need additional information.

Thanks!

**Kestra Peterson**

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

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## Dammel, Rachel

---

**From:** MN\_MNIT\_Data Request SHPO <DataRequestSHPO@state.mn.us>  
**Sent:** Thursday, July 16, 2020 7:36 PM  
**To:** Dammel, Rachel  
**Subject:** RE: Database Search Request  
**Attachments:** History.xls

**Categories:** External

Hello Rachel,

Your requested historic report is attached. Our database has no archaeological records for the given project area.

Jim



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

**Notice:** This email message simply reports the results of the cultural resources database search you requested. The database search is only for previously known archaeological sites and historic properties. **IN NO CASE DOES THIS DATABASE SEARCH OR EMAIL MESSAGE CONSTITUTE A PROJECT REVIEW UNDER STATE OR FEDERAL PRESERVATION LAWS** – please see our website at <https://mn.gov/admin/shpo/protection/> for further information regarding our Environmental Review Process.

Because the majority of archaeological sites in the state and many historic/architectural properties have not been recorded, important sites or properties may exist within the search area and may be affected by development projects within that area. Additional research, including field surveys, may be necessary to adequately assess the area's potential to contain historic properties or archaeological sites.

Properties that are listed in the National Register of Historic Places (NRHP) or have been determined eligible for listing in the NRHP are indicated on the reports you have received, if any. The following codes may be on those reports:

**NR** – National Register listed. The properties may be individually listed or may be within the boundaries of a National Register District.

**CEF** – Considered Eligible Findings are made when a federal agency has recommended that a property is eligible for listing in the National Register and MN SHPO has accepted the recommendation for the purposes of the Environmental Review Process. These properties need to be further assessed before they are officially listed in the National Register.

**SEF** – Staff eligible Findings are those properties the MN SHPO staff considers eligible for listing in the National Register, in circumstances other than the Environmental Review Process.

**DOE** – Determination of Eligibility is made by the National Park Service and are those properties that are eligible for listing in the National Register, but have not been officially listed.

**CNEF** – Considered Not Eligible Findings are made during the course of the Environmental Review Process. For the purposes of the review a property is considered not eligible for listing in the National Register. These properties may need to be reassessed for eligibility under additional or alternate contexts.

Properties without NR, CEF, SEF, DOE, or CNEF designations in the reports may not have been evaluated and therefore no assumption to their eligibility can be made. Integrity and contexts change over time, therefore any eligibility determination made ten (10) or more years from the date of the current survey are considered out of date and the property will need to be reassessed.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic/architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson, Environmental Review Specialist @ 651-201-3285 or by email at [kelly.graggjohnson@state.mn.us](mailto:kelly.graggjohnson@state.mn.us). The Minnesota SHPO Archaeology and Historic/Architectural Survey Manuals can be found at <https://mn.gov/admin/shpo/identification-evaluation/>.

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



---

**From:** Dammel, Rachel <Rachel.Dammel@kimley-horn.com>  
**Sent:** Thursday, July 16, 2020 6:25 PM  
**To:** MN\_MNIT\_Data Request SHPO <DataRequestSHPO@state.mn.us>  
**Subject:** Database Search Request

**This message may be from an external email source.**

Do not select links or open attachments unless verified. Report all suspicious emails to Minnesota IT Services Security Operations Center.

---

Hello,

I would like to request a database search for a proposed project located in the northwest quadrant of the Excelsior Boulevard/Blake Road South intersection in Hopkins (NW ¼ of the SE ¼ of Section 19, Township 117N, Range 21W). The location is shown on the attached USGS and existing conditions maps. Please let me know if you need any additional information.

Thank you,  
Rachel

Rachel Dammel, AICP  
**Kimley-Horn** | 767 Eustis Street, Suite 100, Saint Paul, MN 55114  
Direct: 651 643 0412 | [www.kimley-horn.com](http://www.kimley-horn.com)

COUNTY	CITYTWP	PROPNAME	ADDRESS	TOWNSHIP	RANGE	SECTION	QUARTERS	USGS	REPORTNUM	NRHP	CEF	DOE	INVENTNUM
Hennepin													
		Minneapolis and Saint Louis Railroad Depot	9451 Excelsior Blvd.	117	21	19	NE-SW	Hopkins	HE-2010-21H		Y		HE-HOC-014

# **APPENDIX C**

## **Traffic Impact Analysis**



## TRAFFIC IMPACT ANALYSIS

# BLAKE & EXCELSIOR REDEVELOPMENT

HOPKINS, MINNESOTA

*Prepared for:*

**ESG Architecture & Design and Trilogy Real Estate Group**

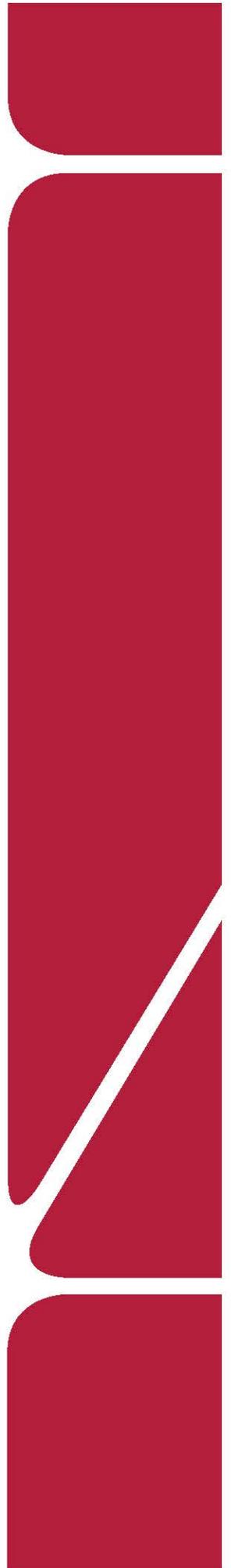
*Prepared By:*

**Kimley-Horn and Associates, Inc.**

767 N Eustis Street, Suite 100  
St. Paul, MN 55114

AUGUST 2020

**Kimley»»Horn**



# TRAFFIC IMPACT ANALYSIS

## BLAKE & EXCELSIOR REDEVELOPMENT

HOPKINS, MINNESOTA

### ***REPORT CERTIFICATION***

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



---

Jacob A. Rojer, P.E.

License No. 56767

Date: 8/24/2020

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## APPENDIX

- A. Exhibits**
- B. Site Plan**
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- D. SimTraffic Analysis Results**

## INTRODUCTION

ESG Architecture & Design and Trilogy Real Estate Group are proposing a multiphase development that includes, a 215-unit multifamily housing building, a 250-unit multifamily housing building, a 298-unit multifamily housing building, and the potential for an additional outlot development. It is anticipated that there will be a total of 19,000 sq. ft. of retail between the three buildings, however, the exact amount in each building is not known at this time and will be evaluated as each building is developed. The total development will include around 763 units of multifamily and 19,000 square feet of retail on the northwest corner of Excelsior Boulevard (CSAH 3) & Blake Road (CSAH 20) in Hopkins, MN. The exact unit count may vary slightly since the 250-unit apartment building and the 298-unit apartment building would not be built until 2026 and 2030, respectively. The site is currently occupied by various retail developments with five accesses onto Excelsior Boulevard and Blake Road. **Exhibit 1** in **Appendix A** shows the proposed project location. The proposed site plan is included in **Appendix B**.

## EXISTING ROADWAY CONDITIONS

The proposed development is located in the northwest corner of Excelsior Boulevard & Blake Road in Hopkins, MN. The following study intersections are included in the traffic analysis.

- Excelsior Boulevard (CSAH 3) & Milwaukee Street/Jackson Avenue
- Excelsior Boulevard (CSAH 3) & Pierce Avenue (site access)
- Excelsior Boulevard (CSAH 3) & Right-In/Right-Out (RIRO) (site access)
- Excelsior Boulevard (CSAH 3) & Blake Road (CSAH 20)
- Blake Road (CSAH 20) & Full Site Access (site access)
- Blake Road (CSAH 20) & Pierce Avenue RIRO (site access)
- Blake Road (CSAH 20) & 2<sup>nd</sup> Street

The study intersections listed above are shown in **Exhibit 1** in **Appendix A**. The Hill Street RIRO site access on Blake Road was also counted to determine the existing trip generation of the site, but the access was not included in the analysis as this access will be closed with the redevelopment of the site.

## EXISTING ROADWAYS

The redevelopment will have site accesses on Blake Road and Excelsior Boulevard. These are the two major roadways in the study area and the following provides a detailed description.

**Excelsior Boulevard (CSAH 3)** is a four lane east-west roadway with left turn lanes at accesses. Excelsior Boulevard is classified as an A-Minor Reliever according to the City of Hopkins 2040 Comprehensive Plan. The MnDOT Traffic Mapping Application reports the AADT Excelsior Boulevard as 19,100 vehicles per day (vpd). The current posted speed limit on Excelsior Boulevard is 35 miles per hour west of Blake Road and 40 miles per hour east of Blake Road.

**Blake Road (CSAH 20)** is a four lane north-south roadway with left turn lanes at accesses. Blake Road was reconstructed in 2018 and 2019 and there is ongoing construction at the Cedar Lake Trail crossing and future Southwest Light Rail crossing. Blake Road is classified as a Major Collector according to the City of Hopkins 2040 Comprehensive Plan. The MnDOT Traffic Mapping

Application reports the AADT Blake Road as 12,200 vpd. The current posted speed limit on Blake Road is 30 miles per hour.

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## EXISTING TRAFFIC VOLUMES

To analyze the traffic operations at the study intersections, weekday peak period turning movement counts were collected on Wednesday February 26, 2020 and Tuesday March 10, 2020. With the ongoing construction along Blake Road the counts were compared to 2017 counts provided by Hennepin County and historical AADT data along Excelsior Boulevard and Blake Road. It was determined that the traffic counts collected were significantly lower than the historic counts, so the volumes were increased by 40-50 percent to better represent a typical weekday.

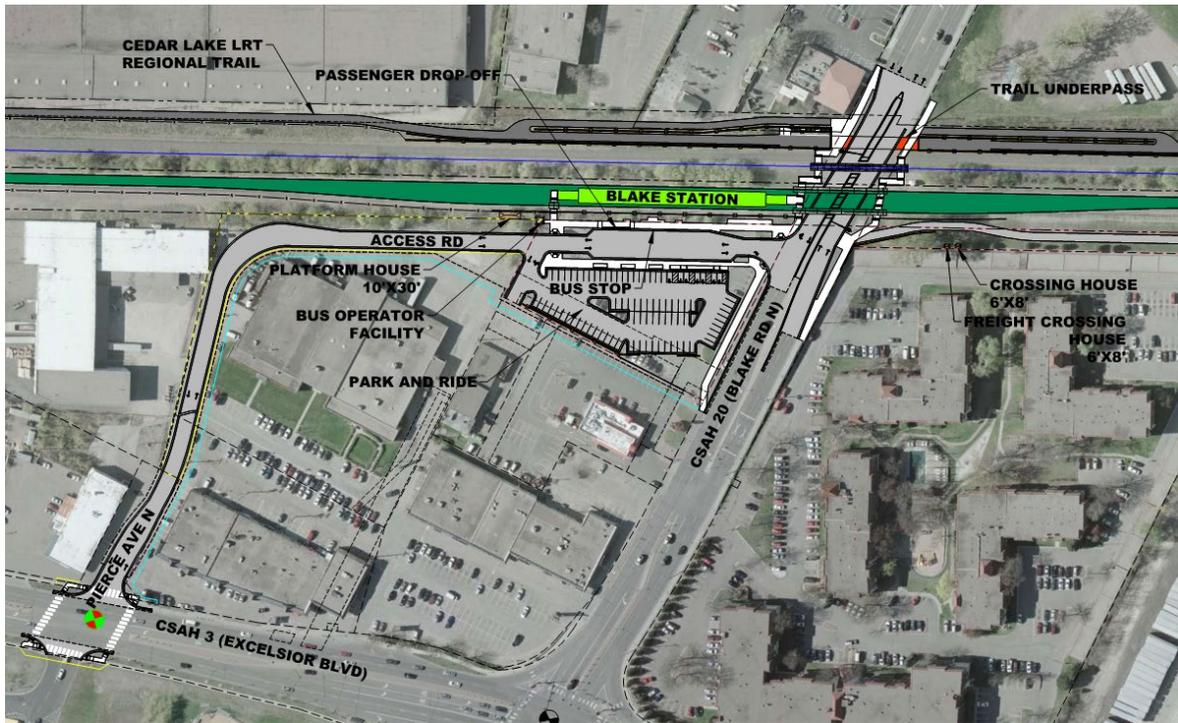
**Exhibit 2 in Appendix A** provides a summary of the adjusted weekday AM and PM peak hour turning traffic volumes used in the analysis. The raw turning movement count data is provided in **Appendix C**. The network AM peak hour was determined to be 7:30 AM to 8:30 AM and the network PM peak hour was determined to be 4:30 PM to 5:30 PM.

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## ROADWAY IMPROVEMENTS

The Cedar Lake Trail crossing at Blake Road will be converted to an underpass and the Blake Station will be constructed as part of the Southwest LRT project. Pierce Avenue on the west side of the site will be reconstructed and connect to Blake Road near the new transit station and the park and ride lot. Originally, Excelsior Boulevard & Pierce Avenue was intended to be signalized but was not included in the Southwest LRT project because the intersection did not meet traffic signal warrants. Figure 1 below shows the Metro Transit plan for the improvements to be completed in conjunction with the Southwest light rail project (SWLRT). These improvements were included in the opening year and horizon year analysis.

Figure 1 – Metro Transit Blake Station SWLRT Improvements



## BACKGROUND GROWTH

The first phase of the proposed development is anticipated to be completed and open by 2022 with the complete buildout of the site completed by 2030. The City of Hopkins Comprehensive plan was reviewed to identify a background growth rate to develop forecast peak hour volumes at the study intersections for Opening Year (2022) and Horizon Year (2030). The Horizon year analyzed 2030 and not 2040 because the proposed development is not anticipated to add significantly more trips to the study area than the existing site.

**Table 1** provides a summary of the AADT information and the resultant growth rate. To provide a more conservative analysis, the 0.6% growth rate was applied to both the Excelsior Boulevard and the Blake Road corridors for the Existing (2020) traffic volumes to develop the Opening Year No-Build (2022) and Horizon Year No-Build (2030) turning movement volumes.

Table 1 – Annual Growth Rate Calculation

Street Segment	Most Recent AADT		Projected 2040 AADT		Annual Growth Rate
	Year	Volume	Year	Volume	
Excelsior Boulevard	2018	19,100	2040	22,000	0.6%
Blake Road	2018	12,200	2040	13,400	0.4%

In addition to the background growth rate, the 89-stall park and ride lot at the LRT station was added to the 2022 background growth. The trip-generation was calculated using the Institute of Transportation Engineers

(ITE) *Trip Generation Manual, Tenth Edition*. Standard ITE trip rates were used to develop the total trips generated.

For the 2030 background growth a 0.6% annual growth rate was applied, traffic associated with the 89-stall park and ride lot was added, and it was assumed that the 17-acre site east of Blake Road & 2<sup>nd</sup> Street (325 Blake Road) would be developed. Based on concept plans from the City of Hopkins, it was assumed that the 325 Blake Road site would include 643 multifamily housing units, 22,000 square feet of office, and 12,100 square feet of retail. **Table 2** shows the trip generation for the 2022 background condition and the 2030 background condition. The trip generation was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. Standard ITE trip rates were used to develop the total trips generated. The background trips were distributed to adjacent roadways based on the current traffic patterns in the area and a general assessment of the major regional roadways surrounding the study area.

**Table 2 – Background Trip Generation**

Land Use Description	Size	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<b>2022 Background Trips</b>							
Park & Ride (ITE 90)	89 stalls	29	8	37	10	28	38
<b>Total Generated Trips</b>		<b>29</b>	<b>8</b>	<b>37</b>	<b>10</b>	<b>28</b>	<b>38</b>
<b>2030 Background Trips</b>							
Park & Ride (ITE 90)	89 stalls	29	8	37	10	28	38
Multifamily Housing (Mid-Rise) (ITE 221)	643 units	59	170	229	167	108	275
General Office Building (ITE 710)	22,000 sq. ft.	22	4	26	4	21	25
Shopping Center (ITE 820)	12,100 sq. ft.	6	3	9	13	12	25
<b>Total Generated Trips</b>		<b>116</b>	<b>185</b>	<b>301</b>	<b>194</b>	<b>169</b>	<b>363</b>

**Exhibit 3 and 4** in **Appendix A** shows the Opening Year No-Build (2022) & Horizon Year No-Build (2030) turning movement volumes, respectively.

## PROPOSED DEVELOPMENT

### SITE TRIP GENERATION

Traffic counts were collected at all the site accesses to determine the existing trip generation of the site. **Table 3** provides the AM and PM peak hour trip generation for the existing site.

**Table 3 – Existing Site Trip Generation**

Land Use Description	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Site	53	32	85	145	171	316

The trip-generating potential of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. Standard ITE trip rates were used to develop the total trips generated by the site. The average rate for ITE land uses were used to calculate the trip generation potential of the site. Sites A, B, and C are part of the proposed development but the outlot, that currently is a vacated Arbys, is not part of the development plan. Based on conversations with the City of Hopkins and Hennepin County, this analysis assumed that the 0.7 acres of developable land in the outlot could be built out at the same density as the rest of the proposed development, which is 110 units per acre. The exact amount of retail in each building is not known at this time and will be evaluated as each building is developed it was assumed that the retail would be concentrated in Site B as it is on the corner of Excelsior Boulevard & Blake Road. With The proposed new land uses for the site are listed below.

- Site A: a 215-unit multifamily housing building
- Site B: a 250-unit multifamily housing building with retail
- Site C: a 298-unit multifamily housing building
- Outlot: a 77-unit multifamily housing building

The studies completed by the Metropolitan Council for the SWLRT project forecasts that Blake Station, adjacent to the proposed site, will serve 1,300 riders per day in 2040 and that the majority of riders are expected to walk to the station. Based on its proximity and density, this development will likely create a significant portion of the projected ridership. However, this analysis did not assume a transit reduction to provide a worst-case traffic analysis scenario.

**Table 4** provides a summary of the number of trips anticipated to be generated during the weekday AM and PM peak hours for the three analysis scenarios. These scenarios are:

- Site A Buildout with the existing site traffic
- Sites A, B, and C Buildout with the existing site traffic removed
- Sites A, B, C, and Outlot Buildout with the existing site traffic removed

**Table 4 – Site Trip Generation**

Land Use Description	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b>2022 Opening Year (Only Site A + Existing Site Traffic)</b>								
Site A: Multifamily Housing (Mid-Rise) (ITE 221)	215 Units	1,170	20	57	77	58	37	95
<b>Total New Site Generated Trips</b>		<b>1,117</b>	<b>20</b>	<b>57</b>	<b>77</b>	<b>58</b>	<b>37</b>	<b>95</b>
Existing Site Trips		--	53	32	85	145	171	316
<b>Total Analysis Site Trips</b>		<b>--</b>	<b>73</b>	<b>89</b>	<b>162</b>	<b>203</b>	<b>208</b>	<b>411</b>
<b>2030 Build Year (Sites A, B, &amp; C)</b>								
Site A: Multifamily Housing (Mid-Rise) (ITE 221)	215 Units	1,170	20	57	77	58	37	95
Site B: Mid-Rise Residential with 1 <sup>st</sup> Floor Commercial (ITE 231)	250 Units	860	21	54	75	63	27	90
Site C: Multifamily Housing (Mid-Rise) (ITE 221)	298 Units	1,622	28	79	107	80	51	131
<b>Total Site Generated Trips</b>		<b>3,652</b>	<b>69</b>	<b>190</b>	<b>259</b>	<b>201</b>	<b>115</b>	<b>316</b>
<b>2030 Build Year + Additional Out Lot Assumption</b>								
Multifamily Housing (Mid-Rise) (ITE 221)	77 Units	420	7	21	28	21	13	34
<b>Total Site Generated Trips (2030 Build Year + Out Lot)</b>		<b>4,072</b>	<b>76</b>	<b>211</b>	<b>287</b>	<b>222</b>	<b>128</b>	<b>350</b>

Comparing the Existing Site trip generation in **Table 3** to the proposed site trip generation in **Table 4**, the AM peak hour trip generation is anticipated to be significantly higher for the 2030 scenarios than the existing site. The existing site generates 85 AM peak hour trips and the Horizon Year (2030) scenarios are anticipated to generate 259 or 287 trips in the AM peak hour. This difference is expected when switching from a retail focused land use to a residential focused land use. In the PM peak hour, the trip generation is similar with the existing site generating 316 trips and the 2030 scenarios generating 316 or 350 trips.

## SITE TRIP DISTRIBUTION AND ACCESS

The site trips were distributed to adjacent roadways based on the current traffic patterns in the area and a general assessment of the major regional roadways surrounding the study area. In general, the following global trip distribution was assumed for the development:

- 30% north on Blake Road
- 35% east on Excelsior Boulevard

- 25% west on Excelsior Boulevard
- 10% south on Blake Road

The trip distribution for the site-generated traffic used the same overall distribution pattern for the 2022 Site A scenario and the 2030 scenarios, however, the distribution at the site accesses varied between the scenarios. **Exhibits 5 & 6** show the distributions for the two Build years and **Exhibits 7, 8, & 9** show the trip assignment for the three build scenarios. The exhibits can be found in **Appendix A**.

The existing site area has five site accesses, which are listed below:

- Excelsior Boulevard & Pierce Avenue
- Excelsior Boulevard & RIRO
- Blake Road & Hill Street RIRO
- Blake Road & Full Site Access
- Blake Road & Pierce Avenue RIRO

The proposed site area has four site accesses. The site accesses will remain the same as the existing site except the Hill Street RIRO will be closed and the Blake Road RIRO will move approximately 175 feet north of its existing location which will provide better access spacing. The proposed site plan is included in **Appendix B**.

The existing site accesses on Excelsior Boulevard are pivotal to the site. The RIRO on Excelsior Boulevard provides connectivity, it helps maintain a grid like roadway network on site, and increases the viability of retail on the corner of Excelsior Boulevard & Blake Road. With the redevelopment of the site, the remaining site accesses will no longer feed directly into parking lots, they will be urban roadways connecting throughout the site. This change will improve the flow of vehicles entering and exiting the site accesses.

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## PARKING

Per the City of Hopkins code of ordinances sec. 102-365, “A minimum of one and maximum of 1.5 parking spaces per multifamily unit is permitted; one guest space per 15 units is permitted.” The proposed parking ratios for the three multifamily buildings are shown in **Table 5**. The proposed development fits within the city parking guidelines.

**Table 5 – Parking Ratios**

Building	Units	Parking Stalls	Parking Ratio
Site A	215	246	1.15
Site B	250	316	1.26
Site C	298	331	1.11
<b>Total</b>	<b>763</b>	<b>893</b>	<b>1.17</b>

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## PEDESTRIAN, BICYCLE, AND TRANSIT INFRASTRUCTURE

The site is located in a predominately industrial and residential area in the east part of Hopkins. There are primarily industrial businesses on the north side of Excelsior Boulevard and residential on the south side of Excelsior Boulevard. The site is bordered by the Cedar Lake Trail and Canadian Pacific (CP) Railroad on the north side of the site. Excelsior Boulevard provides sidewalks on both sides of the roadway west of Blake Road and has pedestrian crossings at the signals. Blake Road provides trails on both sides of the roadway and provides access to the Cedar Lake Trail which will be a grade separated crossing under Blake Road. Blake Road also has a pedestrian crossing with flashing beacons at the full site access. The proposed site will have sidewalks along all the interior roadways and provide connections to the future SWLRT station and bus stops.

The site is well connected to promote bicycling as a viable mode of transportation as there is access to the regional trail system along the north side of the site and there are on-street bike lanes on Blake Road south of Excelsior Boulevard and trails on Blake Road north of Excelsior Boulevard.

This is a transit-oriented development as it will be located immediately adjacent to a SWLRT station. As previously stated, the adjacent Blake Station is projected to serve 1,300 riders per day in 2040 and the majority of riders are expected to walk to the station. Based on its proximity and density, this development will likely create a significant portion of the projected ridership. With the addition of a bus stop near the SWLRT station it will provide more options to utilize transit.

## CAPACITY ANALYSIS

A capacity analysis was performed to quantify the delay and level of service at the study intersections during the weekday AM and PM peak hours. The capacity analysis was performed using Synchro/SimTraffic.

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is measured in average delay per vehicle. It is expressed in terms of level of service (LOS) which ranges from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 6**. The range of control delay for each rating (as detailed in the HCM) is also shown in **Table 6**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, higher delays are tolerated for the corresponding LOS ratings. For side street stop intersections, the intersection LOS is reported as the worst side street movement.

**Table 6 – Level of Service Information**

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

Traffic models for each scenario were developed using Synchro/SimTraffic, and the delay and queuing were evaluated for each scenario. The scenarios that were analyzed are as follows:

- Existing (2020)
- Opening Year No-Build (2022)
- Opening Year Build (2022)
- Horizon Year No-Build (2030)
- Horizon Year Build (2030)
- Horizon Year Build + Outlot (2030)

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## EXISTING YEAR (2020) CONDITIONS

The traffic volumes shown in **Exhibit 2** in **Appendix A** were used in the Existing Year (2020) analysis. As previously discussed, these volumes were adjusted based on historic growth rates and traffic counts provided by Hennepin County. **Table 7 & 8** show the LOS and delay for the study intersections under Existing Year (2020) conditions during the AM and PM peak hour, respectively.

Based on the analysis, the study intersections are currently operating at a LOS D or better during the AM peak hour. In the PM peak hour, Excelsior Boulevard & Pierce Avenue experiences excessive delays for the northbound turning movements from the school access onto Excelsior Boulevard. With the amount of east/west traffic on Excelsior Boulevard and the side street stop control, this is not unexpected. While the delays are long, the queues are not excessive. There are minor movements during the AM & PM peak hours at the signalized intersections that operate at LOS E. All turn lane queues are within their storage capacity. The SimTraffic reports are provided in **Appendix D**.

**Table 7 – Existing (2020) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	38.9	D	7.7	A	5.1	A	19.3	B
		WB	53.8	D	18.0	B	15.6	B		
		NB	48.8	D	53.6	D	2.2	A		
		SB	51.5	D	63.9	E	1.9	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	9.0	A	3.7	A	3.4	A	29.7	D
		WB	8.1	A	0.4	A	0.2	A		
		NB	20.1	C	29.7	D	4.8	A		
		SB	13.7	B	-	-	6.6	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	1.0	A	-	-	9.3	A
		WB	-	-	1.8	A	1.4	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	9.3	A		
Excelsior Boulevard & Blake Road	Signal	EB	38.7	D	13.3	B	3.2	A	23.1	C
		WB	46.2	D	20.0	B	3.7	A		
		NB	41.6	D	33.7	C	12.5	B		
		SB	40.4	D	34.5	C	23.6	C		
Blake Road & Full Site Access	Side Street Stop	EB	7.4	A	-	-	3.1	A	7.7	A
		WB	7.7	A	5.3	A	3.6	A		
		NB	3.9	A	1.2	A	1.1	A		
		SB	2.7	A	0.4	A	0.2	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	-	-	1.4	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.2	A	-	-		
		SB	-	-	1.6	A	1.4	A		
Blake Road & 2nd Street	Signal	EB	18.0	B	-	-	10.7	B	12.5	B
		WB	-	-	-	-	-	-		
		NB	23.1	C	6.8	A	-	-		
		SB	-	-	13.4	B	5.1	A		

**Table 8 – Existing (2020) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	58.8	E	12.2	B	9.7	A	19.6	B
		WB	69.0	E	27.2	C	26.1	C		
		NB	49.4	D	58.4	E	2.5	A		
		SB	51.1	D	56.7	E	2.8	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	14.7	B	7.0	A	7.2	A	69.9	F
		WB	29.1	D	0.7	A	0.6	A		
		NB	69.9	F	28.6	D	54.3	F		
		SB	14.4	B	-	-	5.8	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	3.5	A	-	-	6.8	A
		WB	-	-	2.1	A	1.6	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	6.8	A		
Excelsior Boulevard & Blake Road	Signal	EB	53.3	D	24.3	C	8.6	A	29.1	C
		WB	53.1	D	20.2	C	6.8	A		
		NB	54.7	D	46.6	D	24.5	C		
		SB	56.6	E	48.1	D	35.7	D		
Blake Road & Full Site Access	Side Street Stop	EB	11.6	B	16.2	C	6.1	A	18.8	C
		WB	18.0	C	18.8	C	8.1	A		
		NB	5.1	A	1.4	A	1.0	A		
		SB	5.6	A	0.6	A	0.2	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	4.2	A	4.2	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.3	A	-	-		
		SB	-	-	1.7	A	1.4	A		
Blake Road & 2nd Street	Signal	EB	21.8	C	-	-	15.5	B	14.4	B
		WB	-	-	-	-	-	-		
		NB	28.3	C	9.5	A	-	-		
		SB	-	-	16.6	B	8.2	A		

**OPENING YEAR NO-BUILD (2022) CONDITIONS**

A capacity analysis was performed for Opening Year No-Build (2022) conditions in order to develop baseline operating conditions for the opening year. The analysis was performed using the existing intersection geometry except for the southbound Pierce Avenue approach at Excelsior Boulevard which is currently a single lane approach but with the addition of the Park & Ride and upgrading Pierce Avenue a southbound right turn lane will be added. The existing signal timing information was used for the study intersections. The traffic volumes are shown in **Exhibit 3** in **Appendix A**.

The results of the analysis are provided in **Tables 9 & 10** for the weekday AM and PM peak hours. Based on the Opening Year No-Build (2022) capacity analysis, the study intersections are expected to operate at

a LOS C or better during the AM peak hour. During the PM peak hour, Excelsior Boulevard & Blake Road has excessive side street delays, similar to the existing conditions. Again, the queues are not excessive, and it is not uncommon for a side street stop intersection to have longer delays. All turn lane queues are within their storage capacity. The side street stop delay at Excelsior Boulevard & Pierce Avenue is slightly better than the existing condition in the AM peak hour. This is due to the low volumes (less than 5 peak hour trips) for the side street movement and the variability in the simulations. In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue, The SimTraffic reports are provided in **Appendix D**.

**Table 9 – Opening Year No-Build (2022) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	39.0	D	7.3	A	4.2	A	19.6	B
		WB	56.1	E	19.2	B	19.1	B		
		NB	43.9	D	59.4	E	2.1	A		
		SB	40.9	D	65.6	E	2.0	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	10.9	B	3.5	A	4.0	A	23.0	C
		WB	7.9	A	0.4	A	0.2	A		
		NB	18.5	C	23.0	C	6.3	A		
		SB	19.2	C	-	-	6.4	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	0.9	A	-	-	3.5	A
		WB	-	-	1.8	A	1.5	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	3.5	A		
Excelsior Boulevard & Blake Road	Signal	EB	41.8	D	14.0	B	3.2	A	23.8	C
		WB	49.9	D	21.0	C	4.2	A		
		NB	40.8	D	33.3	C	11.5	B		
		SB	41.5	D	35.7	D	24.0	C		
Blake Road & Full Site Access	Side Street Stop	EB	9.2	A	-	-	4.0	A	9.5	A
		WB	9.5	A	7.9	A	3.8	A		
		NB	3.6	A	1.3	A	1.2	A		
		SB	3.4	A	0.4	A	0.2	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	3.5	A	3.5	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.2	A	-	-		
		SB	-	-	1.6	A	1.5	A		
Blake Road & 2nd Street	Signal	EB	18.4	B	-	-	11.7	B	13.2	B
		WB	-	-	-	-	-	-		
		NB	24.7	C	6.9	A	-	-		
		SB	-	-	14.5	B	6.2	A		

**Table 10 – Opening Year No-Build (2022) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	53.2	D	14.9	B	8.3	A	20.5	C
		WB	64.2	E	27.5	C	27.3	C		
		NB	48.2	D	56.6	E	2.7	A		
		SB	53.3	D	59.1	E	2.9	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	16.4	C	8.3	A	11.1	B	100+	F
		WB	31.3	D	0.7	A	0.5	A		
		NB	100+	F	-	-	49.4	E		
		SB	91.5	F	-	-	8.9	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	4.8	A	-	-	7.0	A
		WB	-	-	2.1	A	1.4	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	7.0	A		
Excelsior Boulevard & Blake Road	Signal	EB	54.8	D	25.7	C	9.4	A	30.1	C
		WB	57.0	E	21.4	C	6.9	A		
		NB	56.6	E	42.8	D	26.1	C		
		SB	57.8	E	48.1	D	35.5	D		
Blake Road & Full Site Access	Side Street Stop	EB	14.3	B	22.7	C	6.4	A	22.7	C
		WB	18.2	C	18.1	C	7.4	A		
		NB	4.1	A	1.4	A	1.2	A		
		SB	5.8	A	0.6	A	0.3	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	3.7	A	3.7	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.3	A	-	-		
		SB	-	-	1.7	A	1.4	A		
Blake Road & 2nd Street	Signal	EB	19.5	B	-	-	13.5	B	14.6	B
		WB	-	-	-	-	-	-		
		NB	31.3	C	10.6	B	-	-		
		SB	-	-	16.7	B	9.0	A		

**OPENING YEAR BUILD (2022) CONDITIONS**

Opening Year Build (2022) conditions were analyzed to determine any traffic impacts from the addition of the site traffic. Opening Year Build (2022) turning movement volumes were developed by adding the site trips to the Opening Year No-Build (2022) turning movement volumes in **Exhibit 3** in **Appendix A**. The Opening Year Build (2022) turning movement volumes are shown in **Exhibit 10** in **Appendix A**. It should be noted that in the Opening Year Build (2022) conditions the Site A traffic was added to the existing site trips at the accesses, no trips were removed for the analysis.

It was assumed that site access would remain the same as the Opening Year No-Build condition and that a westbound right turn lane at Excelsior Boulevard & Pierce Avenue would be installed with Site A.

The results of the analysis are provided in **Tables 11 & 12** for the weekday AM and PM peak hours. Based on the Opening Year Build (2022) capacity analysis, the study intersections are anticipated to operate at LOS C or better in the AM & PM peak hours except for Excelsior Boulevard & Pierce Avenue which is anticipated to operate at LOS E in the AM peak hour and LOS F in the PM peak hour. With the excessive southbound delays at Excelsior Boulevard & Peirce Avenue, vehicles exiting the site may utilize different site accesses during the peak hours to minimize delay. This intersection should continue to be monitored as it may require mitigation. All turn lane queues are within their storage capacity. In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue. There are no additional geometric changes required in the study area as a result of the development. The SimTraffic reports are provided in **Appendix D**.

**Table 11 – Opening Year Build (2022) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	40.7	D	7.7	A	4.5	A	20.1	C
		WB	50.9	D	19.3	B	16.4	B		
		NB	47.3	D	55.5	E	2.3	A		
		SB	44.2	D	54.7	D	1.9	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	13.7	B	3.7	A	4.4	A	41.3	E
		WB	10.1	B	0.5	A	0.3	A		
		NB	32.1	D	41.3	E	9.6	A		
		SB	30.3	D	-	-	6.4	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	1.0	A	-	-	4.8	A
		WB	-	-	1.8	A	1.4	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	4.8	A		
Excelsior Boulevard & Blake Road	Signal	EB	37.9	D	15.0	B	3.6	A	23.8	C
		WB	43.9	D	20.9	C	4.3	A		
		NB	39.8	D	33.9	C	13.4	B		
		SB	39.6	D	35.8	D	22.2	C		
Blake Road & Full Site Access	Side Street Stop	EB	8.1	A	-	-	4.4	A	12.6	B
		WB	10.4	B	12.6	B	4.1	A		
		NB	4.4	A	1.3	A	1.1	A		
		SB	3.2	A	0.4	A	0.3	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	3.5	A	3.5	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.2	A	-	-		
		SB	-	-	1.6	A	1.3	A		
Blake Road & 2nd Street	Signal	EB	17.8	B	-	-	11.5	B	12.5	B
		WB	-	-	-	-	-	-		
		NB	24.9	C	6.8	A	-	-		
		SB	-	-	13.2	B	5.7	A		

**Table 12 – Opening Year Build (2022) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/ Jackson Avenue	Signal	EB	55.3	E	15.3	B	10.5	B	20.9	C
		WB	62.6	E	27.9	C	26.7	C		
		NB	50.1	D	61.0	E	2.8	A		
		SB	49.6	D	65.9	E	2.9	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	18.3	C	8.1	A	7.0	A	100+	F
		WB	32.9	D	0.8	A	0.7	A		
		NB	100+	F	-	-	100+	F		
		SB	100+	F	-	-	46.0	E		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	5.1	A	-	-	4.0	A
		WB	-	-	2.1	A	1.4	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	6.3	A		
Excelsior Boulevard & Blake Road	Signal	EB	54.9	D	26.3	C	9.5	A	30.2	C
		WB	56.4	E	21.1	C	7.5	A		
		NB	56.3	E	45.8	D	25.9	C		
		SB	55.3	E	47.2	D	35.7	D		
Blake Road & Full Site Access	Side Street Stop	EB	16.3	C	22.6	C	7.1	A	21.9	C
		WB	21.5	C	21.9	C	7.6	A		
		NB	4.6	A	1.5	A	1.3	A		
		SB	5.2	A	0.6	A	0.3	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	3.0	A	3.0	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.3	A	-	-		
		SB	-	-	1.8	A	1.8	A		
Blake Road & 2nd Street	Signal	EB	20.1	C	-	-	15.2	B	14.3	B
		WB	-	-	-	-	-	-		
		NB	31.3	C	9.5	A	-	-		
		SB	-	-	16.9	B	8.8	A		

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

### HORIZON YEAR NO-BUILD (2030) CONDITIONS

A capacity analysis was performed for Horizon Year No-Build (2030) conditions in order to develop baseline operating conditions for the Horizon year. The analysis was performed using the same geometry assumed in the 2022 scenarios. In the Horizon year it was assumed that the 17-acre, 325 Blake Road site would be developed so that development is included in the background traffic as previously discussed. Excelsior Boulevard is a coordinated signal system so individual intersections could not be optimized without taking into account downstream intersections outside of the study area, therefore, the cycle lengths were not changed, but the splits at the signals were optimized. The traffic volumes are shown in **Exhibit 4** in **Appendix A**.

The results of the analysis are provided in **Tables 13 & 14** for the weekday AM and PM peak hours. Based on the Horizon Year No-Build (2030) capacity analysis, the study intersections are expected to operate at a LOS D or better during the AM & PM peak hours except for Excelsior Boulevard & Pierce Avenue which has excessive side street delays, similar to the Opening Year Build conditions. Queues for the southbound approach at Excelsior Boulevard & Pierce Avenue are acceptable but the delays for the vehicles attempting to make southbound left turns would likely cause vehicles to use a different access. Mitigation at this access will be required by the Horizon Year (2030), with or without the development. All turn lane queues are within their storage capacity. In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue. The SimTraffic reports are provided in **Appendix D**.

**Table 13 – Horizon Year No Build (2030) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	41.7	D	8.4	A	4.6	A	20.8	C
		WB	55.7	E	20.3	C	19.5	B		
		NB	49.1	D	50.5	D	2.2	A		
		SB	48.3	D	45.8	D	2.1	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	13.7	B	4.1	A	4.2	A	31.7	D
		WB	8.0	A	0.5	A	0.3	A		
		NB	22.5	C	31.7	D	6.0	A		
		SB	20.1	C	-	-	5.5	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	1.1	A	-	-	5.3	A
		WB	-	-	1.9	A	1.5	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	5.3	A		
Excelsior Boulevard & Blake Road	Signal	EB	35.8	D	15.3	B	3.6	A	25.2	C
		WB	46.6	D	22.7	C	4.3	A		
		NB	40.9	D	36.2	D	16.7	B		
		SB	38.8	D	37.8	D	25.3	C		
Blake Road & Full Site Access	Side Street Stop	EB	9.4	A	-	-	4.5	A	10.6	B
		WB	10.2	B	10.6	B	4.2	A		
		NB	5.1	A	1.4	A	1.1	A		
		SB	3.1	A	0.4	A	0.3	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	3.7	A	3.7	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.2	A	-	-		
		SB	-	-	1.6	A	1.3	A		
Blake Road & 2nd Street	Signal	EB	20.7	C	20.4	C	14.7	B	16.4	B
		WB	20.4	C	22.3	C	5.1	A		
		NB	30.3	C	11.4	B	6.1	A		
		SB	37.4	D	17.1	B	8.5	A		

**Table 14 – Horizon Year No Build (2030) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	59.7	E	15.8	B	16.0	B	22.1	C
		WB	70.1	E	29.6	C	30.9	C		
		NB	52.4	D	61.6	E	2.9	A		
		SB	51.6	D	61.3	E	3.1	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	18.3	C	8.7	A	9.0	A	100+	F
		WB	34.9	D	0.8	A	0.3	A		
		NB	100+	F	100+	F	78.9	F		
		SB	9.0	A	-	-	7.6	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	5.8	A	-	-	7.4	A
		WB	-	-	2.1	A	1.5	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	7.4	A		
Excelsior Boulevard & Blake Road	Signal	EB	59.2	E	27.0	C	10.4	B	31.7	C
		WB	56.0	E	20.8	C	8.7	A		
		NB	56.9	E	46.2	D	29.3	C		
		SB	59.2	E	51.0	D	40.8	D		
Blake Road & Full Site Access	Side Street Stop	EB	17.2	C	22.2	C	8.5	A	26.8	D
		WB	26.8	D	23.9	C	12.5	B		
		NB	4.9	A	1.6	A	1.4	A		
		SB	6.9	A	0.7	A	0.2	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	4.0	A	0.9	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.4	A	-	-		
		SB	-	-	1.6	A	1.4	A		
Blake Road & 2nd Street	Signal	EB	24.3	C	25.1	C	20.4	C	20.4	C
		WB	26.3	C	28.1	C	7.5	A		
		NB	41.4	D	17.7	B	14.4	B		
		SB	42.1	D	19.8	B	10.7	B		

**HORIZON YEAR BUILD (2030) CONDITIONS**

Horizon Year Build (2030) conditions were analyzed to determine any traffic impacts from the addition of the site traffic. Horizon Year Build (2030) turning movement volumes were developed by adding the site trips to the Horizon Year No-Build (2030) turning movement volumes in **Exhibit 4** in **Appendix A**. The Horizon Year Build (2030) turning movement volumes are shown in **Exhibit 11** in **Appendix A**. It should be noted that in the Horizon Build (2030) conditions the existing site traffic was removed from the site accesses.

The results of the analysis are provided in **Tables 15 & 16** for the weekday AM and PM peak hours. Based on the Horizon Year Build (2030) capacity analysis, the study intersections are anticipated to operate at LOS D or better in the AM peak hour. In the PM peak hour, the study intersections are expected to operate at LOS C or better, except for Excelsior Boulevard & Pierce Avenue. Queues for the southbound approach at Excelsior Boulevard & Pierce Avenue are acceptable but the delays for the vehicles attempting to make southbound left turns would likely cause vehicles to use a different access. Traffic control changes at this access will likely be required by the 2030 analysis year, with or without the development. All turn lane queues are within their storage capacity. In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue. There are no geometric changes required in the study area as a result of the development. The SimTraffic reports are provided in **Appendix D**.

**Table 15 – Horizon Year Build (2030) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	40.6	D	8.6	A	4.6	A	21.1	C
		WB	55.2	E	22.7	C	23.1	C		
		NB	42.5	D	50.2	D	2.3	A		
		SB	42.9	D	57.0	E	2.1	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	12.2	B	4.1	A	3.6	A	31.5	D
		WB	8.8	A	0.5	A	0.3	A		
		NB	23.4	C	21.0	C	7.2	A		
		SB	31.5	D	-	-	7.6	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	1.2	A	-	-	5.6	A
		WB	-	-	1.9	A	1.4	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	5.6	A		
Excelsior Boulevard & Blake Road	Signal	EB	35.6	D	15.4	B	3.9	A	24.7	C
		WB	46.0	D	23.2	C	4.6	A		
		NB	40.4	D	32.2	C	14.6	B		
		SB	38.2	D	34.5	C	27.3	C		
Blake Road & Full Site Access	Side Street Stop	EB	12.3	B	-	-	6.2	A	11.1	B
		WB	11.1	B	4.0	A	5.2	A		
		NB	1.3	A	0.8	A	4.0	A		
		SB	0.5	A	0.3	A	1.8	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	4.5	A	4.5	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.3	A	-	-		
		SB	-	-	1.8	A	1.4	A		
Blake Road & 2nd Street	Signal	EB	20.4	C	20.3	C	15.1	B	16.0	B
		WB	19.8	B	18.6	B	4.9	A		
		NB	28.4	C	11.0	B	5.9	A		
		SB	32.2	C	17.1	B	8.7	A		

**Table 16 – Horizon Year Build (2030) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/ Jackson Avenue	Signal	EB	56.6	E	16.3	B	12.0	B	21.6	C
		WB	59.6	E	28.4	C	26.4	C		
		NB	52.8	D	56.1	E	2.5	A		
		SB	53.0	D	66.1	E	3.0	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	19.7	C	8.7	A	10.3	B	100+	F
		WB	28.5	D	0.8	A	0.7	A		
		NB	100+	F	-	-	73.6	F		
		SB	100+	F	-	-	45.2	E		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	6.0	A	-	-	6.8	A
		WB	-	-	2.1	A	1.8	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	6.8	A		
Excelsior Boulevard & Blake Road	Signal	EB	58.8	E	26.7	C	10.8	B	31.8	C
		WB	56.7	E	21.5	C	9.4	A		
		NB	56.4	E	46.0	D	27.5	C		
		SB	57.5	E	53.5	D	42.5	D		
Blake Road & Full Site Access	Side Street Stop	EB	22.7	C	-	-	9.8	A	30.6	D
		WB	30.6	D	-	-	11.1	B		
		NB	6.4	A	1.5	A	1.3	A		
		SB	6.9	A	0.7	A	0.4	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	4.3	A	4.3	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.4	A	-	-		
		SB	-	-	1.8	A	1.7	A		
Blake Road & 2nd Street	Signal	EB	26.3	C	25.0	C	20.6	C	20.7	C
		WB	26.7	C	25.1	C	6.9	A		
		NB	42.0	D	16.9	B	12.2	B		
		SB	48.3	D	20.9	C	12.8	B		

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

### HORIZON YEAR BUILD + OUTLOT (2030) CONDITIONS

Horizon Year Build + Outlot (2030) conditions were analyzed to determine any traffic impacts from the addition of the final Outlot. Horizon Year Build + Outlot (2030) turning movement volumes were developed by adding the outlot trips to the Horizon Year Build (2030) turning movement volumes in **Exhibit 11** in **Appendix A**. The Horizon Year Build + Outlot (2030) turning movement volumes are shown in **Exhibit 12** in **Appendix A**. It should be noted that in the Horizon Build (2030) conditions the existing site traffic was removed from the site accesses.

The results of the analysis are provided in **Tables 17 & 18** for the weekday AM and PM peak hours. Based on the Horizon Year Build + Outlot (2030) capacity analysis, the study intersections are anticipated to operate at LOS D or better in the AM & PM peak hours, except for Excelsior Boulevard & Pierce Avenue. In the PM peak hour, Excelsior Boulevard & Pierce Avenue will continue to have operational delays similar to the Horizon Year Build (2030) scenarios. There will be no additional mitigation required as a result of the outlot being developed. The SimTraffic reports are provided in **Appendix D**.

**Table 17 – Horizon Year Build + Outlot (2030) AM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/Jackson Avenue	Signal	EB	40.4	D	8.1	A	4.4	A	21.0	C
		WB	56.7	E	22.8	C	23.3	C		
		NB	43.8	D	52.4	D	2.3	A		
		SB	48.3	D	49.3	D	2.1	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	14.9	B	4.0	A	3.3	A	43.3	E
		WB	7.3	A	0.5	A	0.4	A		
		NB	25.5	D	43.3	E	8.1	A		
		SB	30.1	D	-	-	8.4	A		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	1.3	A	-	-	6.2	A
		WB	-	-	2.0	A	1.3	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	6.2	A		
Excelsior Boulevard & Blake Road	Signal	EB	36.2	D	15.8	B	4.0	A	25.7	C
		WB	47.8	D	24.6	C	4.7	A		
		NB	40.7	D	34.5	C	14.5	B		
		SB	39.2	D	37.0	D	29.0	C		
Blake Road & Full Site Access	Side Street Stop	EB	13.4	B	-	-	6.6	A	10.1	B
		WB	10.1	B	-	-	4.2	A		
		NB	6.9	A	1.3	A	1.4	A		
		SB	3.6	A	0.6	A	0.2	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	4.9	A	4.9	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.3	A	-	-		
		SB	-	-	1.7	A	1.5	A		
Blake Road & 2nd Street	Signal	EB	20.6	C	19.9	B	15.5	B	16.5	B
		WB	22.0	C	22.4	C	4.8	A		
		NB	30.2	C	11.5	B	5.8	A		
		SB	40.5	D	17.0	B	8.1	A		

**Table 18 – Horizon Year Build + Outlot (2030) PM Peak Hour Intersection Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
Excelsior Boulevard & Milwaukee Street/ Jackson Avenue	Signal	EB	59.5	E	17.5	B	10.3	B	22.9	C
		WB	71.9	E	29.5	C	29.4	C		
		NB	53.7	D	53.1	D	2.7	A		
		SB	51.1	D	56.0	E	3.0	A		
Excelsior Boulevard & Pierce Avenue	Side Street Stop	EB	17.6	C	8.9	A	8.1	A	100+	F
		WB	29.7	D	0.8	A	0.6	A		
		NB	100+	F	-	-	85.8	F		
		SB	100+	F	-	-	23.1	C		
Excelsior Boulevard & RIRO	Side Street Stop	EB	-	-	6.2	A	-	-	9.5	A
		WB	-	-	2.2	A	1.7	A		
		NB	-	-	-	-	-	-		
		SB	-	-	-	-	9.5	A		
Excelsior Boulevard & Blake Road	Signal	EB	57.1	E	26.7	C	10.2	B	32.4	C
		WB	55.4	E	21.7	C	9.2	A		
		NB	51.8	D	47.0	D	29.3	C		
		SB	62.3	E	53.3	D	46.0	D		
Blake Road & Full Site Access	Side Street Stop	EB	18.8	C	-	-	8.6	A	29.5	D
		WB	29.5	D	-	-	11.4	B		
		NB	5.8	A	1.5	A	1.4	A		
		SB	6.4	A	0.9	A	0.3	A		
Blake Road & RIRO	Side Street Stop	EB	-	-	-	-	5.2	A	5.2	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.4	A	-	-		
		SB	-	-	2.0	A	1.7	A		
Blake Road & 2nd Street	Signal	EB	25.9	C	26.4	C	20.5	C	20.3	C
		WB	25.4	C	28.8	C	8.1	A		
		NB	39.8	D	17.2	B	16.3	B		
		SB	47.4	D	19.3	B	11.3	B		

Note: delays in excess of 100 seconds per vehicle are reported as "100+"

## MITIGATION ANALYSIS

Based on the capacity analysis results, the side street stop-controlled movements at Excelsior Boulevard & Pierce Avenue are expected to operate at LOS F in every PM analysis scenario. While queuing is not an issue for the side street movements, vehicles may choose to accept smaller gaps due to the increased delay. This could potentially become a safety concern. In order to mitigate the side street delays, this intersection was also analyzed as a signal for the Horizon Year (2030) Build conditions. While the intersection may or may not meet warrants by 2030, the intersection should be monitored and reevaluated as the development occurs and background traffic increases in the area.

The intersection geometry would include dedicated southbound left turn lane, and a dedicated westbound right turn lane. It was assumed that the eastbound and westbound left turns would operate as protected in the peak hours but would be flashing yellow arrows off peak, and the northbound and southbound movements would be permissive.

**Table 19** shows the SimTraffic results for the mitigated Excelsior Boulevard & Pierce Avenue intersection in the AM & PM peak hours. Based on the capacity analysis results, the mitigated intersection is anticipated to operate at LOS C in both the AM & PM peak hours. All turn lane queues are anticipated to be within their storage capacity at the intersection. In the PM peak hour, eastbound queues on Excelsior Boulevard may extend from Blake Road to Pierce Avenue. With proper signal coordination this is not anticipated to be a major issue. Installing a signal could provide benefits to the development traffic as well as the transit lines that will use Pierce Avenue to access the bus stops near the Blake LRT station.

**Table 19 – Horizon Year Build (2030) Signal Mitigation Analysis**

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right		Delay (sec/veh)	LOS
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
<b>AM Peak Hour</b>										
Excelsior Boulevard & Pierce Avenue	Signal	EB	60.1	E	25.8	C	20.6	C	25.8	C
		WB	48.4	D	25.8	C	16.1	B		
		NB	10.9	B	17.5	B	8.3	A		
		SB	16.5	B	-	-	8.9	A		
<b>PM Peak Hour</b>										
Excelsior Boulevard & Pierce Avenue	Signal	EB	72.4	E	37.0	D	41.9	D	31.3	C
		WB	51.9	D	19.8	B	12.8	B		
		NB	34.8	C	-	-	29.5	C		
		SB	30.1	C	-	-	9.9	A		

## CONCLUSIONS AND RECOMMENDATIONS

ESG Architecture & Design and Trilogy Real Estate Group are proposing a multiphase development that includes, a 215-unit multifamily housing building, a 250-unit multifamily housing building, a 298-unit multifamily housing building, and the potential for an additional outlot development. It is anticipated that there will be a total of 19,000 sq. ft. of retail between the three buildings, however, the exact amount in each building is not known at this time and will be evaluated as each building is developed. The total development will include around 763 units of multifamily and 19,000 square feet of retail on the northwest corner of Excelsior Boulevard (CSAH 3) & Blake Road (CSAH 20) in Hopkins, MN. The exact unit count may vary slightly since the 250-unit apartment building and the 298-unit apartment building would not be built until 2026 and 2030, respectively.

In the Opening Year, Site A is anticipated to generate an additional 73 new trips during the AM peak hour (19 entering, 54 exiting) and 90 new trips during the PM peak hour (55 entering, 35 exiting). In the Horizon Year, Sites A, B, and C are anticipated to generate an additional 256 new trips during the AM peak hour (68 entering, 188 exiting) and 311 new trips during the PM peak hour (198 entering, 113 exiting). The existing site generates 85 AM peak hour trips and 316 PM peak hour trips. The proposed development will generate significantly more trips in the AM peak hour than the existing site, but the PM peak hour trips will be approximately the same.

There are currently five site accesses, and the proposed development would close the Hill Street RIRO access on Blake Road. The northern RIRO on Blake Road will be relocated approximately 175 feet north of the existing access as part of the SWLRT station and Park & Ride construction. The other site access will remain the same as the existing site. The existing site accesses on Excelsior Boulevard are pivotal to the site. The RIRO on Excelsior Boulevard provides connectivity, it helps maintain a grid like roadway network on site, and increases the viability of retail on the corner of Excelsior Boulevard & Blake Road. With the redevelopment of the site, the remaining site accesses will no longer feed directly into parking lots, they will be urban roadways connecting throughout the site. This change will improve the flow of vehicles entering and exiting the site accesses.

A capacity analysis was performed for Existing (2020), Opening Year No-Build (2022), Opening Year Build (2022), Horizon Year (2030) No-Build, Horizon Year (2030) Build, and the Horizon Year (2030) Build + Outlot.

The operations at the study intersections in the Existing (2020) and Opening Year No-Build (2022) operate at LOS D or better in both the AM and PM peak hours except for Excelsior Boulevard & Pierce Avenue, which has significant delays on the side streets during the PM peak hour scenarios. However, there are not excessive side street queues.

In the Opening Year Build (2022) scenarios, the study intersections are anticipated to operate at LOS C or better in the AM & PM peak hours except for Excelsior Boulevard & Pierce Avenue which is anticipated to operate at LOS E in the AM peak hour and LOS F in the PM peak hour. With the excessive southbound delays at Excelsior Boulevard & Pierce Avenue, vehicles exiting the site may utilize different site accesses during the peak hours to minimize delay. The intersection should continue to be monitored as it may require mitigation. All other site accesses, including the RIRO site access on Excelsior Boulevard are anticipated to operate acceptably in the Opening Year Build (2022) scenarios. **It is assumed that a westbound right turn lane at Excelsior Boulevard & Pierce Avenue will be installed as part of Site As development.**

In the Horizon Year No-Build (2030) scenarios, the study intersections operate at LOS D or better in both the AM and PM peak hours except for Excelsior Boulevard & Pierce Avenue, which has significant delays on the side streets during the PM peak hour scenarios. **Excelsior Boulevard & Pierce Avenue will require mitigation as the delays are unacceptable without the proposed redevelopment.**

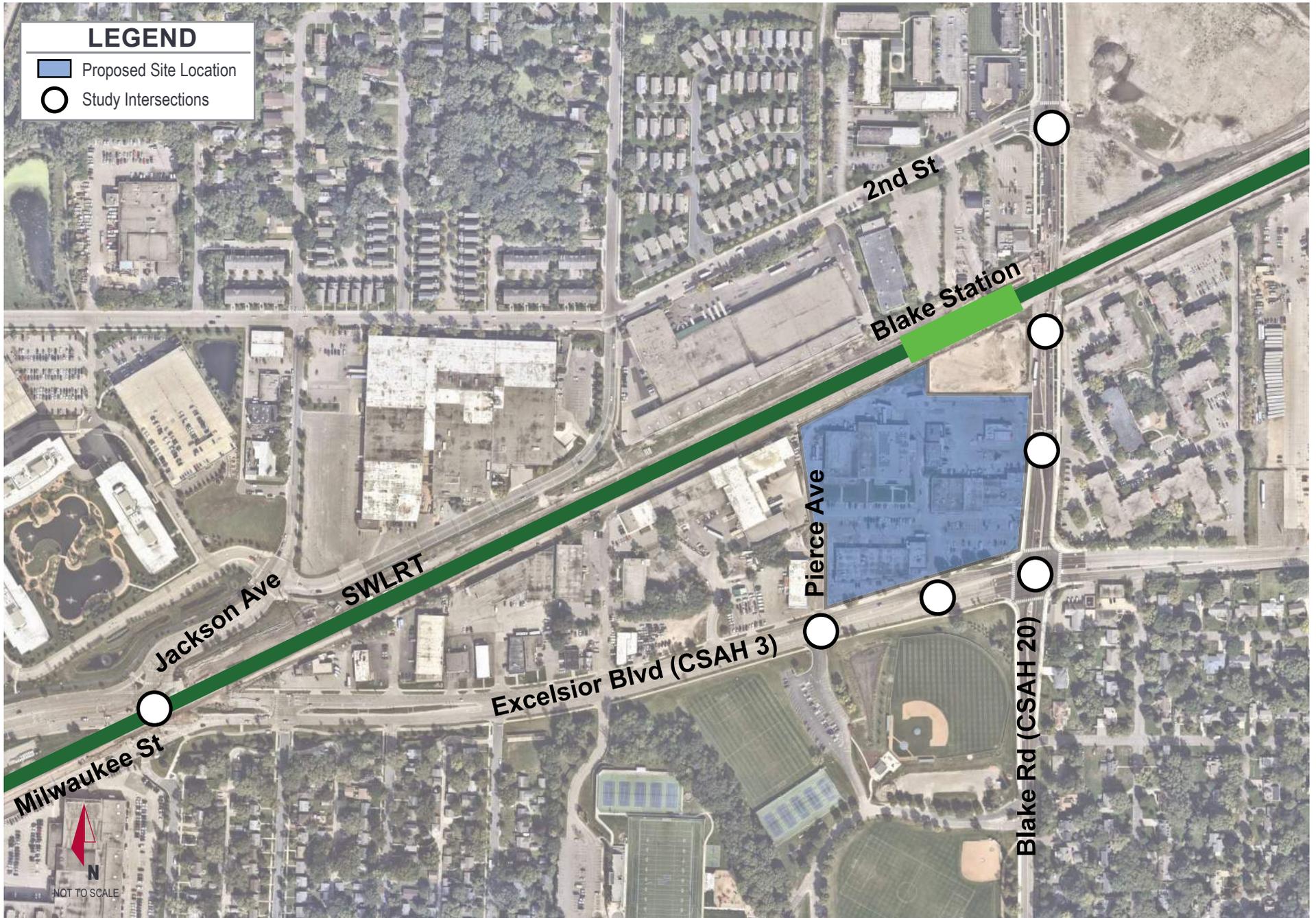
In the Horizon Year Build (2030) scenarios, the study intersections were analyzed without any mitigation as the projected trip generation for the site is similar to the existing site trip generation but with a different distribution pattern. The study intersections operate at LOS D or better in both the AM and PM peak hours except for Excelsior Boulevard & Pierce Avenue, which is projected to have significant delays on the side streets during the PM peak hour scenarios similar to the Horizon Year No-Build (2030) scenarios. All other site accesses, including the RIRO on Excelsior Boulevard are anticipated to operate acceptably in the Horizon Year Build (2030) scenarios. No change in access is required as a result of the full development build out.

Excelsior Boulevard & Pierce Avenue was then analyzed as a signalized intersection in the Horizon Year Build (2030) scenarios. The mitigated intersection is anticipated to operate at LOS C in both the AM & PM peak hours. All turn lane queues are anticipated to be within their storage capacity at the intersection. **It is recommended that a signal be installed at Excelsior Boulevard & Pierce Avenue by 2030.** Installing a signal could provide benefits to the development traffic as well as the transit lines that will use Pierce Avenue to access the bus stops near the Blake LRT station. However, the intersection should be monitored to determine if/when a signal is warranted.

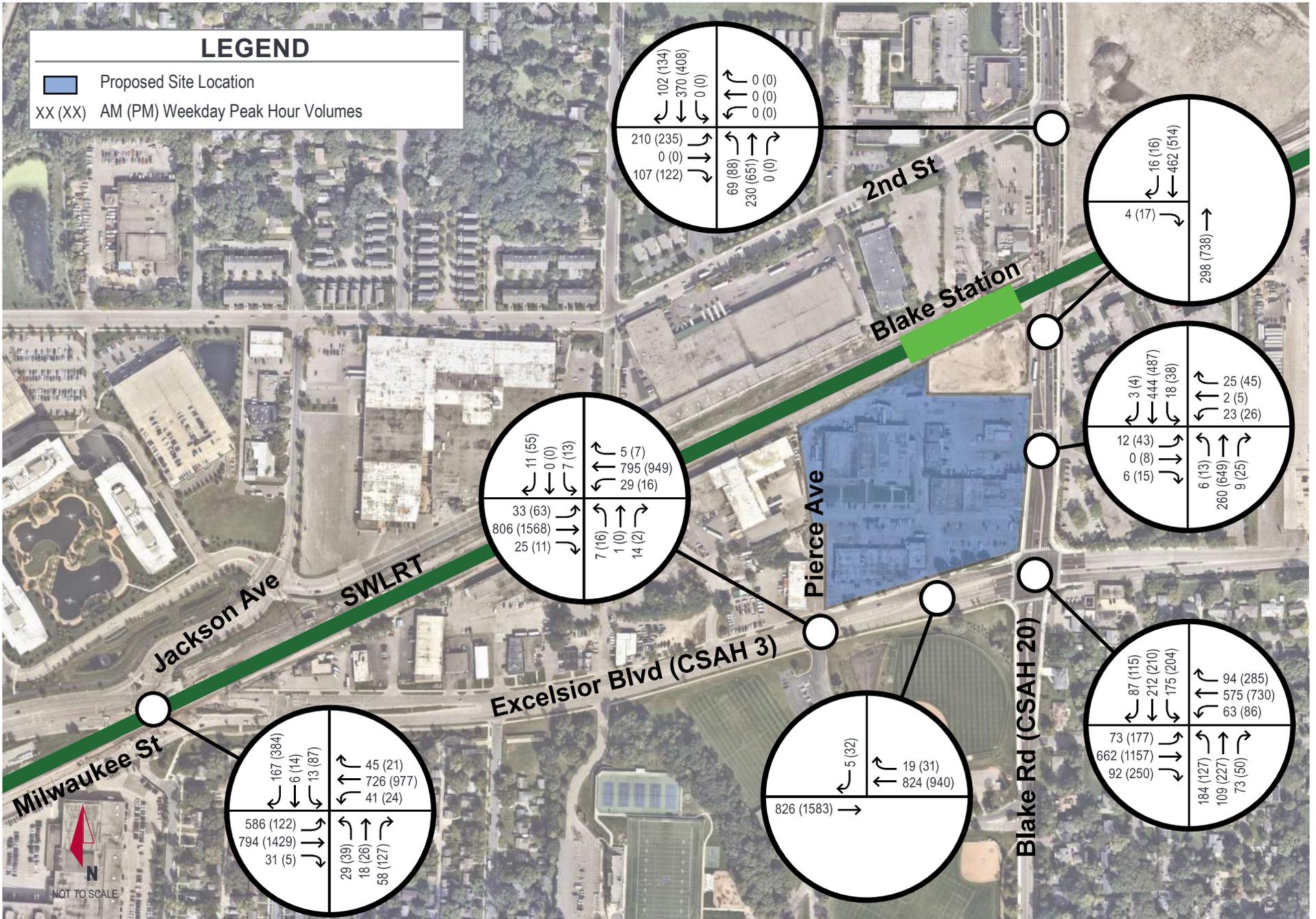
The development of the outlot on the site is not anticipated to have a significant impact on traffic operations in the study area.

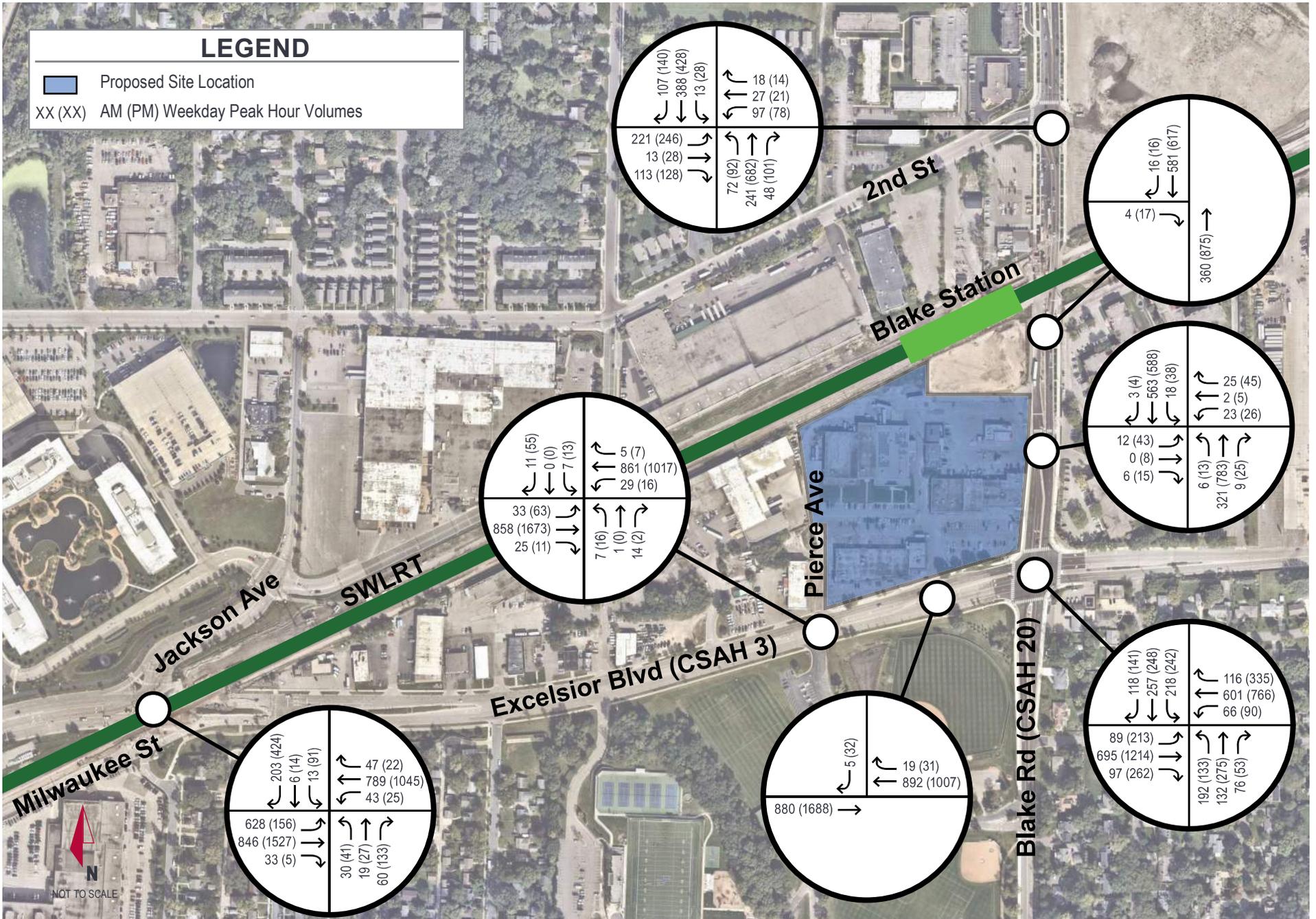
## APPENDIX

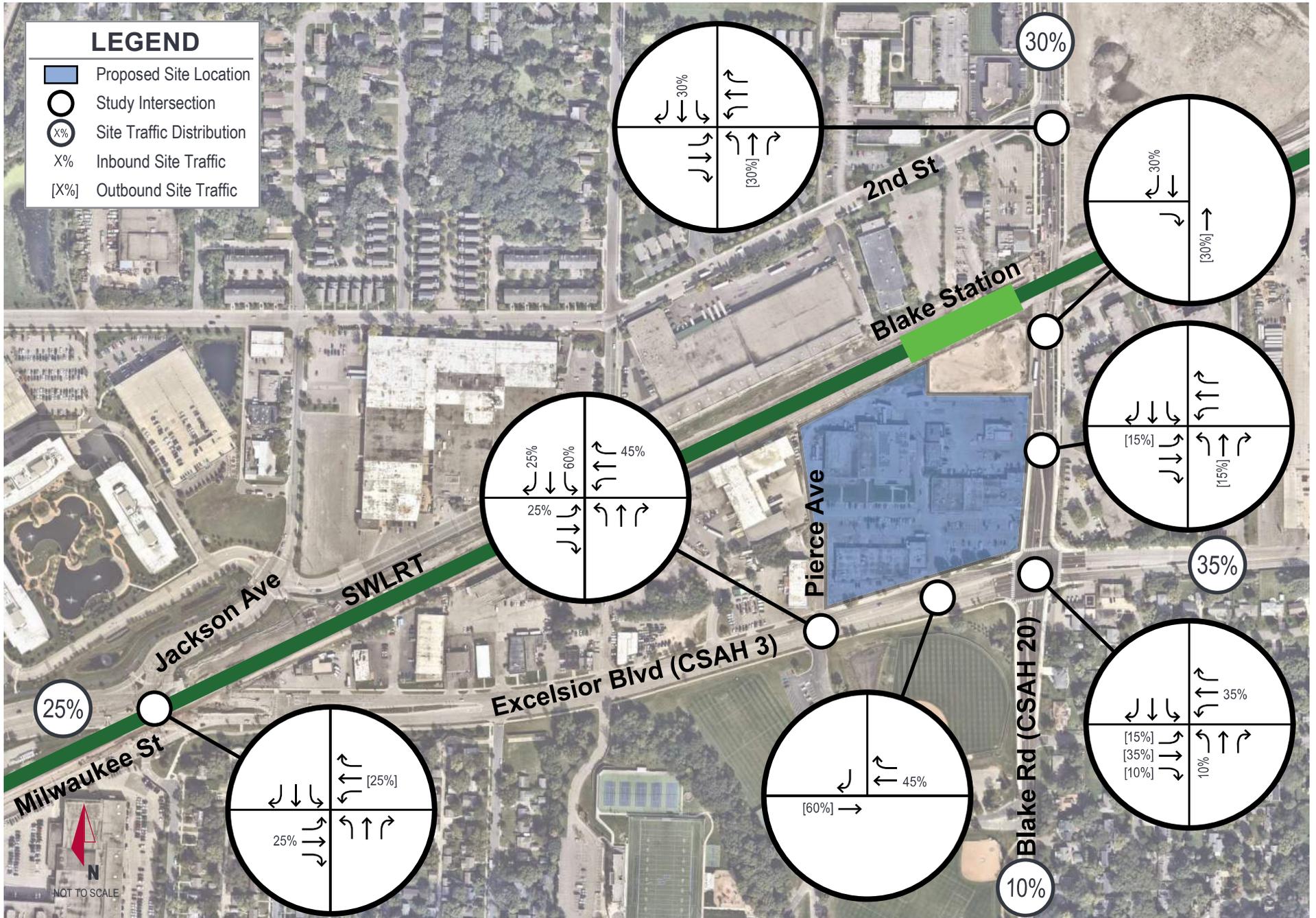
- A. Exhibits**
- B. Site Plan**
- C. Raw Turning Movement Counts**
- D. SimTraffic Analysis Results**

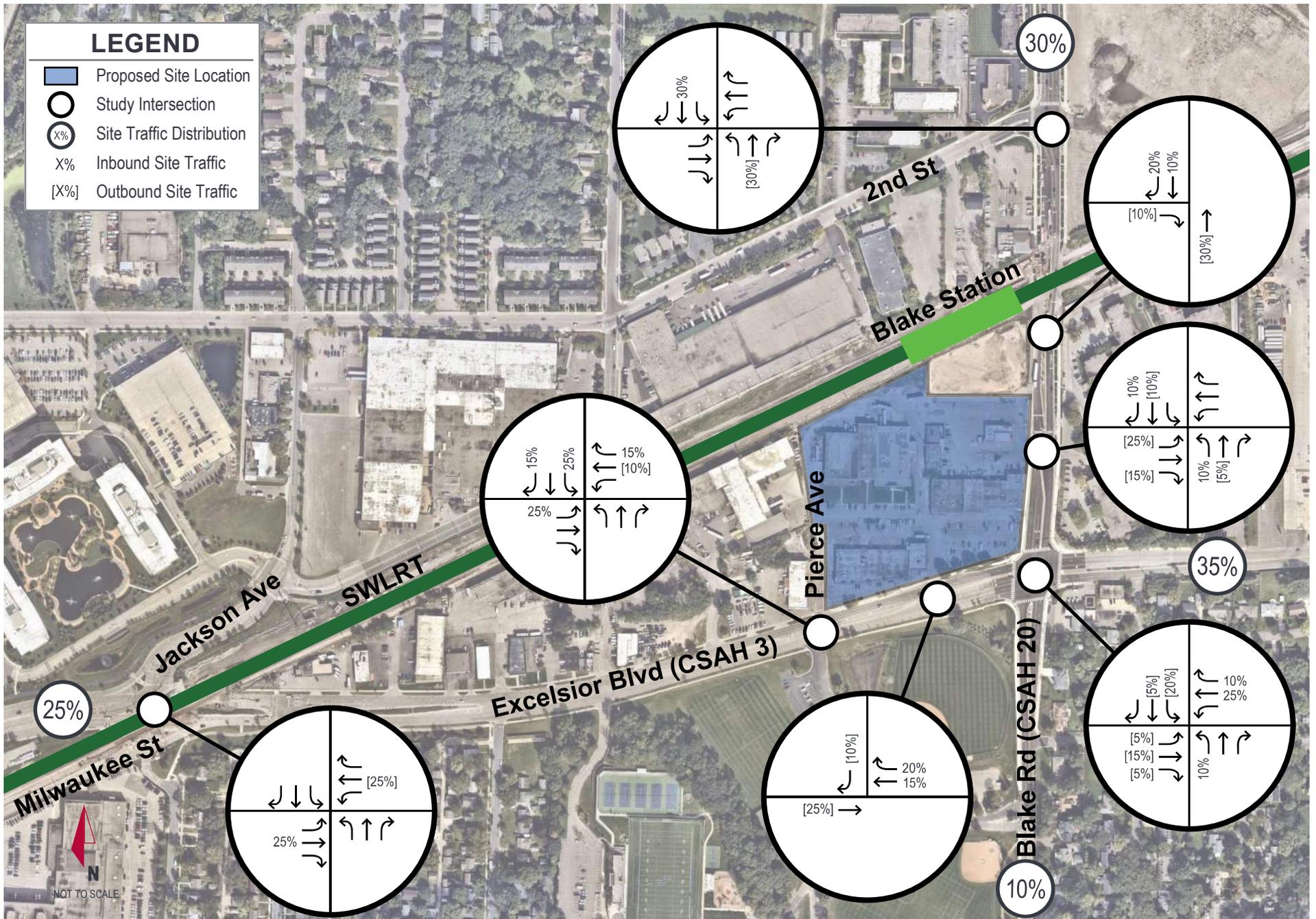


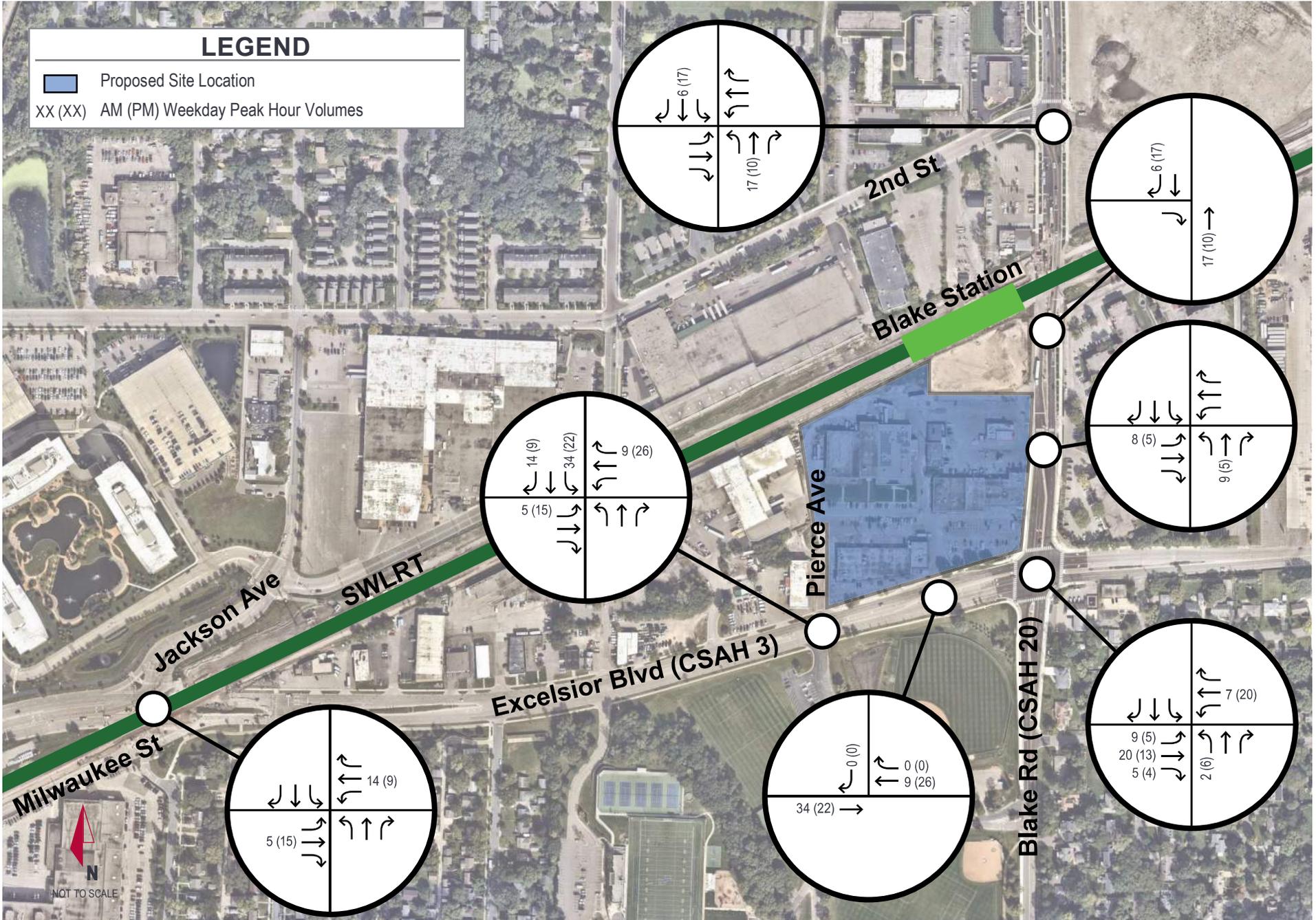


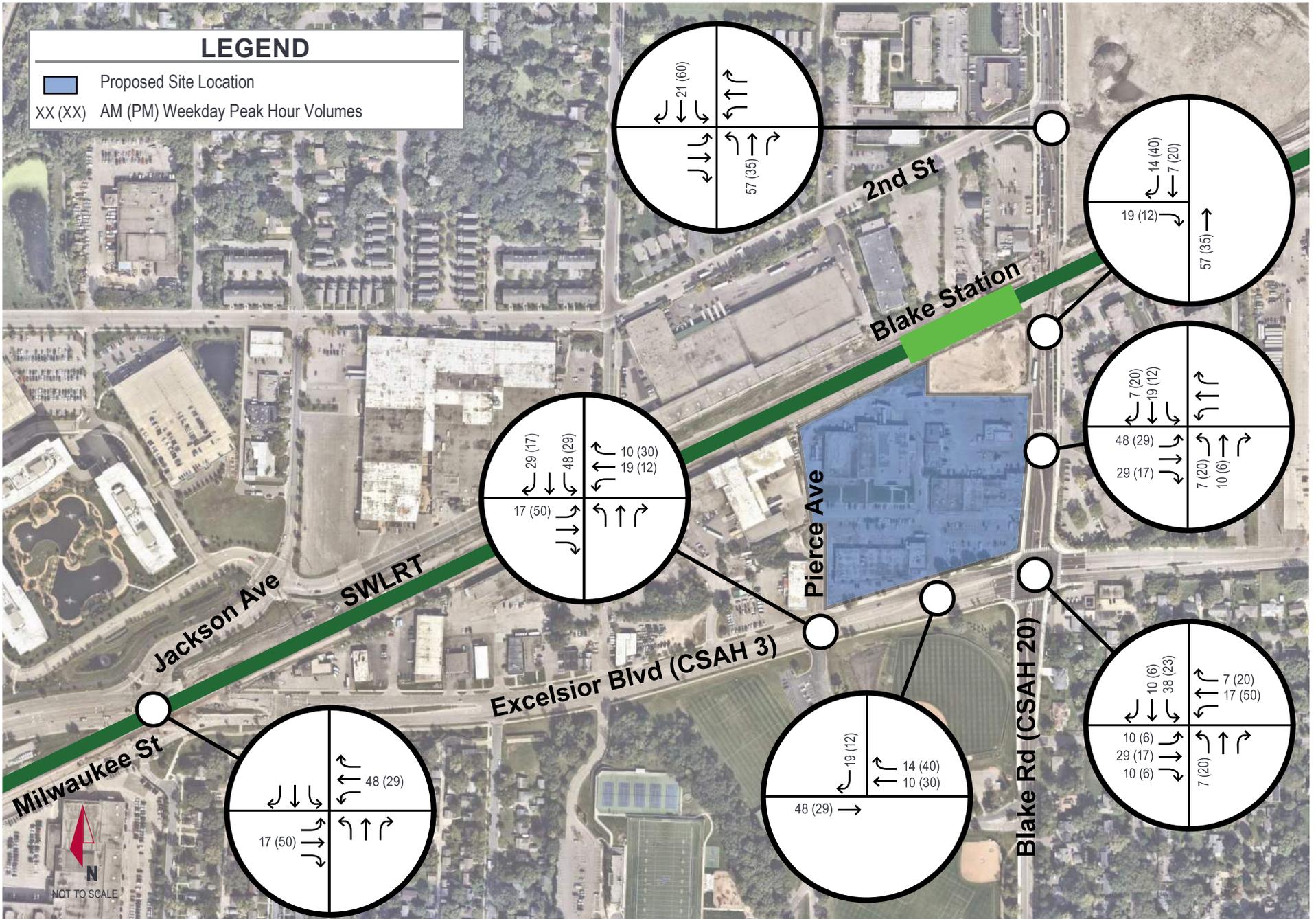


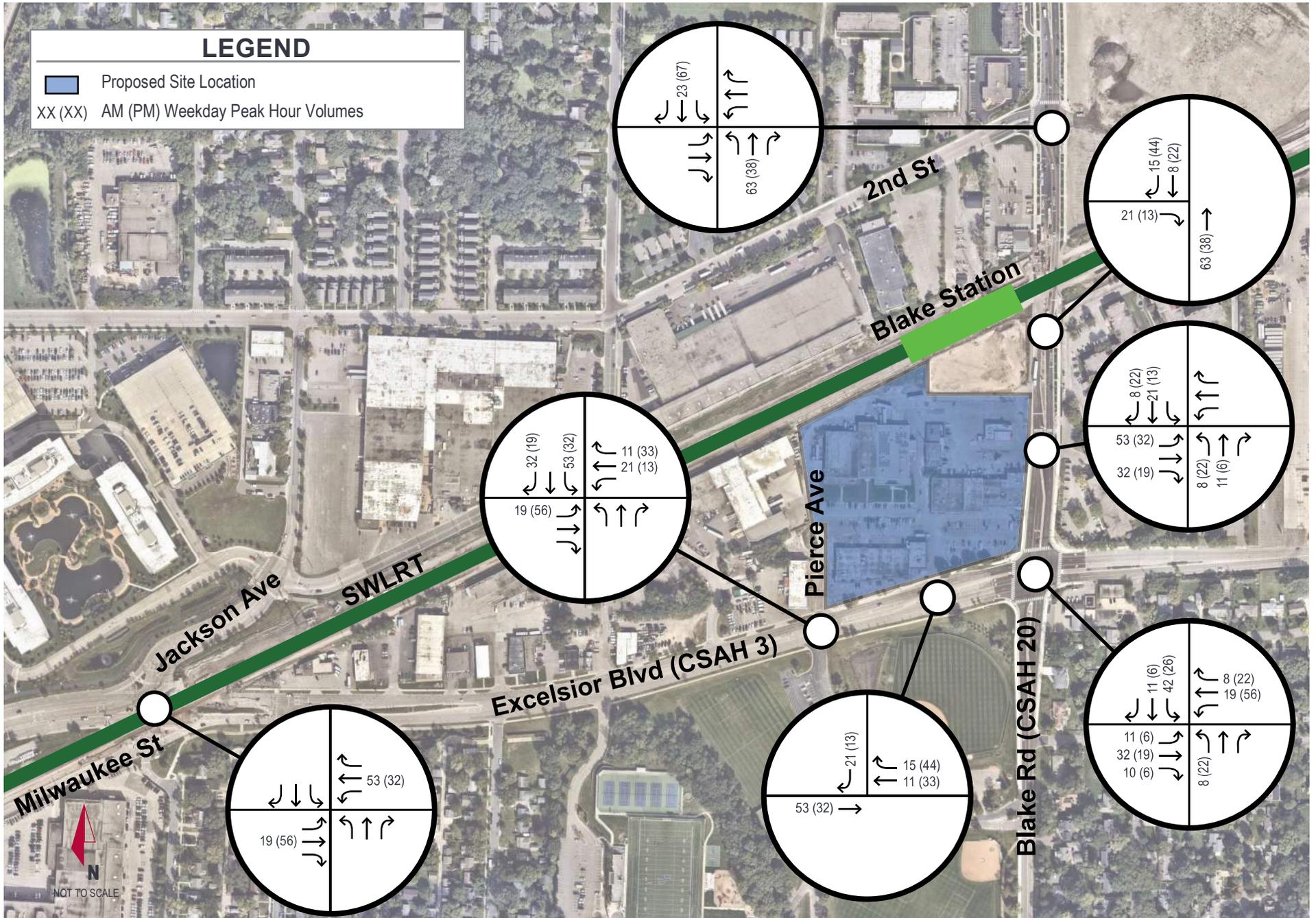


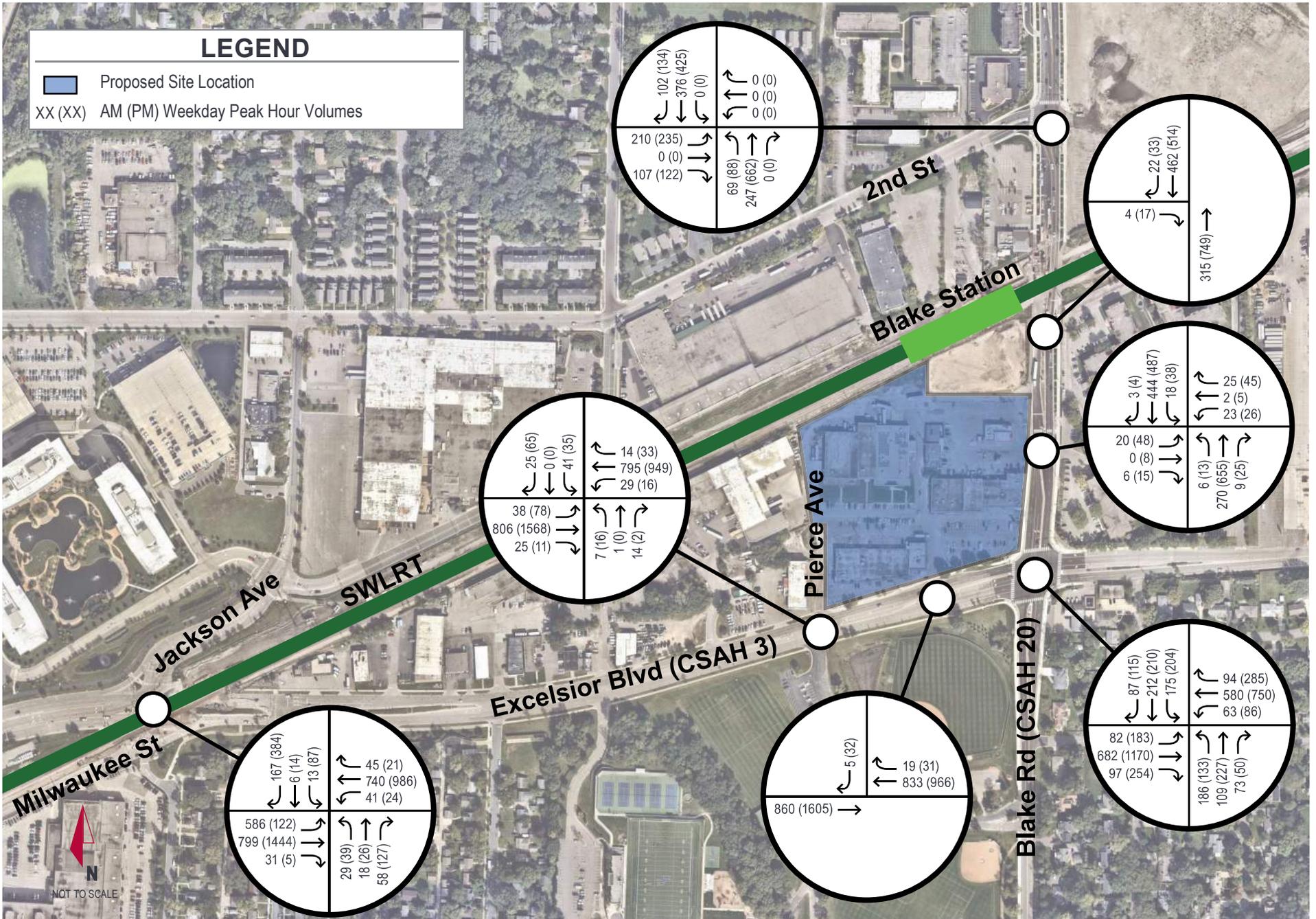


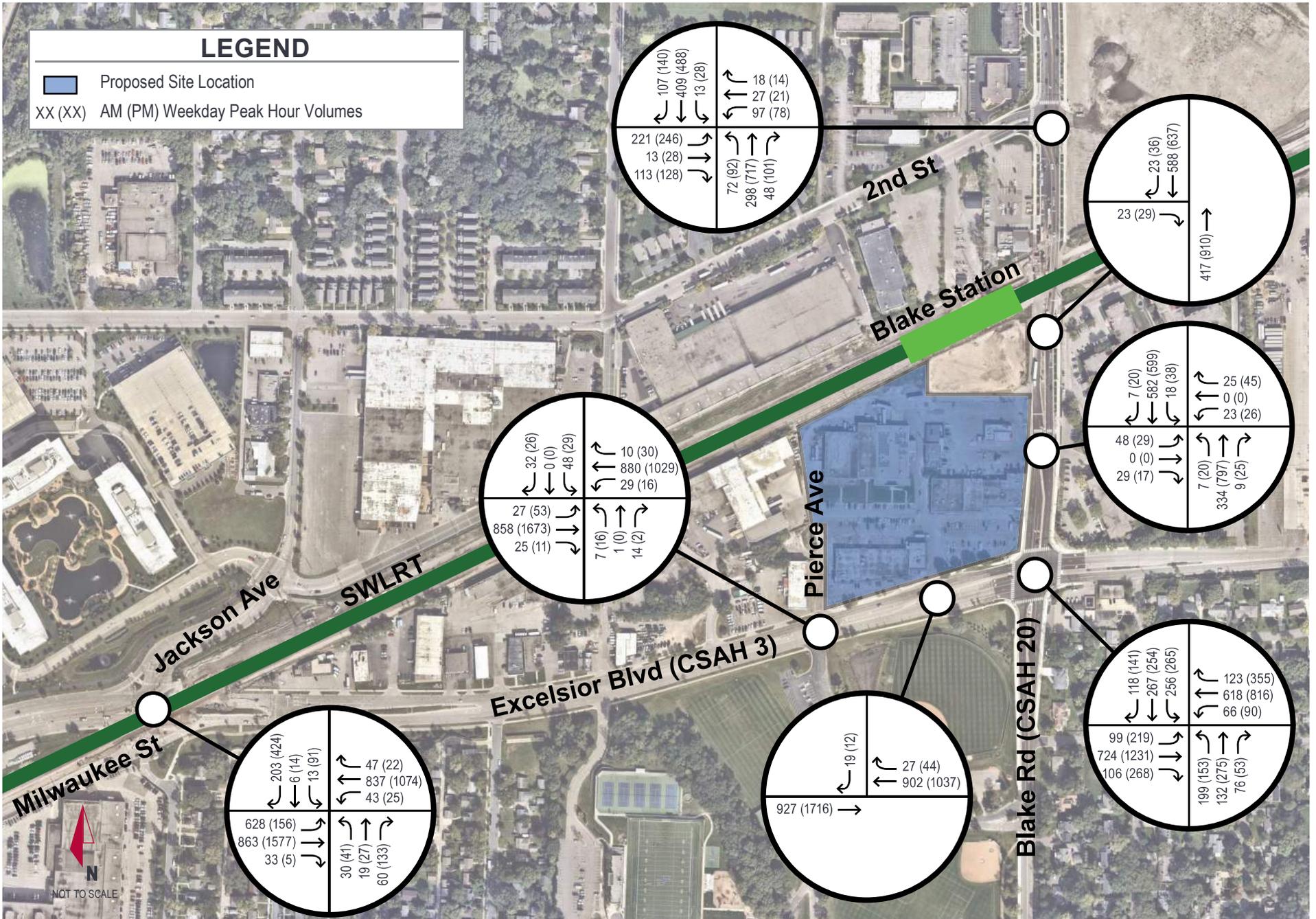


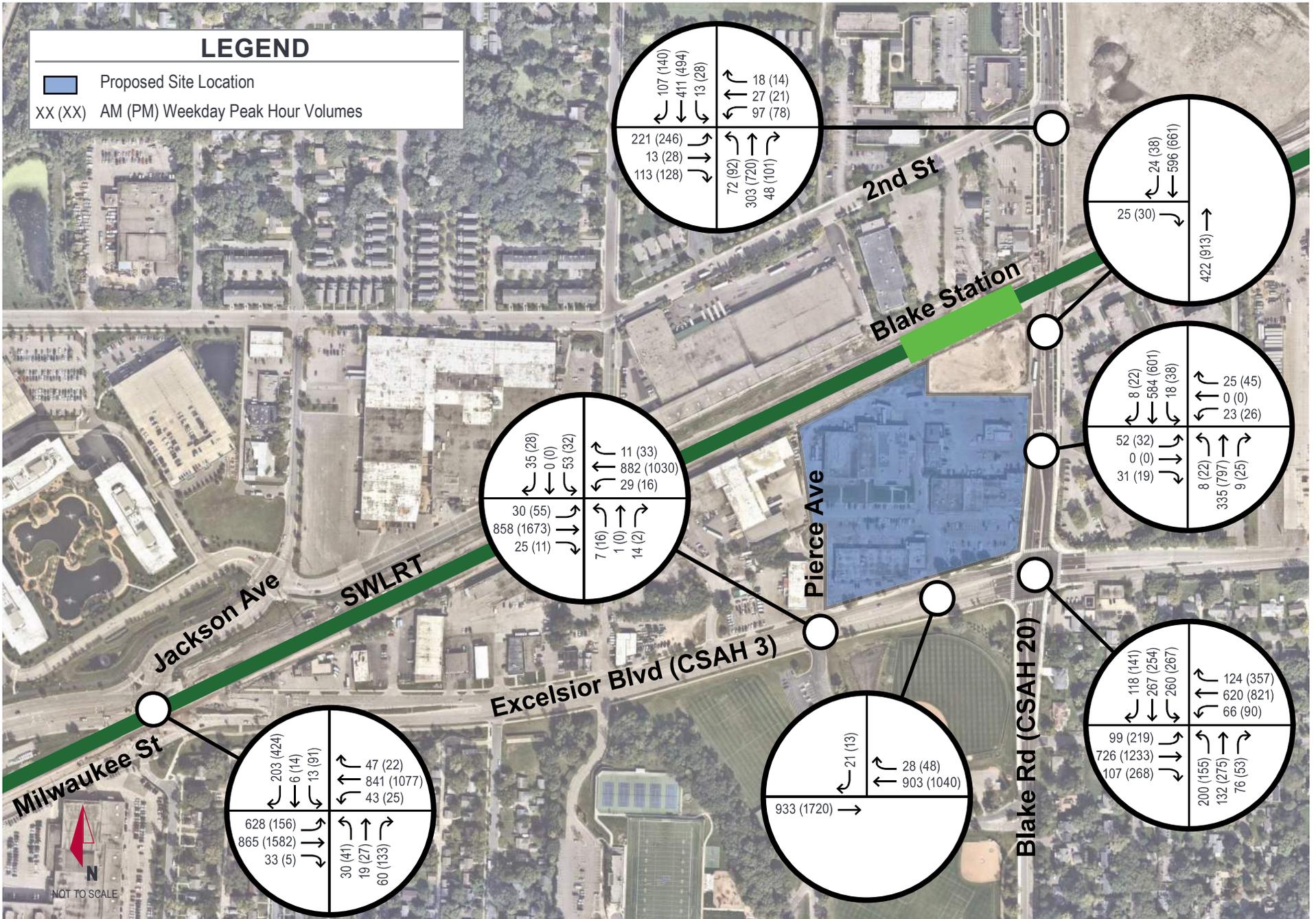


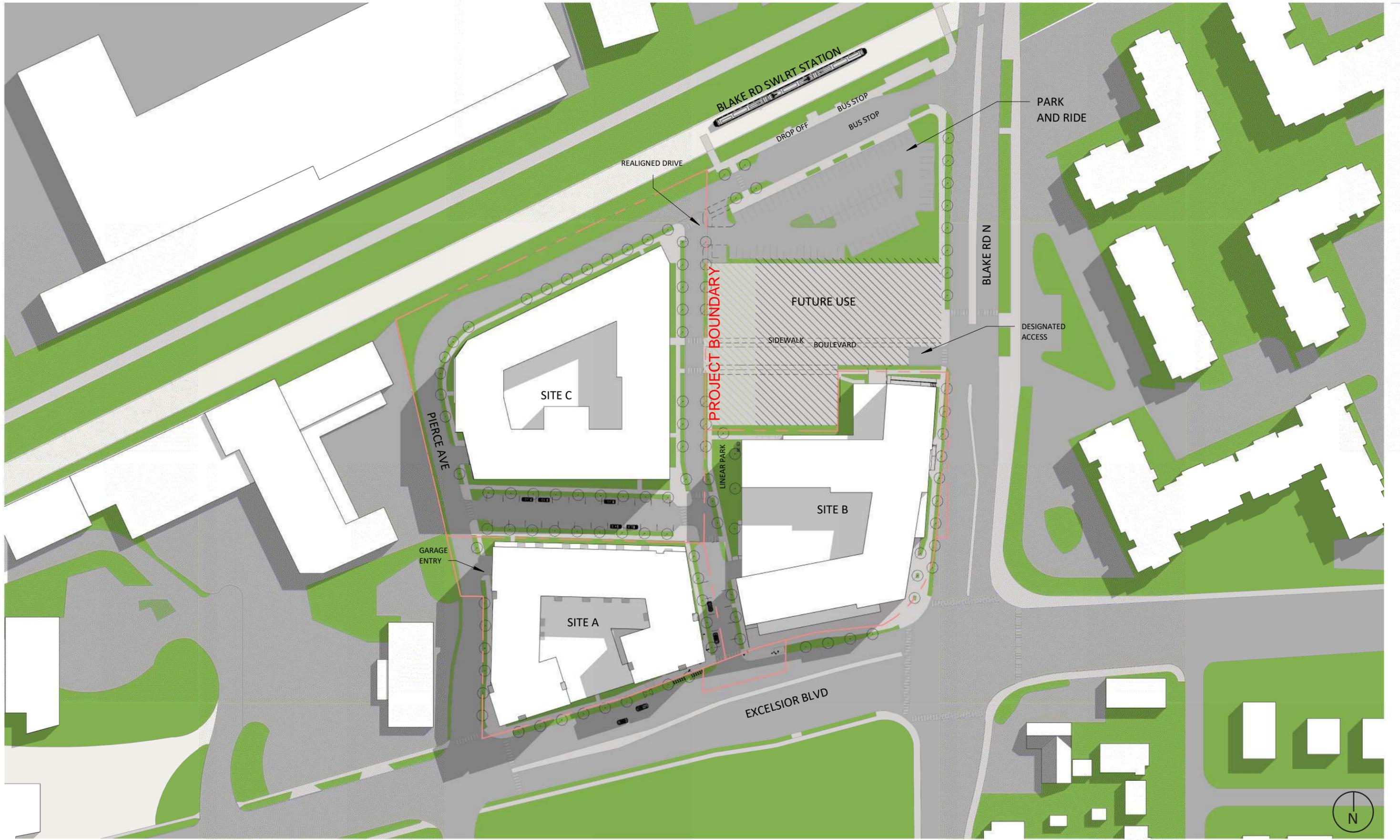










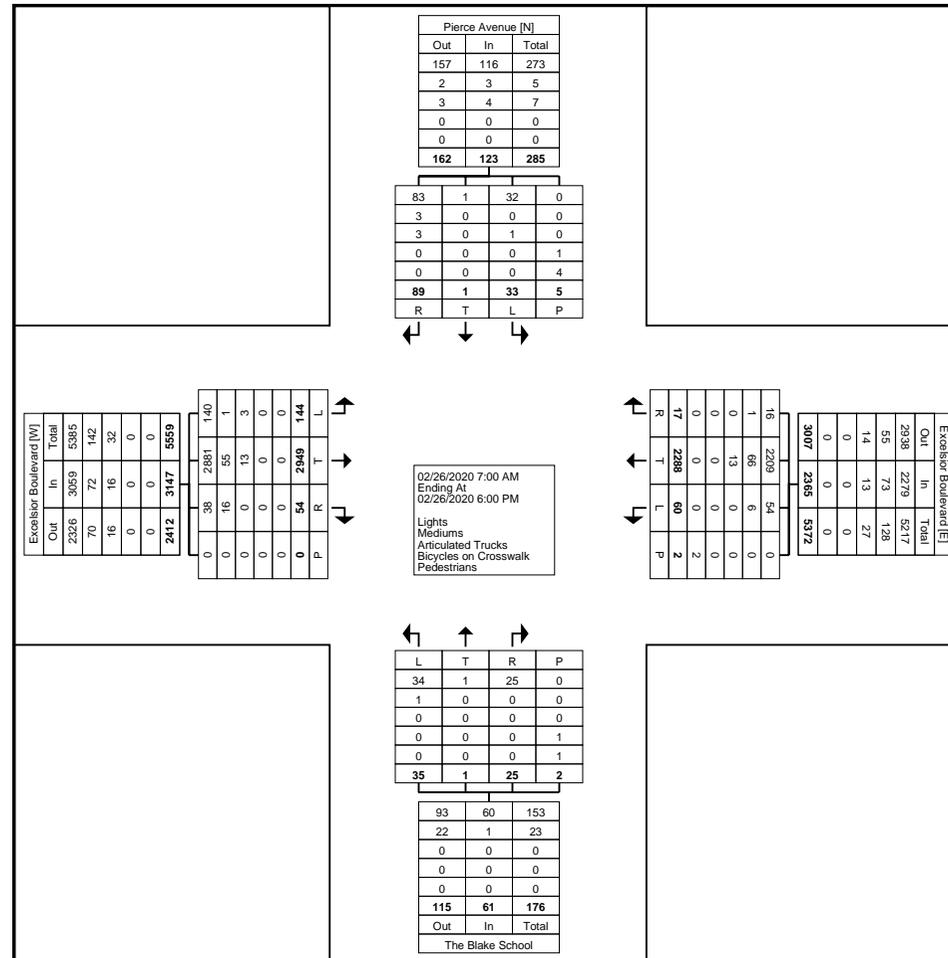


March 27, 2020

Scale 1 : 1400

### Turning Movement Data

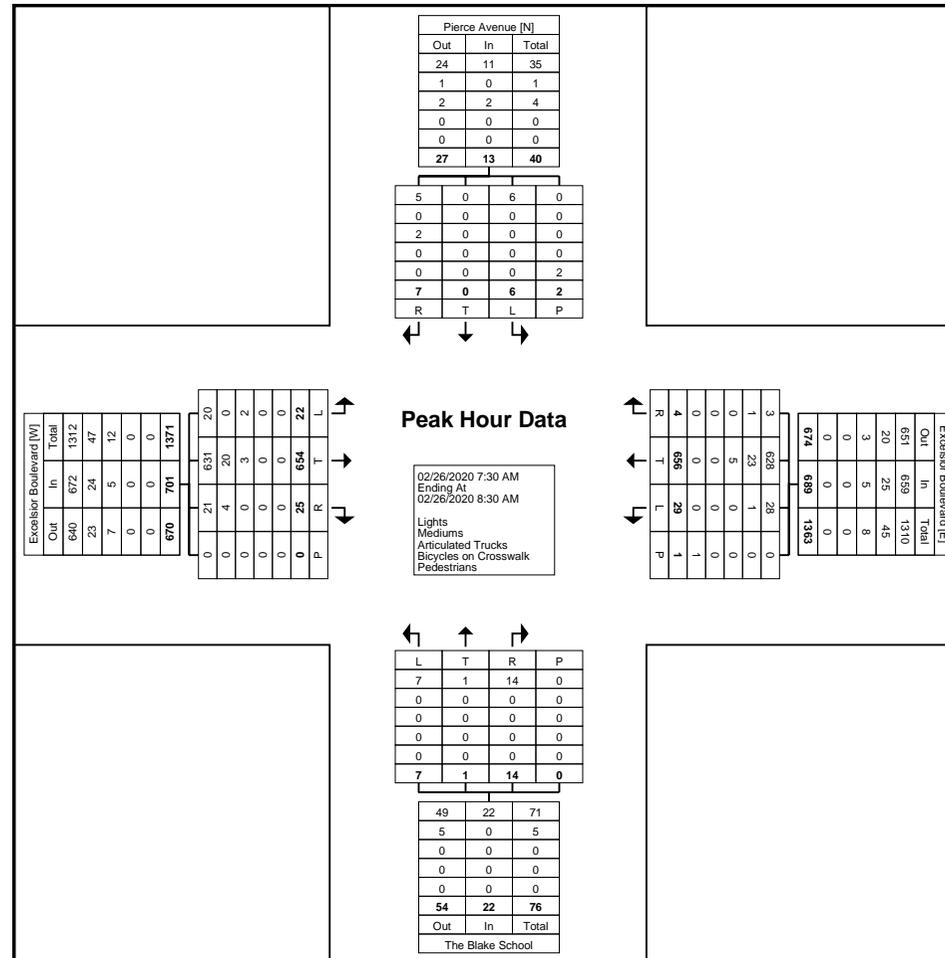
Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Pierce Avenue Southbound					The Blake School Driveway Northbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	65	0	0	65	4	108	4	0	116	2	0	1	1	3	2	0	1	0	3	187
7:15 AM	2	108	0	0	110	3	131	3	0	137	0	0	3	0	3	1	0	0	1	1	251
7:30 AM	6	144	0	0	150	3	152	5	0	160	1	0	2	2	3	0	0	0	0	0	313
7:45 AM	10	185	2	0	197	5	159	3	0	167	1	0	0	0	1	0	0	1	0	1	366
Hourly Total	18	502	2	0	522	15	550	15	0	580	4	0	6	3	10	3	0	2	1	5	1117
8:00 AM	8	163	0	1	171	7	171	9	0	187	1	0	3	0	4	2	1	8	0	11	373
8:15 AM	5	164	2	0	171	7	172	8	0	187	3	0	2	0	5	5	0	5	0	10	373
8:30 AM	0	125	1	0	126	8	148	4	0	160	1	0	3	0	4	2	0	2	0	4	294
8:45 AM	0	116	0	0	116	10	114	1	0	125	0	0	3	0	3	3	0	0	0	3	247
Hourly Total	13	568	3	1	584	32	605	22	0	659	5	0	11	0	16	12	1	15	0	28	1287
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	173	3	0	180	8	192	2	0	202	4	0	7	0	11	2	0	2	0	4	397
4:15 PM	2	167	1	0	170	13	196	3	0	212	4	0	9	1	13	1	0	1	0	2	397
4:30 PM	4	158	2	0	164	15	257	1	0	273	5	0	7	0	12	3	0	0	0	3	452
4:45 PM	3	150	2	0	155	11	237	4	0	252	5	0	14	0	19	2	0	1	0	3	429
Hourly Total	13	648	8	0	669	47	882	10	0	939	18	0	37	1	55	8	0	4	0	12	1675
5:00 PM	3	143	0	0	146	20	272	3	0	295	2	0	16	0	18	2	0	1	0	3	462
5:15 PM	6	178	2	1	186	12	235	3	0	250	0	0	8	0	8	9	0	0	1	9	453
5:30 PM	3	131	1	0	135	8	236	0	0	244	4	1	8	0	13	1	0	0	0	1	393
5:45 PM	4	118	1	0	123	10	169	1	0	180	0	0	3	1	3	0	0	3	0	3	309
Hourly Total	16	570	4	1	590	50	912	7	0	969	6	1	35	1	42	12	0	4	1	16	1617
Grand Total	60	2288	17	2	2365	144	2949	54	0	3147	33	1	89	5	123	35	1	25	2	61	5696
Approach %	2.5	96.7	0.7	-	-	4.6	93.7	1.7	-	-	26.8	0.8	72.4	-	-	57.4	1.6	41.0	-	-	-
Total %	1.1	40.2	0.3	-	41.5	2.5	51.8	0.9	-	55.2	0.6	0.0	1.6	-	2.2	0.6	0.0	0.4	-	1.1	-
Lights	54	2209	16	-	2279	140	2881	38	-	3059	32	1	83	-	116	34	1	25	-	60	5514
% Lights	90.0	96.5	94.1	-	96.4	97.2	97.7	70.4	-	97.2	97.0	100.0	93.3	-	94.3	97.1	100.0	100.0	-	98.4	96.8
Mediums	6	66	1	-	73	1	55	16	-	72	0	0	3	-	3	1	0	0	-	1	149
% Mediums	10.0	2.9	5.9	-	3.1	0.7	1.9	29.6	-	2.3	0.0	0.0	3.4	-	2.4	2.9	0.0	0.0	-	1.6	2.6
Articulated Trucks	0	13	0	-	13	3	13	0	-	16	1	0	3	-	4	0	0	0	-	0	33
% Articulated Trucks	0.0	0.6	0.0	-	0.5	2.1	0.4	0.0	-	0.5	3.0	0.0	3.4	-	3.3	0.0	0.0	0.0	-	0.0	0.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	20.0	-	-	-	-	50.0	-	-
Pedestrians	-	-	-	2	-	-	-	-	0	-	-	-	-	4	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	80.0	-	-	-	-	50.0	-	-



Turning Movement Data Plot

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

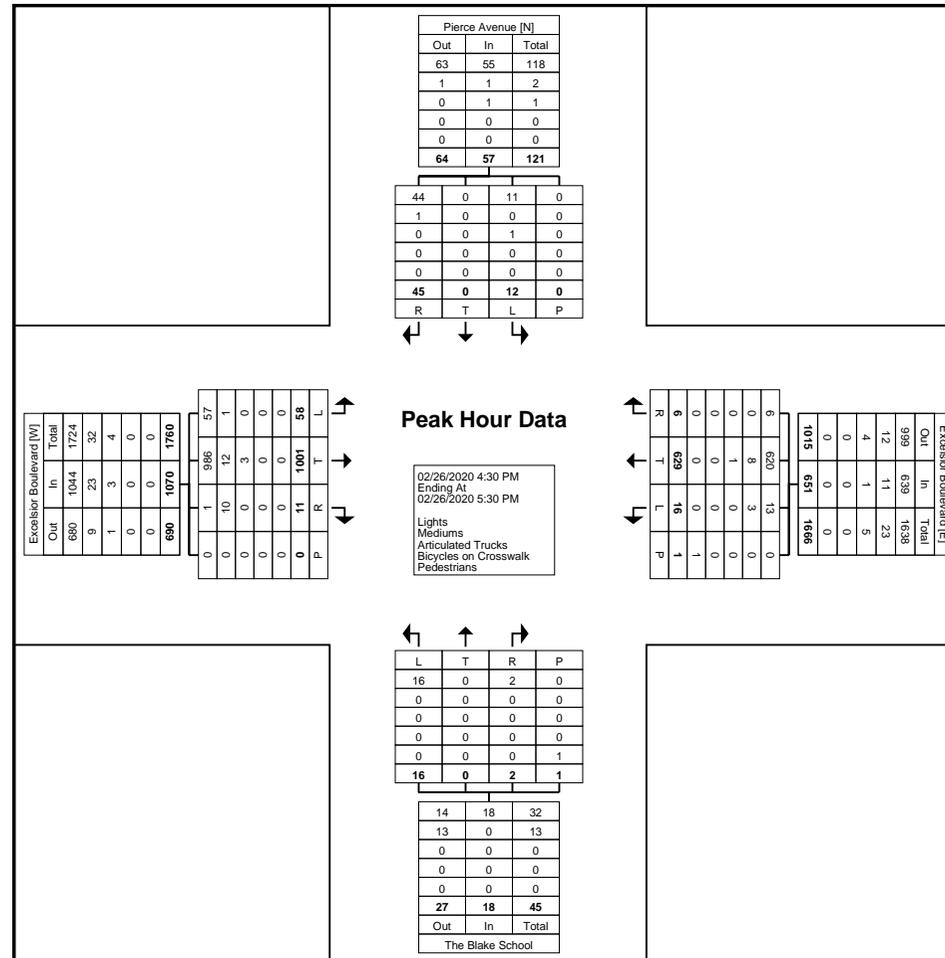
Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Pierce Avenue Southbound					The Blake School Driveway Northbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:30 AM	6	144	0	0	150	3	152	5	0	160	1	0	2	2	3	0	0	0	0	0	313
7:45 AM	10	185	2	0	197	5	159	3	0	167	1	0	0	0	1	0	0	1	0	1	366
8:00 AM	8	163	0	1	171	7	171	9	0	187	1	0	3	0	4	2	1	8	0	11	373
8:15 AM	5	164	2	0	171	7	172	8	0	187	3	0	2	0	5	5	0	5	0	10	373
Total	29	656	4	1	689	22	654	25	0	701	6	0	7	2	13	7	1	14	0	22	1425
Approach %	4.2	95.2	0.6	-	-	3.1	93.3	3.6	-	-	46.2	0.0	53.8	-	-	31.8	4.5	63.6	-	-	-
Total %	2.0	46.0	0.3	-	48.4	1.5	45.9	1.8	-	49.2	0.4	0.0	0.5	-	0.9	0.5	0.1	1.0	-	1.5	-
PHF	0.725	0.886	0.500	-	0.874	0.786	0.951	0.694	-	0.937	0.500	0.000	0.583	-	0.650	0.350	0.250	0.438	-	0.500	0.955
Lights	28	628	3	-	659	20	631	21	-	672	6	0	5	-	11	7	1	14	-	22	1364
% Lights	96.6	95.7	75.0	-	95.6	90.9	96.5	84.0	-	95.9	100.0	-	71.4	-	84.6	100.0	100.0	100.0	-	100.0	95.7
Mediums	1	23	1	-	25	0	20	4	-	24	0	0	0	-	0	0	0	0	-	0	49
% Mediums	3.4	3.5	25.0	-	3.6	0.0	3.1	16.0	-	3.4	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	3.4
Articulated Trucks	0	5	0	-	5	2	3	0	-	5	0	0	2	-	2	0	0	0	-	0	12
% Articulated Trucks	0.0	0.8	0.0	-	0.7	9.1	0.5	0.0	-	0.7	0.0	-	28.6	-	15.4	0.0	0.0	0.0	-	0.0	0.8
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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

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

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Pierce Avenue Southbound					The Blake School Driveway Northbound					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	
4:30 PM	4	158	2	0	164	15	257	1	0	273	5	0	7	0	12	3	0	0	0	3	452
4:45 PM	3	150	2	0	155	11	237	4	0	252	5	0	14	0	19	2	0	1	0	3	429
5:00 PM	3	143	0	0	146	20	272	3	0	295	2	0	16	0	18	2	0	1	0	3	462
5:15 PM	6	178	2	1	186	12	235	3	0	250	0	0	8	0	8	9	0	0	1	9	453
Total	16	629	6	1	651	58	1001	11	0	1070	12	0	45	0	57	16	0	2	1	18	1796
Approach %	2.5	96.6	0.9	-	-	5.4	93.6	1.0	-	-	21.1	0.0	78.9	-	-	88.9	0.0	11.1	-	-	-
Total %	0.9	35.0	0.3	-	36.2	3.2	55.7	0.6	-	59.6	0.7	0.0	2.5	-	3.2	0.9	0.0	0.1	-	1.0	-
PHF	0.667	0.883	0.750	-	0.875	0.725	0.920	0.688	-	0.907	0.600	0.000	0.703	-	0.750	0.444	0.000	0.500	-	0.500	0.972
Lights	13	620	6	-	639	57	986	1	-	1044	11	0	44	-	55	16	0	2	-	18	1756
% Lights	81.3	98.6	100.0	-	98.2	98.3	98.5	9.1	-	97.6	91.7	-	97.8	-	96.5	100.0	-	100.0	-	100.0	97.8
Mediums	3	8	0	-	11	1	12	10	-	23	0	0	1	-	1	0	0	0	-	0	35
% Mediums	18.8	1.3	0.0	-	1.7	1.7	1.2	90.9	-	2.1	0.0	-	2.2	-	1.8	0.0	-	0.0	-	0.0	1.9
Articulated Trucks	0	1	0	-	1	0	3	0	-	3	1	0	0	-	1	0	0	0	-	0	5
% Articulated Trucks	0.0	0.2	0.0	-	0.2	0.0	0.3	0.0	-	0.3	8.3	-	0.0	-	1.8	0.0	-	0.0	-	0.0	0.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

Kimley-Horn : Lisle (IL)  
 1001 Warrenville Road, Suite 350  
 Lisle, Illinois, United States 60532  
 331.481.7332 jack.olsson@kimley-horn.com

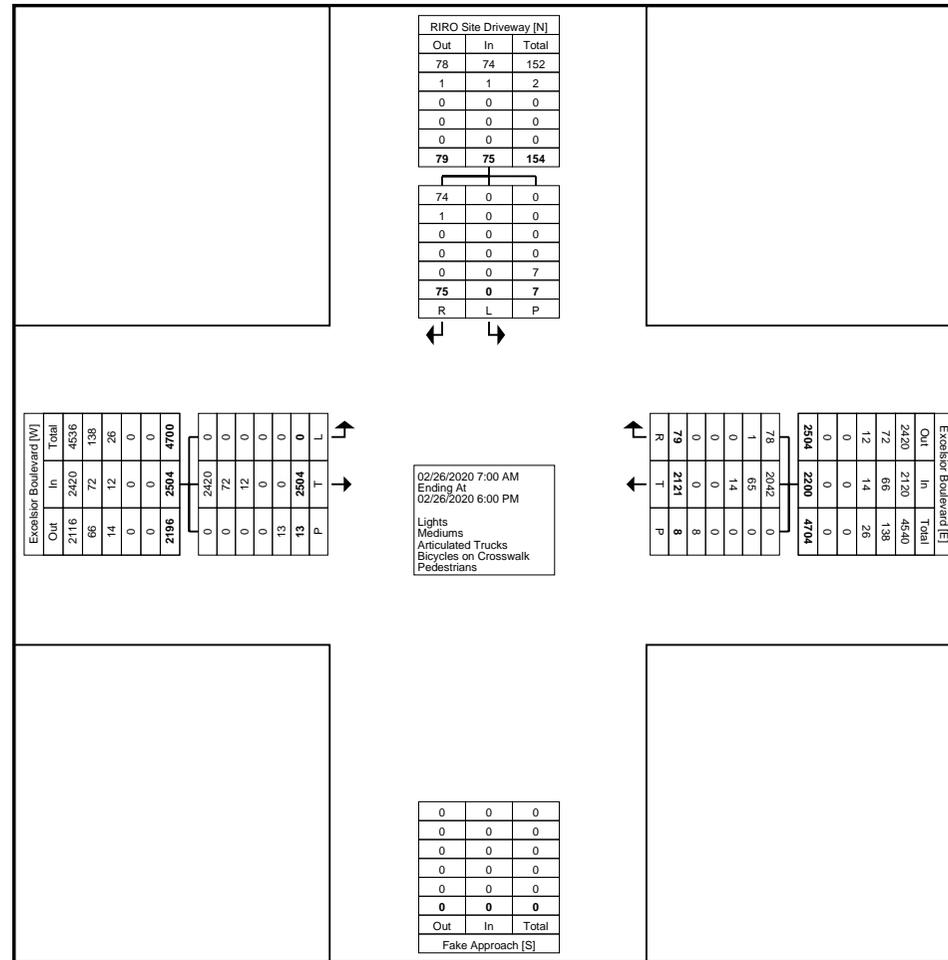
Count Name: 2\_Excelsior Boulevard & RIRO  
 Site Driveway  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 1

### Turning Movement Data

Start Time	Excelsior Boulevard Westbound				Excelsior Boulevard Eastbound				RIRO Site Driveway Southbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	39	2	0	41	0	42	0	42	0	2	1	2	85
7:15 AM	43	2	0	45	0	78	0	78	0	1	0	1	124
7:30 AM	43	1	0	44	0	83	1	83	0	2	1	2	129
7:45 AM	80	0	0	80	0	89	0	89	0	1	1	1	170
Hourly Total	205	5	0	210	0	292	1	292	0	6	3	6	508
8:00 AM	69	2	2	71	0	108	2	108	0	0	1	0	179
8:15 AM	108	2	0	110	0	134	0	134	0	1	0	1	245
8:30 AM	154	2	1	156	0	146	1	146	0	0	1	0	302
8:45 AM	195	0	0	195	0	163	0	163	0	1	0	1	359
Hourly Total	526	6	3	532	0	551	3	551	0	2	2	2	1085
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	186	5	1	191	0	124	4	124	0	9	0	9	324
4:15 PM	208	12	1	220	0	138	3	138	0	10	0	10	368
4:30 PM	183	5	1	188	0	270	1	270	0	9	0	9	467
4:45 PM	160	5	0	165	0	191	0	191	0	8	0	8	364
Hourly Total	737	27	3	764	0	723	8	723	0	36	0	36	1523
5:00 PM	179	10	0	189	0	198	0	198	0	8	0	8	395
5:15 PM	158	6	1	164	0	213	0	213	0	6	0	6	383
5:30 PM	160	16	1	176	0	266	1	266	0	12	0	12	454
5:45 PM	156	9	0	165	0	261	0	261	0	5	2	5	431
Hourly Total	653	41	2	694	0	938	1	938	0	31	2	31	1663
Grand Total	2121	79	8	2200	0	2504	13	2504	0	75	7	75	4779
Approach %	96.4	3.6	-	-	0.0	100.0	-	-	0.0	100.0	-	-	-
Total %	44.4	1.7	-	46.0	0.0	52.4	-	52.4	0.0	1.6	-	1.6	-
Lights	2042	78	-	2120	0	2420	-	2420	0	74	-	74	4614
% Lights	96.3	98.7	-	96.4	-	96.6	-	96.6	-	98.7	-	98.7	96.5
Mediums	65	1	-	66	0	72	-	72	0	1	-	1	139
% Mediums	3.1	1.3	-	3.0	-	2.9	-	2.9	-	1.3	-	1.3	2.9
Articulated Trucks	14	0	-	14	0	12	-	12	0	0	-	0	26
% Articulated Trucks	0.7	0.0	-	0.6	-	0.5	-	0.5	-	0.0	-	0.0	0.5
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	0.0	-	-
Pedestrians	-	-	8	-	-	-	13	-	-	-	7	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-

Kimley-Horn : Lisle (IL)  
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 Lisle, Illinois, United States 60532  
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Count Name: 2\_Excelsior Boulevard & RIRO  
 Site Driveway  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 2



Turning Movement Data Plot

Kimley-Horn : Lisle (IL)  
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 331.481.7332 jack.olsson@kimley-horn.com

Count Name: 2\_Excelsior Boulevard & RIRO  
 Site Driveway  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 3

### Turning Movement Peak Hour Data (8:00 AM)

Start Time	Excelsior Boulevard Westbound				Excelsior Boulevard Eastbound				RIRO Site Driveway Southbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
8:00 AM	69	2	2	71	0	108	2	108	0	0	1	0	179
8:15 AM	108	2	0	110	0	134	0	134	0	1	0	1	245
8:30 AM	154	2	1	156	0	146	1	146	0	0	1	0	302
8:45 AM	195	0	0	195	0	163	0	163	0	1	0	1	359
Total	526	6	3	532	0	551	3	551	0	2	2	2	1085
Approach %	98.9	1.1	-	-	0.0	100.0	-	-	0.0	100.0	-	-	-
Total %	48.5	0.6	-	49.0	0.0	50.8	-	50.8	0.0	0.2	-	0.2	-
PHF	0.674	0.750	-	0.682	0.000	0.845	-	0.845	0.000	0.500	-	0.500	0.756
Lights	503	6	-	509	0	537	-	537	0	2	-	2	1048
% Lights	95.6	100.0	-	95.7	-	97.5	-	97.5	-	100.0	-	100.0	96.6
Mediums	17	0	-	17	0	13	-	13	0	0	-	0	30
% Mediums	3.2	0.0	-	3.2	-	2.4	-	2.4	-	0.0	-	0.0	2.8
Articulated Trucks	6	0	-	6	0	1	-	1	0	0	-	0	7
% Articulated Trucks	1.1	0.0	-	1.1	-	0.2	-	0.2	-	0.0	-	0.0	0.6
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	0.0	-	-
Pedestrians	-	-	3	-	-	-	3	-	-	-	2	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-



### Turning Movement Peak Hour Data (5:00 PM)

Start Time	Excelsior Boulevard Westbound				Excelsior Boulevard Eastbound				RIRO Site Driveway Southbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
5:00 PM	179	10	0	189	0	198	0	198	0	8	0	8	395
5:15 PM	158	6	1	164	0	213	0	213	0	6	0	6	383
5:30 PM	160	16	1	176	0	266	1	266	0	12	0	12	454
5:45 PM	156	9	0	165	0	261	0	261	0	5	2	5	431
Total	653	41	2	694	0	938	1	938	0	31	2	31	1663
Approach %	94.1	5.9	-	-	0.0	100.0	-	-	0.0	100.0	-	-	-
Total %	39.3	2.5	-	41.7	0.0	56.4	-	56.4	0.0	1.9	-	1.9	-
PHF	0.912	0.641	-	0.918	0.000	0.882	-	0.882	0.000	0.646	-	0.646	0.916
Lights	631	41	-	672	0	922	-	922	0	31	-	31	1625
% Lights	96.6	100.0	-	96.8	-	98.3	-	98.3	-	100.0	-	100.0	97.7
Mediums	19	0	-	19	0	9	-	9	0	0	-	0	28
% Mediums	2.9	0.0	-	2.7	-	1.0	-	1.0	-	0.0	-	0.0	1.7
Articulated Trucks	3	0	-	3	0	7	-	7	0	0	-	0	10
% Articulated Trucks	0.5	0.0	-	0.4	-	0.7	-	0.7	-	0.0	-	0.0	0.6
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	0.0	-	-
Pedestrians	-	-	2	-	-	-	1	-	-	-	2	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	100.0	-	-



Kimley-Horn : Lisle (IL)  
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Count Name: 3\_Blake Road & Excelsior  
 Boulevard  
 Site Code:  
 Start Date: 03/10/2020  
 Page No: 1

### Turning Movement Data

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Blake Road Southbound					Blake Road Northbound					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	4	44	11	0	59	12	67	8	0	87	14	10	7	0	31	13	11	13	0	37	214
7:15 AM	7	66	14	0	87	15	95	12	0	122	22	22	12	0	56	8	11	14	0	33	298
7:30 AM	11	98	20	0	129	15	104	15	1	134	29	13	17	0	59	14	24	18	1	56	378
7:45 AM	21	134	23	0	178	10	143	18	2	171	35	21	20	1	76	28	21	16	0	65	490
Hourly Total	43	342	68	0	453	52	409	53	3	514	100	66	56	1	222	63	67	61	1	191	1380
8:00 AM	17	131	38	0	186	20	147	24	0	191	24	17	29	0	70	40	28	21	0	89	536
8:15 AM	12	127	11	0	150	26	134	33	0	193	23	13	19	0	55	24	34	16	0	74	472
8:30 AM	12	67	28	0	107	12	113	24	0	149	24	12	11	0	47	17	30	15	0	62	365
8:45 AM	9	96	23	0	128	8	97	6	0	111	22	20	19	0	61	20	9	11	0	40	340
Hourly Total	50	421	100	0	571	66	491	87	0	644	93	62	78	0	233	101	101	63	0	265	1713
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	12	141	39	0	192	25	130	24	1	179	33	23	17	0	73	16	19	6	0	41	485
4:15 PM	18	132	44	3	194	21	149	38	0	208	39	23	18	1	80	29	28	5	4	62	544
4:30 PM	31	150	50	1	231	26	149	34	2	209	29	31	15	6	75	18	38	9	0	65	580
4:45 PM	22	121	54	0	197	22	158	31	5	211	32	17	21	0	70	21	35	10	0	66	544
Hourly Total	83	544	187	4	814	94	586	127	8	807	133	94	71	7	298	84	120	30	4	234	2153
5:00 PM	14	138	51	3	203	23	167	37	1	227	25	42	20	0	87	20	38	16	0	74	591
5:15 PM	17	99	40	0	156	26	164	36	0	226	38	34	23	0	95	28	43	14	0	85	562
5:30 PM	16	111	36	0	163	29	122	22	0	173	34	32	21	0	87	16	24	10	0	50	473
5:45 PM	14	69	36	0	119	24	83	21	3	128	30	25	19	0	74	26	30	13	0	69	390
Hourly Total	61	417	163	3	641	102	536	116	4	754	127	133	83	0	343	90	135	53	0	278	2016
Grand Total	237	1724	518	7	2479	314	2022	383	15	2719	453	355	288	8	1096	338	423	207	5	968	7262
Approach %	9.6	69.5	20.9	-	-	11.5	74.4	14.1	-	-	41.3	32.4	26.3	-	-	34.9	43.7	21.4	-	-	-
Total %	3.3	23.7	7.1	-	34.1	4.3	27.8	5.3	-	37.4	6.2	4.9	4.0	-	15.1	4.7	5.8	2.9	-	13.3	-
Lights	223	1674	498	-	2395	310	1971	380	-	2661	439	343	284	-	1066	334	412	201	-	947	7069
% Lights	94.1	97.1	96.1	-	96.6	98.7	97.5	99.2	-	97.9	96.9	96.6	98.6	-	97.3	98.8	97.4	97.1	-	97.8	97.3
Mediums	14	40	17	-	71	4	40	2	-	46	9	11	4	-	24	4	11	5	-	20	161
% Mediums	5.9	2.3	3.3	-	2.9	1.3	2.0	0.5	-	1.7	2.0	3.1	1.4	-	2.2	1.2	2.6	2.4	-	2.1	2.2
Articulated Trucks	0	10	3	-	13	0	11	1	-	12	5	1	0	-	6	0	0	1	-	1	32
% Articulated Trucks	0.0	0.6	0.6	-	0.5	0.0	0.5	0.3	-	0.4	1.1	0.3	0.0	-	0.5	0.0	0.0	0.5	-	0.1	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	7	-	-	-	-	15	-	-	-	-	8	-	-	-	-	5	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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Count Name: 3\_Blake Road & Excelsior  
 Boulevard  
 Site Code:  
 Start Date: 03/10/2020  
 Page No: 3

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

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Blake Road Southbound					Blake Road Northbound					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	
7:30 AM	11	98	20	0	129	15	104	15	1	134	29	13	17	0	59	14	24	18	1	56	378
7:45 AM	21	134	23	0	178	10	143	18	2	171	35	21	20	1	76	28	21	16	0	65	490
8:00 AM	17	131	38	0	186	20	147	24	0	191	24	17	29	0	70	40	28	21	0	89	536
8:15 AM	12	127	11	0	150	26	134	33	0	193	23	13	19	0	55	24	34	16	0	74	472
Total	61	490	92	0	643	71	528	90	3	689	111	64	85	1	260	106	107	71	1	284	1876
Approach %	9.5	76.2	14.3	-	-	10.3	76.6	13.1	-	-	42.7	24.6	32.7	-	-	37.3	37.7	25.0	-	-	-
Total %	3.3	26.1	4.9	-	34.3	3.8	28.1	4.8	-	36.7	5.9	3.4	4.5	-	13.9	5.7	5.7	3.8	-	15.1	-
PHF	0.726	0.914	0.605	-	0.864	0.683	0.898	0.682	-	0.892	0.793	0.762	0.733	-	0.855	0.663	0.787	0.845	-	0.798	0.875
Lights	57	475	83	-	615	70	516	90	-	676	104	58	83	-	245	103	105	70	-	278	1814
% Lights	93.4	96.9	90.2	-	95.6	98.6	97.7	100.0	-	98.1	93.7	90.6	97.6	-	94.2	97.2	98.1	98.6	-	97.9	96.7
Mediums	4	12	8	-	24	1	10	0	-	11	5	6	2	-	13	3	2	1	-	6	54
% Mediums	6.6	2.4	8.7	-	3.7	1.4	1.9	0.0	-	1.6	4.5	9.4	2.4	-	5.0	2.8	1.9	1.4	-	2.1	2.9
Articulated Trucks	0	3	1	-	4	0	2	0	-	2	2	0	0	-	2	0	0	0	-	0	8
% Articulated Trucks	0.0	0.6	1.1	-	0.6	0.0	0.4	0.0	-	0.3	1.8	0.0	0.0	-	0.8	0.0	0.0	0.0	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	3	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



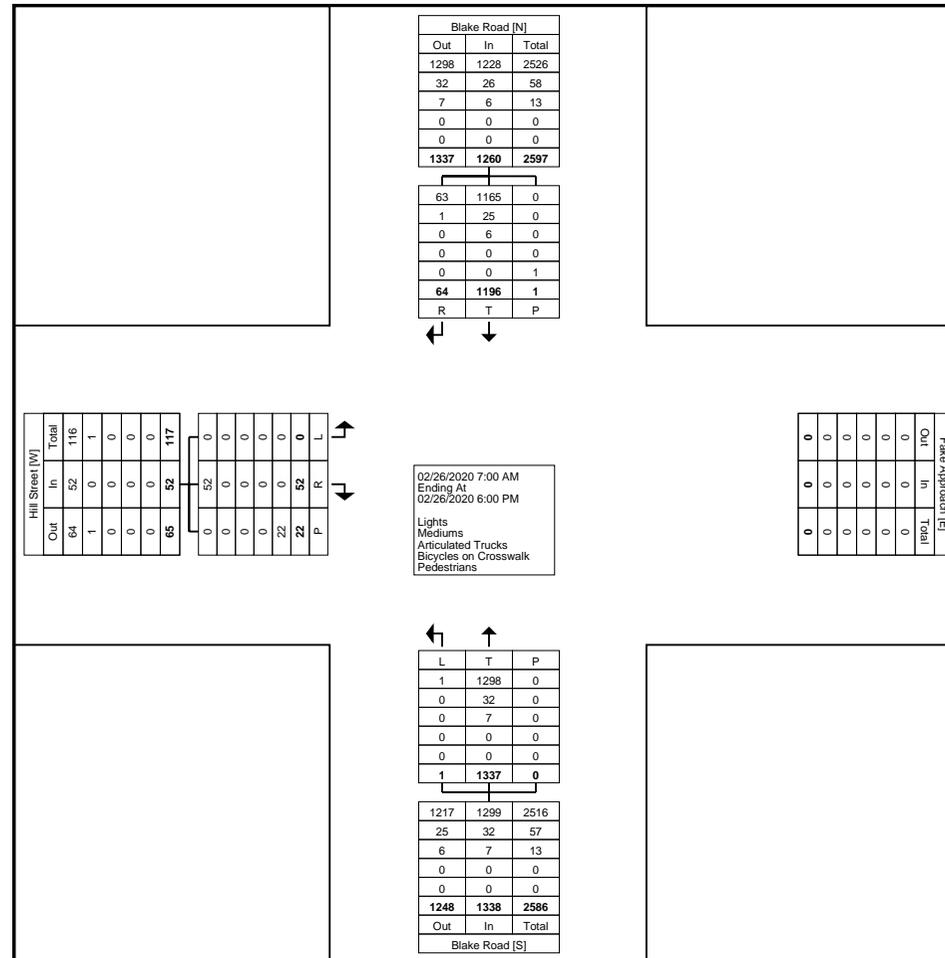
### Turning Movement Peak Hour Data (4:30 PM)

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Blake Road Southbound					Blake Road Northbound					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	
4:30 PM	31	150	50	1	231	26	149	34	2	209	29	31	15	6	75	18	38	9	0	65	580
4:45 PM	22	121	54	0	197	22	158	31	5	211	32	17	21	0	70	21	35	10	0	66	544
5:00 PM	14	138	51	3	203	23	167	37	1	227	25	42	20	0	87	20	38	16	0	74	591
5:15 PM	17	99	40	0	156	26	164	36	0	226	38	34	23	0	95	28	43	14	0	85	562
Total	84	508	195	4	787	97	638	138	8	873	124	124	79	6	327	87	154	49	0	290	2277
Approach %	10.7	64.5	24.8	-	-	11.1	73.1	15.8	-	-	37.9	37.9	24.2	-	-	30.0	53.1	16.9	-	-	-
Total %	3.7	22.3	8.6	-	34.6	4.3	28.0	6.1	-	38.3	5.4	5.4	3.5	-	14.4	3.8	6.8	2.2	-	12.7	-
PHF	0.677	0.847	0.903	-	0.852	0.933	0.955	0.932	-	0.961	0.816	0.738	0.859	-	0.861	0.777	0.895	0.766	-	0.853	0.963
Lights	80	495	192	-	767	96	625	137	-	858	121	121	78	-	320	87	152	48	-	287	2232
% Lights	95.2	97.4	98.5	-	97.5	99.0	98.0	99.3	-	98.3	97.6	97.6	98.7	-	97.9	100.0	98.7	98.0	-	99.0	98.0
Mediums	4	11	2	-	17	1	9	1	-	11	1	3	1	-	5	0	2	1	-	3	36
% Mediums	4.8	2.2	1.0	-	2.2	1.0	1.4	0.7	-	1.3	0.8	2.4	1.3	-	1.5	0.0	1.3	2.0	-	1.0	1.6
Articulated Trucks	0	2	1	-	3	0	4	0	-	4	2	0	0	-	2	0	0	0	-	0	9
% Articulated Trucks	0.0	0.4	0.5	-	0.4	0.0	0.6	0.0	-	0.5	1.6	0.0	0.0	-	0.6	0.0	0.0	0.0	-	0.0	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	4	-	-	-	-	8	-	-	-	-	6	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



### Turning Movement Data

Start Time	Hill Street Eastbound				Blake Road Southbound				Blake Road Northbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
7:00 AM	0	0	4	0	32	2	0	34	0	27	0	27	61
7:15 AM	0	0	1	0	64	2	0	66	0	45	0	45	111
7:30 AM	0	0	0	0	76	1	0	77	0	45	0	45	122
7:45 AM	0	0	1	0	66	0	0	66	0	80	0	80	146
Hourly Total	0	0	6	0	238	5	0	243	0	197	0	197	440
8:00 AM	0	1	0	1	86	2	0	88	1	63	0	64	153
8:15 AM	0	1	0	1	69	3	0	72	0	64	0	64	137
8:30 AM	0	2	0	2	61	5	0	66	0	56	0	56	124
8:45 AM	0	2	0	2	48	4	0	52	0	55	0	55	109
Hourly Total	0	6	0	6	264	14	0	278	1	238	0	239	523
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	6	1	6	73	3	0	76	0	115	0	115	197
4:15 PM	0	4	1	4	86	11	0	97	0	118	0	118	219
4:30 PM	0	7	5	7	93	7	0	100	0	120	0	120	227
4:45 PM	0	3	4	3	96	4	1	100	0	120	0	120	223
Hourly Total	0	20	11	20	348	25	1	373	0	473	0	473	866
5:00 PM	0	6	3	6	93	7	0	100	0	123	0	123	229
5:15 PM	0	9	2	9	84	4	0	88	0	125	0	125	222
5:30 PM	0	6	0	6	85	5	0	90	0	107	0	107	203
5:45 PM	0	5	0	5	84	4	0	88	0	74	0	74	167
Hourly Total	0	26	5	26	346	20	0	366	0	429	0	429	821
Grand Total	0	52	22	52	1196	64	1	1260	1	1337	0	1338	2650
Approach %	0.0	100.0	-	-	94.9	5.1	-	-	0.1	99.9	-	-	-
Total %	0.0	2.0	-	2.0	45.1	2.4	-	47.5	0.0	50.5	-	50.5	-
Lights	0	52	-	52	1165	63	-	1228	1	1298	-	1299	2579
% Lights	-	100.0	-	100.0	97.4	98.4	-	97.5	100.0	97.1	-	97.1	97.3
Mediums	0	0	-	0	25	1	-	26	0	32	-	32	58
% Mediums	-	0.0	-	0.0	2.1	1.6	-	2.1	0.0	2.4	-	2.4	2.2
Articulated Trucks	0	0	-	0	6	0	-	6	0	7	-	7	13
% Articulated Trucks	-	0.0	-	0.0	0.5	0.0	-	0.5	0.0	0.5	-	0.5	0.5
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	22	-	-	-	1	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-



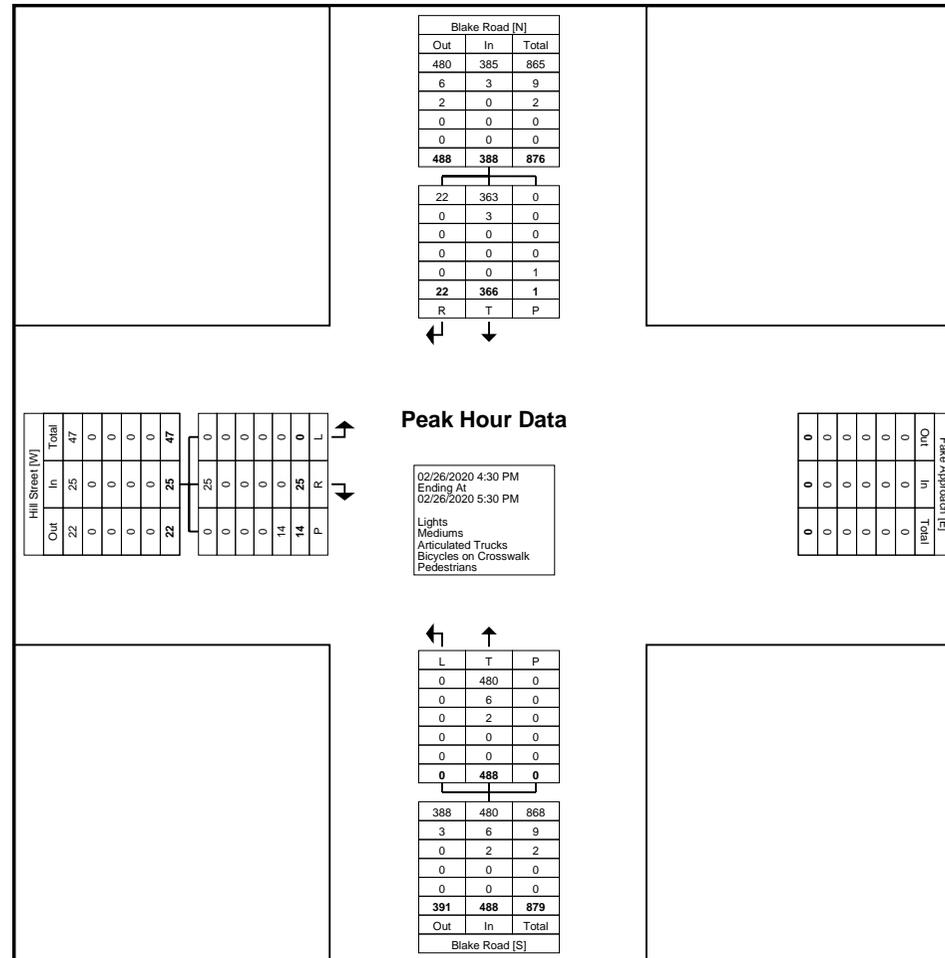
Turning Movement Data Plot





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

Start Time	Hill Street Eastbound				Blake Road Southbound				Blake Road Northbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
4:30 PM	0	7	5	7	93	7	0	100	0	120	0	120	227
4:45 PM	0	3	4	3	96	4	1	100	0	120	0	120	223
5:00 PM	0	6	3	6	93	7	0	100	0	123	0	123	229
5:15 PM	0	9	2	9	84	4	0	88	0	125	0	125	222
Total	0	25	14	25	366	22	1	388	0	488	0	488	901
Approach %	0.0	100.0	-	-	94.3	5.7	-	-	0.0	100.0	-	-	-
Total %	0.0	2.8	-	2.8	40.6	2.4	-	43.1	0.0	54.2	-	54.2	-
PHF	0.000	0.694	-	0.694	0.953	0.786	-	0.970	0.000	0.976	-	0.976	0.984
Lights	0	25	-	25	363	22	-	385	0	480	-	480	890
% Lights	-	100.0	-	100.0	99.2	100.0	-	99.2	-	98.4	-	98.4	98.8
Mediums	0	0	-	0	3	0	-	3	0	6	-	6	9
% Mediums	-	0.0	-	0.0	0.8	0.0	-	0.8	-	1.2	-	1.2	1.0
Articulated Trucks	0	0	-	0	0	0	-	0	0	2	-	2	2
% Articulated Trucks	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.4	-	0.4	0.2
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	0.0	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	14	-	-	-	1	-	-	-	0	-	-
% Pedestrians	-	-	100.0	-	-	-	100.0	-	-	-	-	-	-



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

### Turning Movement Data

Start Time	Westside Village Apartments Driveway Westbound					Arby's Driveway Eastbound					Blake Road Southbound					Blake Road Northbound					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	8	0	13	0	21	0	0	0	2	0	6	25	2	0	33	0	22	5	4	27	81
7:15 AM	8	0	8	2	16	0	0	0	0	0	10	59	0	0	69	0	36	9	1	45	130
7:30 AM	8	0	6	0	14	0	0	1	0	1	6	67	0	0	73	1	39	5	0	45	133
7:45 AM	6	0	6	0	12	0	0	0	0	0	2	60	0	0	62	1	74	1	1	76	150
Hourly Total	30	0	33	2	63	0	0	1	2	1	24	211	2	0	237	2	171	20	6	193	494
8:00 AM	5	1	5	0	11	4	0	0	0	4	4	82	0	0	86	1	67	0	0	68	169
8:15 AM	4	1	8	0	13	4	0	4	0	8	6	66	3	1	75	2	59	3	0	64	160
8:30 AM	8	0	3	2	11	1	1	1	0	3	9	60	0	0	69	1	50	5	0	56	139
8:45 AM	6	0	8	2	14	1	0	0	2	1	4	48	1	2	53	1	50	3	1	54	122
Hourly Total	23	2	24	4	49	10	1	5	2	16	23	256	4	3	283	5	226	11	1	242	590
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	4	1	13	0	18	7	6	8	1	21	8	65	4	1	77	3	100	7	1	110	226
4:15 PM	6	0	22	1	28	2	3	3	0	8	11	87	1	2	99	2	102	13	2	117	252
4:30 PM	5	3	10	2	18	9	2	3	0	14	9	85	0	2	94	2	119	5	0	126	252
4:45 PM	10	2	11	1	23	6	1	5	0	12	18	86	2	2	106	4	105	8	0	117	258
Hourly Total	25	6	56	4	87	24	12	19	1	55	46	323	7	7	376	11	426	33	3	470	988
5:00 PM	4	0	15	1	19	14	2	2	1	18	4	90	0	2	94	4	112	9	1	125	256
5:15 PM	7	0	10	3	17	4	2	4	2	10	7	75	2	1	84	2	119	3	1	124	235
5:30 PM	3	2	18	1	23	5	2	2	0	9	15	85	2	2	102	1	97	7	0	105	239
5:45 PM	4	2	12	0	18	5	0	6	1	11	13	76	0	1	89	4	67	5	1	76	194
Hourly Total	18	4	55	5	77	28	6	14	4	48	39	326	4	6	369	11	395	24	3	430	924
Grand Total	96	12	168	15	276	62	19	39	9	120	132	1116	17	16	1265	29	1218	88	13	1335	2996
Approach %	34.8	4.3	60.9	-	-	51.7	15.8	32.5	-	-	10.4	88.2	1.3	-	-	2.2	91.2	6.6	-	-	-
Total %	3.2	0.4	5.6	-	9.2	2.1	0.6	1.3	-	4.0	4.4	37.2	0.6	-	42.2	1.0	40.7	2.9	-	44.6	-
Lights	93	12	163	-	268	61	19	38	-	118	120	1090	16	-	1226	29	1183	83	-	1295	2907
% Lights	96.9	100.0	97.0	-	97.1	98.4	100.0	97.4	-	98.3	90.9	97.7	94.1	-	96.9	100.0	97.1	94.3	-	97.0	97.0
Mediums	3	0	5	-	8	1	0	1	-	2	12	22	0	-	34	0	28	5	-	33	77
% Mediums	3.1	0.0	3.0	-	2.9	1.6	0.0	2.6	-	1.7	9.1	2.0	0.0	-	2.7	0.0	2.3	5.7	-	2.5	2.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	4	1	-	5	0	7	0	-	7	12
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.4	5.9	-	0.4	0.0	0.6	0.0	-	0.5	0.4
Bicycles on Crosswalk	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	26.7	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	11	-	-	-	-	9	-	-	-	-	16	-	-	-	-	13	-	-
% Pedestrians	-	-	-	73.3	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



Kimley-Horn : Lisle (IL)  
 1001 Warrenville Road, Suite 350  
 Lisle, Illinois, United States 60532  
 331.481.7332 jack.olsson@kimley-horn.com

Count Name: 5\_Blake Road & Full Access Site  
 Driveway  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 3

### Turning Movement Peak Hour Data (7:45 AM)

Start Time	Westside Village Apartments Driveway Westbound					Arby's Driveway Eastbound					Blake Road Southbound					Blake Road Northbound					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	
7:45 AM	6	0	6	0	12	0	0	0	0	0	2	60	0	0	62	1	74	1	1	76	150
8:00 AM	5	1	5	0	11	4	0	0	0	4	4	82	0	0	86	1	67	0	0	68	169
8:15 AM	4	1	8	0	13	4	0	4	0	8	6	66	3	1	75	2	59	3	0	64	160
8:30 AM	8	0	3	2	11	1	1	1	0	3	9	60	0	0	69	1	50	5	0	56	139
Total	23	2	22	2	47	9	1	5	0	15	21	268	3	1	292	5	250	9	1	264	618
Approach %	48.9	4.3	46.8	-	-	60.0	6.7	33.3	-	-	7.2	91.8	1.0	-	-	1.9	94.7	3.4	-	-	-
Total %	3.7	0.3	3.6	-	7.6	1.5	0.2	0.8	-	2.4	3.4	43.4	0.5	-	47.2	0.8	40.5	1.5	-	42.7	-
PHF	0.719	0.500	0.688	-	0.904	0.563	0.250	0.313	-	0.469	0.583	0.817	0.250	-	0.849	0.625	0.845	0.450	-	0.868	0.914
Lights	21	2	22	-	45	9	1	5	-	15	16	256	2	-	274	5	239	8	-	252	586
% Lights	91.3	100.0	100.0	-	95.7	100.0	100.0	100.0	-	100.0	76.2	95.5	66.7	-	93.8	100.0	95.6	88.9	-	95.5	94.8
Mediums	2	0	0	-	2	0	0	0	-	0	5	10	0	-	15	0	10	1	-	11	28
% Mediums	8.7	0.0	0.0	-	4.3	0.0	0.0	0.0	-	0.0	23.8	3.7	0.0	-	5.1	0.0	4.0	11.1	-	4.2	4.5
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	2	1	-	3	0	1	0	-	1	4
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.7	33.3	-	1.0	0.0	0.4	0.0	-	0.4	0.6
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	50.0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	50.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



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

Start Time	Westside Village Apartments Driveway Westbound					Arby's Driveway Eastbound					Blake Road Southbound					Blake Road Northbound					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	
4:15 PM	6	0	22	1	28	2	3	3	0	8	11	87	1	2	99	2	102	13	2	117	252
4:30 PM	5	3	10	2	18	9	2	3	0	14	9	85	0	2	94	2	119	5	0	126	252
4:45 PM	10	2	11	1	23	6	1	5	0	12	18	86	2	2	106	4	105	8	0	117	258
5:00 PM	4	0	15	1	19	14	2	2	1	18	4	90	0	2	94	4	112	9	1	125	256
Total	25	5	58	5	88	31	8	13	1	52	42	348	3	8	393	12	438	35	3	485	1018
Approach %	28.4	5.7	65.9	-	-	59.6	15.4	25.0	-	-	10.7	88.5	0.8	-	-	2.5	90.3	7.2	-	-	-
Total %	2.5	0.5	5.7	-	8.6	3.0	0.8	1.3	-	5.1	4.1	34.2	0.3	-	38.6	1.2	43.0	3.4	-	47.6	-
PHF	0.625	0.417	0.659	-	0.786	0.554	0.667	0.650	-	0.722	0.583	0.967	0.375	-	0.927	0.750	0.920	0.673	-	0.962	0.986
Lights	25	5	57	-	87	30	8	13	-	51	40	341	3	-	384	12	429	35	-	476	998
% Lights	100.0	100.0	98.3	-	98.9	96.8	100.0	100.0	-	98.1	95.2	98.0	100.0	-	97.7	100.0	97.9	100.0	-	98.1	98.0
Mediums	0	0	1	-	1	1	0	0	-	1	2	6	0	-	8	0	7	0	-	7	17
% Mediums	0.0	0.0	1.7	-	1.1	3.2	0.0	0.0	-	1.9	4.8	1.7	0.0	-	2.0	0.0	1.6	0.0	-	1.4	1.7
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	0	2	0	-	2	3
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	0.5	0.0	-	0.4	0.3
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	20.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	4	-	-	-	-	1	-	-	-	-	8	-	-	-	-	3	-	-
% Pedestrians	-	-	-	80.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



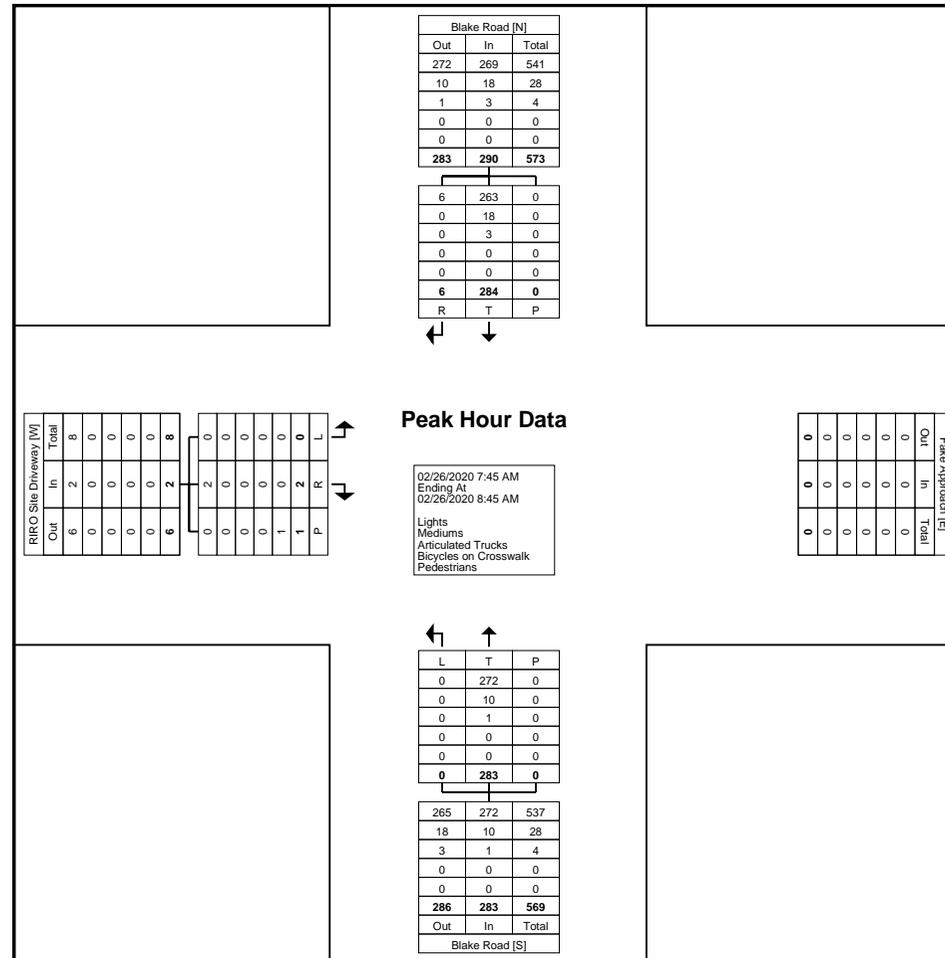






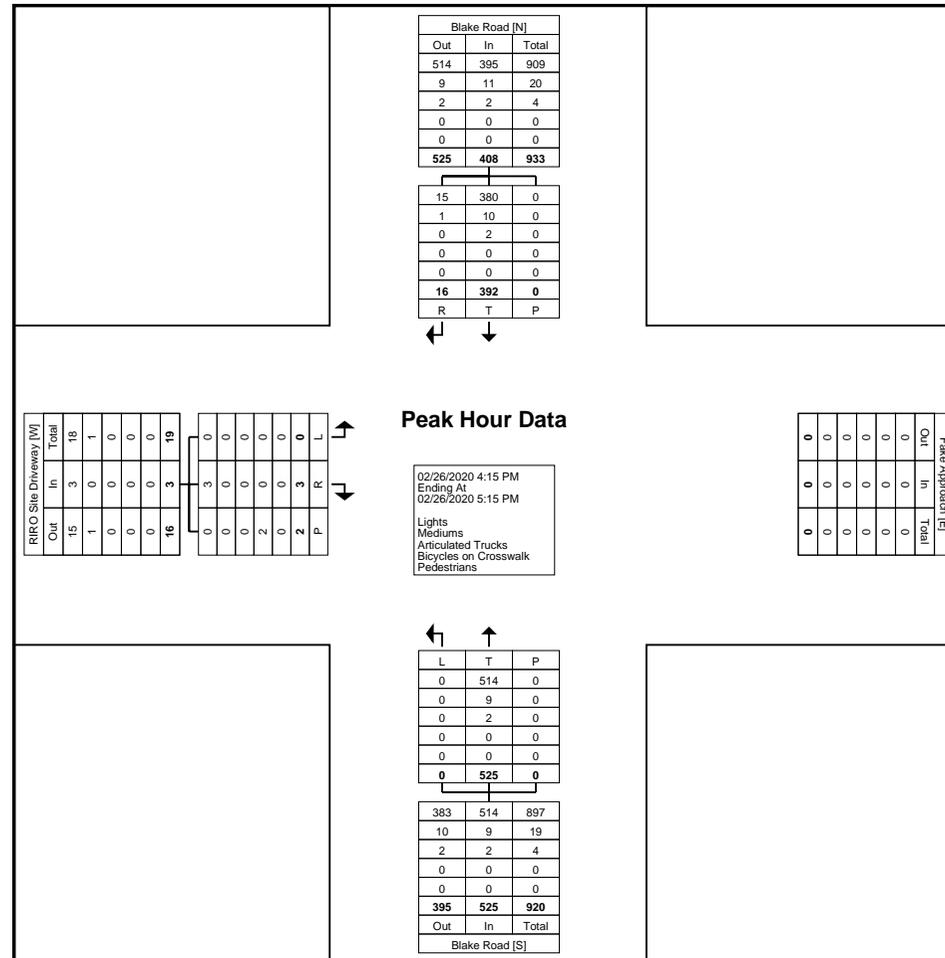
Kimley-Horn : Lisle (IL)  
 1001 Warrenville Road, Suite 350  
 Lisle, Illinois, United States 60532  
 331.481.7332 jack.olsson@kimley-horn.com

Count Name: 6\_Blake Road & RIRO Site  
 Driveway  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)





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

### Turning Movement Data

Start Time	2nd Street Westbound					2nd Street Eastbound					Blake Road Southbound					Blake Road Northbound					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	0	0	0	1	0	12	0	13	0	25	0	20	31	0	51	7	28	0	0	35	111
7:15 AM	0	0	0	1	0	23	0	26	0	49	0	42	37	0	79	14	31	0	0	45	173
7:30 AM	0	0	0	0	0	28	0	21	0	49	0	53	55	0	108	15	31	0	0	46	203
7:45 AM	0	0	0	0	0	35	0	13	0	48	0	46	64	0	110	23	58	0	0	81	239
Hourly Total	0	0	0	2	0	98	0	73	0	171	0	161	187	0	348	59	148	0	0	207	726
8:00 AM	0	0	0	0	0	24	0	20	0	44	0	67	40	0	107	21	54	0	0	75	226
8:15 AM	0	0	0	0	0	19	0	11	0	30	0	61	41	0	102	8	65	0	1	73	205
8:30 AM	0	0	0	0	0	11	0	18	0	29	0	48	34	0	82	11	41	0	0	52	163
8:45 AM	0	0	0	0	0	10	0	14	0	24	0	41	36	0	77	20	41	0	1	61	162
Hourly Total	0	0	0	0	0	64	0	63	0	127	0	217	151	0	368	60	201	0	2	261	756
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	0	38	0	25	2	63	2	56	24	0	82	20	103	0	1	123	268
4:15 PM	0	0	0	3	0	44	0	32	0	76	0	62	28	1	90	17	108	0	0	125	291
4:30 PM	0	0	0	1	0	61	0	28	0	89	0	72	34	2	106	18	120	0	0	138	333
4:45 PM	0	0	0	1	0	50	0	30	1	80	0	73	29	1	102	24	99	0	0	123	305
Hourly Total	0	0	0	5	0	193	0	115	3	308	2	263	115	4	380	79	430	0	1	509	1197
5:00 PM	0	0	0	1	0	61	0	29	0	90	0	76	28	0	104	24	119	0	0	143	337
5:15 PM	0	0	0	3	0	58	0	32	0	90	0	49	40	2	89	20	103	0	0	123	302
5:30 PM	0	0	0	2	0	36	0	27	0	63	0	73	26	0	99	19	110	0	1	129	291
5:45 PM	0	0	0	0	0	38	0	21	0	59	0	68	31	0	99	14	70	0	0	84	242
Hourly Total	0	0	0	6	0	193	0	109	0	302	0	266	125	2	391	77	402	0	1	479	1172
Grand Total	0	0	0	13	0	548	0	360	3	908	2	907	578	6	1487	275	1181	0	4	1456	3851
Approach %	0.0	0.0	0.0	-	-	60.4	0.0	39.6	-	-	0.1	61.0	38.9	-	-	18.9	81.1	0.0	-	-	-
Total %	0.0	0.0	0.0	-	0.0	14.2	0.0	9.3	-	23.6	0.1	23.6	15.0	-	38.6	7.1	30.7	0.0	-	37.8	-
Lights	0	0	0	-	0	532	0	345	-	877	2	882	557	-	1441	265	1146	0	-	1411	3729
% Lights	-	-	-	-	-	97.1	-	95.8	-	96.6	100.0	97.2	96.4	-	96.9	96.4	97.0	-	-	96.9	96.8
Mediums	0	0	0	-	0	15	0	12	-	27	0	22	20	-	42	8	29	0	-	37	106
% Mediums	-	-	-	-	-	2.7	-	3.3	-	3.0	0.0	2.4	3.5	-	2.8	2.9	2.5	-	-	2.5	2.8
Articulated Trucks	0	0	0	-	0	1	0	3	-	4	0	3	1	-	4	2	6	0	-	8	16
% Articulated Trucks	-	-	-	-	-	0.2	-	0.8	-	0.4	0.0	0.3	0.2	-	0.3	0.7	0.5	-	-	0.5	0.4
Bicycles on Crosswalk	-	-	-	4	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	30.8	-	-	-	-	0.0	-	-	-	-	16.7	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	9	-	-	-	-	3	-	-	-	-	5	-	-	-	-	4	-	-
% Pedestrians	-	-	-	69.2	-	-	-	-	100.0	-	-	-	-	83.3	-	-	-	-	100.0	-	-



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Count Name: 7\_Blake Road & 2nd Street  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 3

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

Start Time	2nd Street Westbound					2nd Street Eastbound					Blake Road Southbound					Blake Road Northbound					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	
7:30 AM	0	0	0	0	0	28	0	21	0	49	0	53	55	0	108	15	31	0	0	46	203
7:45 AM	0	0	0	0	0	35	0	13	0	48	0	46	64	0	110	23	58	0	0	81	239
8:00 AM	0	0	0	0	0	24	0	20	0	44	0	67	40	0	107	21	54	0	0	75	226
8:15 AM	0	0	0	0	0	19	0	11	0	30	0	61	41	0	102	8	65	0	1	73	205
Total	0	0	0	0	0	106	0	65	0	171	0	227	200	0	427	67	208	0	1	275	873
Approach %	0.0	0.0	0.0	-	-	62.0	0.0	38.0	-	-	0.0	53.2	46.8	-	-	24.4	75.6	0.0	-	-	-
Total %	0.0	0.0	0.0	-	0.0	12.1	0.0	7.4	-	19.6	0.0	26.0	22.9	-	48.9	7.7	23.8	0.0	-	31.5	-
PHF	0.000	0.000	0.000	-	0.000	0.757	0.000	0.774	-	0.872	0.000	0.847	0.781	-	0.970	0.728	0.800	0.000	-	0.849	0.913
Lights	0	0	0	-	0	101	0	62	-	163	0	218	196	-	414	66	199	0	-	265	842
% Lights	-	-	-	-	-	95.3	-	95.4	-	95.3	-	96.0	98.0	-	97.0	98.5	95.7	-	-	96.4	96.4
Mediums	0	0	0	-	0	4	0	3	-	7	0	7	4	-	11	1	7	0	-	8	26
% Mediums	-	-	-	-	-	3.8	-	4.6	-	4.1	-	3.1	2.0	-	2.6	1.5	3.4	-	-	2.9	3.0
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	2	0	-	2	0	2	0	-	2	5
% Articulated Trucks	-	-	-	-	-	0.9	-	0.0	-	0.6	-	0.9	0.0	-	0.5	0.0	1.0	-	-	0.7	0.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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

Start Time	2nd Street Westbound					2nd Street Eastbound					Blake Road Southbound					Blake Road Northbound					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	
4:30 PM	0	0	0	1	0	61	0	28	0	89	0	72	34	2	106	18	120	0	0	138	333
4:45 PM	0	0	0	1	0	50	0	30	1	80	0	73	29	1	102	24	99	0	0	123	305
5:00 PM	0	0	0	1	0	61	0	29	0	90	0	76	28	0	104	24	119	0	0	143	337
5:15 PM	0	0	0	3	0	58	0	32	0	90	0	49	40	2	89	20	103	0	0	123	302
Total	0	0	0	6	0	230	0	119	1	349	0	270	131	5	401	86	441	0	0	527	1277
Approach %	0.0	0.0	0.0	-	-	65.9	0.0	34.1	-	-	0.0	67.3	32.7	-	-	16.3	83.7	0.0	-	-	-
Total %	0.0	0.0	0.0	-	0.0	18.0	0.0	9.3	-	27.3	0.0	21.1	10.3	-	31.4	6.7	34.5	0.0	-	41.3	-
PHF	0.000	0.000	0.000	-	0.000	0.943	0.000	0.930	-	0.969	0.000	0.888	0.819	-	0.946	0.896	0.919	0.000	-	0.921	0.947
Lights	0	0	0	-	0	224	0	119	-	343	0	267	127	-	394	83	434	0	-	517	1254
% Lights	-	-	-	-	-	97.4	-	100.0	-	98.3	-	98.9	96.9	-	98.3	96.5	98.4	-	-	98.1	98.2
Mediums	0	0	0	-	0	6	0	0	-	6	0	3	3	-	6	3	6	0	-	9	21
% Mediums	-	-	-	-	-	2.6	-	0.0	-	1.7	-	1.1	2.3	-	1.5	3.5	1.4	-	-	1.7	1.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	1	-	1	0	1	0	-	1	2
% Articulated Trucks	-	-	-	-	-	0.0	-	0.0	-	0.0	-	0.0	0.8	-	0.2	0.0	0.2	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	16.7	-	-	-	-	0.0	-	-	-	-	20.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	5	-	-	-	-	1	-	-	-	-	4	-	-	-	-	0	-	-
% Pedestrians	-	-	-	83.3	-	-	-	-	100.0	-	-	-	-	80.0	-	-	-	-	-	-	-



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Count Name: 8\_Excelsior Boulevard &  
 Milwaukee Street/Jackson Avenue  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 1

### Turning Movement Data

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Jackson Avenue Southbound					Milwaukee Street Northbound					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	3	58	8	0	69	87	113	17	0	217	1	4	33	0	38	2	0	5	0	7	331
7:15 AM	10	93	9	1	112	80	124	3	0	207	2	1	29	0	32	1	1	9	0	11	362
7:30 AM	5	115	8	0	128	94	144	11	0	249	3	1	43	0	47	8	3	11	0	22	446
7:45 AM	17	140	21	0	178	82	140	5	0	227	3	3	46	0	52	5	4	23	0	32	489
Hourly Total	35	406	46	1	487	343	521	36	0	900	9	9	151	0	169	16	8	48	0	72	1628
8:00 AM	10	115	7	0	132	97	163	5	0	265	5	1	35	1	41	7	7	12	0	26	464
8:15 AM	8	110	8	0	126	66	153	9	0	228	1	0	40	3	41	8	3	10	0	21	416
8:30 AM	4	121	8	0	133	87	135	3	0	225	1	1	31	0	33	7	3	18	0	28	419
8:45 AM	9	95	9	0	113	73	123	2	0	198	3	2	22	2	27	7	2	10	0	19	357
Hourly Total	31	441	32	0	504	323	574	19	0	916	10	4	128	6	142	29	15	50	0	94	1656
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	2	157	6	1	165	18	158	1	0	177	21	1	81	0	103	17	2	22	1	41	486
4:15 PM	3	154	4	1	161	35	178	1	0	214	15	2	91	0	108	7	6	27	1	40	523
4:30 PM	8	139	3	2	150	20	204	1	0	225	34	1	93	1	128	10	8	34	0	52	555
4:45 PM	8	159	3	0	170	26	211	1	0	238	13	3	98	0	114	12	6	40	0	58	580
Hourly Total	21	609	16	4	646	99	751	4	0	854	83	7	363	1	453	46	22	123	2	191	2144
5:00 PM	2	135	8	3	145	37	219	1	0	257	24	4	106	1	134	6	4	28	0	38	574
5:15 PM	5	188	6	0	199	36	206	1	0	243	14	5	80	0	99	10	7	22	1	39	580
5:30 PM	10	107	7	1	124	33	185	1	0	219	13	2	63	0	78	6	3	21	0	30	451
5:45 PM	6	116	8	1	130	20	148	1	0	169	9	2	50	1	61	7	0	15	0	22	382
Hourly Total	23	546	29	5	598	126	758	4	0	888	60	13	299	2	372	29	14	86	1	129	1987
Grand Total	110	2002	123	10	2235	891	2604	63	0	3558	162	33	941	9	1136	120	59	307	3	486	7415
Approach %	4.9	89.6	5.5	-	-	25.0	73.2	1.8	-	-	14.3	2.9	82.8	-	-	24.7	12.1	63.2	-	-	-
Total %	1.5	27.0	1.7	-	30.1	12.0	35.1	0.8	-	48.0	2.2	0.4	12.7	-	15.3	1.6	0.8	4.1	-	6.6	-
Lights	105	1923	119	-	2147	877	2524	62	-	3463	161	32	922	-	1115	114	57	304	-	475	7200
% Lights	95.5	96.1	96.7	-	96.1	98.4	96.9	98.4	-	97.3	99.4	97.0	98.0	-	98.2	95.0	96.6	99.0	-	97.7	97.1
Mediums	2	64	4	-	70	12	63	0	-	75	0	1	17	-	18	2	1	3	-	6	169
% Mediums	1.8	3.2	3.3	-	3.1	1.3	2.4	0.0	-	2.1	0.0	3.0	1.8	-	1.6	1.7	1.7	1.0	-	1.2	2.3
Articulated Trucks	3	15	0	-	18	2	17	1	-	20	1	0	2	-	3	4	1	0	-	5	46
% Articulated Trucks	2.7	0.7	0.0	-	0.8	0.2	0.7	1.6	-	0.6	0.6	0.0	0.2	-	0.3	3.3	1.7	0.0	-	1.0	0.6
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	66.7	-	-
Pedestrians	-	-	-	10	-	-	-	-	0	-	-	-	-	9	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	33.3	-	-

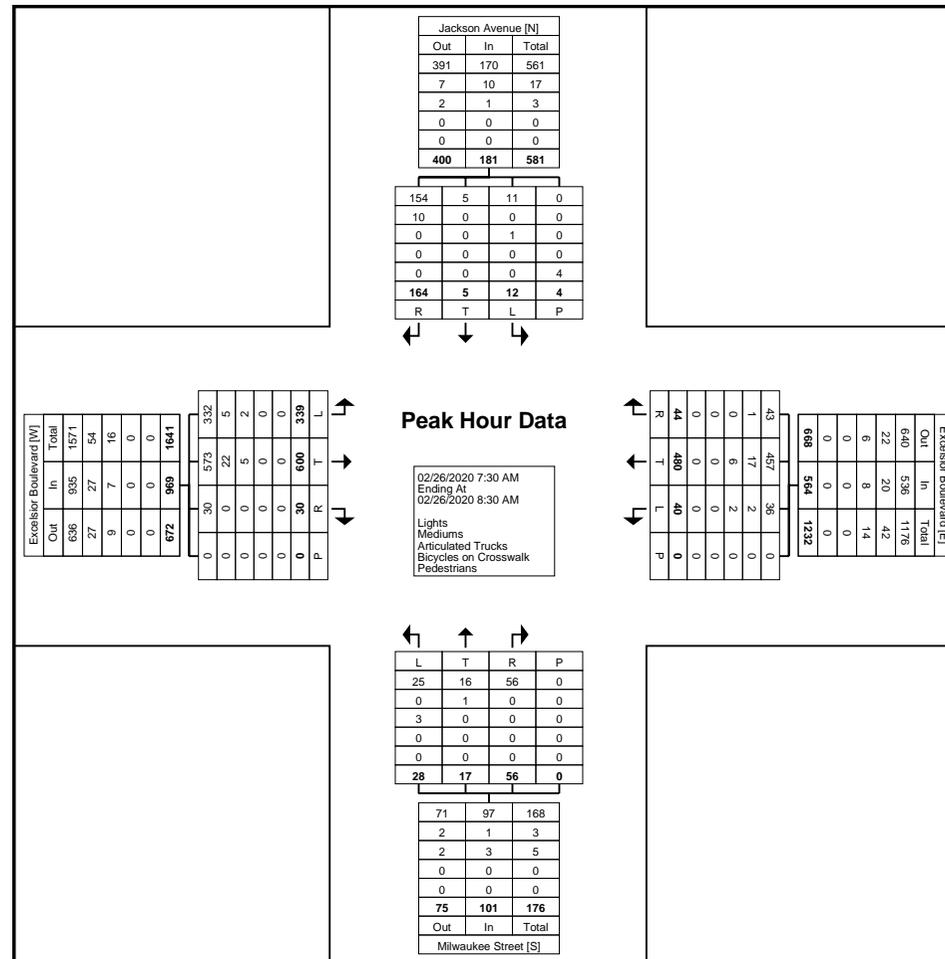


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Count Name: 8\_Excelsior Boulevard &  
 Milwaukee Street/Jackson Avenue  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 3

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

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Jackson Avenue Southbound					Milwaukee Street Northbound					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	
7:30 AM	5	115	8	0	128	94	144	11	0	249	3	1	43	0	47	8	3	11	0	22	446
7:45 AM	17	140	21	0	178	82	140	5	0	227	3	3	46	0	52	5	4	23	0	32	489
8:00 AM	10	115	7	0	132	97	163	5	0	265	5	1	35	1	41	7	7	12	0	26	464
8:15 AM	8	110	8	0	126	66	153	9	0	228	1	0	40	3	41	8	3	10	0	21	416
Total	40	480	44	0	564	339	600	30	0	969	12	5	164	4	181	28	17	56	0	101	1815
Approach %	7.1	85.1	7.8	-	-	35.0	61.9	3.1	-	-	6.6	2.8	90.6	-	-	27.7	16.8	55.4	-	-	-
Total %	2.2	26.4	2.4	-	31.1	18.7	33.1	1.7	-	53.4	0.7	0.3	9.0	-	10.0	1.5	0.9	3.1	-	5.6	-
PHF	0.588	0.857	0.524	-	0.792	0.874	0.920	0.682	-	0.914	0.600	0.417	0.891	-	0.870	0.875	0.607	0.609	-	0.789	0.928
Lights	36	457	43	-	536	332	573	30	-	935	11	5	154	-	170	25	16	56	-	97	1738
% Lights	90.0	95.2	97.7	-	95.0	97.9	95.5	100.0	-	96.5	91.7	100.0	93.9	-	93.9	89.3	94.1	100.0	-	96.0	95.8
Mediums	2	17	1	-	20	5	22	0	-	27	0	0	10	-	10	0	1	0	-	1	58
% Mediums	5.0	3.5	2.3	-	3.5	1.5	3.7	0.0	-	2.8	0.0	0.0	6.1	-	5.5	0.0	5.9	0.0	-	1.0	3.2
Articulated Trucks	2	6	0	-	8	2	5	0	-	7	1	0	0	-	1	3	0	0	-	3	19
% Articulated Trucks	5.0	1.3	0.0	-	1.4	0.6	0.8	0.0	-	0.7	8.3	0.0	0.0	-	0.6	10.7	0.0	0.0	-	3.0	1.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



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

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Count Name: 8\_Excelsior Boulevard &  
 Milwaukee Street/Jackson Avenue  
 Site Code:  
 Start Date: 02/26/2020  
 Page No: 5

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

Start Time	Excelsior Boulevard Westbound					Excelsior Boulevard Eastbound					Jackson Avenue Southbound					Milwaukee Street Northbound					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	
4:30 PM	8	139	3	2	150	20	204	1	0	225	34	1	93	1	128	10	8	34	0	52	555
4:45 PM	8	159	3	0	170	26	211	1	0	238	13	3	98	0	114	12	6	40	0	58	580
5:00 PM	2	135	8	3	145	37	219	1	0	257	24	4	106	1	134	6	4	28	0	38	574
5:15 PM	5	188	6	0	199	36	206	1	0	243	14	5	80	0	99	10	7	22	1	39	580
Total	23	621	20	5	664	119	840	4	0	963	85	13	377	2	475	38	25	124	1	187	2289
Approach %	3.5	93.5	3.0	-	-	12.4	87.2	0.4	-	-	17.9	2.7	79.4	-	-	20.3	13.4	66.3	-	-	-
Total %	1.0	27.1	0.9	-	29.0	5.2	36.7	0.2	-	42.1	3.7	0.6	16.5	-	20.8	1.7	1.1	5.4	-	8.2	-
PHF	0.719	0.826	0.625	-	0.834	0.804	0.959	1.000	-	0.937	0.625	0.650	0.889	-	0.886	0.792	0.781	0.775	-	0.806	0.987
Lights	23	607	20	-	650	119	820	4	-	943	85	13	376	-	474	38	24	122	-	184	2251
% Lights	100.0	97.7	100.0	-	97.9	100.0	97.6	100.0	-	97.9	100.0	100.0	99.7	-	99.8	100.0	96.0	98.4	-	98.4	98.3
Mediums	0	11	0	-	11	0	16	0	-	16	0	0	0	-	0	0	0	2	-	2	29
% Mediums	0.0	1.8	0.0	-	1.7	0.0	1.9	0.0	-	1.7	0.0	0.0	0.0	-	0.0	0.0	0.0	1.6	-	1.1	1.3
Articulated Trucks	0	3	0	-	3	0	4	0	-	4	0	0	1	-	1	0	1	0	-	1	9
% Articulated Trucks	0.0	0.5	0.0	-	0.5	0.0	0.5	0.0	-	0.4	0.0	0.0	0.3	-	0.2	0.0	4.0	0.0	-	0.5	0.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	100.0	-	-
Pedestrians	-	-	-	5	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	0.0	-	-



1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.2	0.0	0.0	0.0	4.0	0.3	4.0	0.1	0.3	3.9
Total Del/Veh (s)	38.9	7.7	5.1	53.8	18.0	15.6	48.8	53.6	2.2	51.5	63.9	1.9

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	19.3

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	9.0	3.7	3.4	8.1	0.4	0.2	20.1	29.7	4.8	13.7	6.6	2.5

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	1.8	1.4	9.3	1.4

4: Blake Road & Excelsior Boulevard 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	2.7	0.2	2.7	3.6	0.3	0.2	0.0	0.0	0.0
Total Del/Veh (s)	38.7	13.3	3.2	46.2	20.0	3.7	41.6	33.7	12.5	40.4	34.5	23.6

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	23.1

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	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)	7.4	3.1	7.7	5.3	3.6	3.9	1.2	1.1	2.7	0.4	0.2	1.2

6: Blake Road & RIRO Performance by movement

Movement	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.2	1.6	1.4	1.0

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	18.0	10.7	23.1	6.8	13.4	5.1	12.5

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Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	35.5

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	301	362	228	187	156	252	242	65	56	61	31
Average Queue (ft)	185	230	102	70	37	107	118	21	12	15	5
95th Queue (ft)	280	319	208	166	101	212	218	53	37	45	21
Link Distance (ft)		717	717	717		1943	1943		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)					0	4					
Queuing Penalty (veh)					0	2					

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	34	4	40	4	29	31
Average Queue (ft)	6	0	10	0	11	8
95th Queue (ft)	22	3	29	3	29	25
Link Distance (ft)		1943		303	111	208
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	215		200			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Excelsior Boulevard & RIRO

Movement	SB
Directions Served	R
Maximum Queue (ft)	23
Average Queue (ft)	3
95th Queue (ft)	15
Link Distance (ft)	116
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	42	63	180	206	117	105	224	197	62	194	224	93
Average Queue (ft)	11	27	86	96	25	45	129	98	27	97	42	26
95th Queue (ft)	32	57	162	178	71	88	203	185	55	175	112	66
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)					0	0				1		
Queuing Penalty (veh)					0	0				1		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	122	132	170	206
Average Queue (ft)	48	67	68	100
95th Queue (ft)	96	112	128	174
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	39	65	23	30
Average Queue (ft)	13	28	2	4
95th Queue (ft)	38	55	12	20
Link Distance (ft)	99	110		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			50	50
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 6: Blake Road & RIRO

Movement

Directions Served  
Maximum Queue (ft)  
Average Queue (ft)  
95th Queue (ft)  
Link Distance (ft)  
Upstream Blk Time (%)  
Queuing Penalty (veh)  
Storage Bay Dist (ft)  
Storage Blk Time (%)  
Queuing Penalty (veh)

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	152	206	89	76	93	161	144
Average Queue (ft)	17	104	41	28	32	76	48
95th Queue (ft)	72	168	78	63	73	132	107
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	1				1	
Queuing Penalty (veh)	0	1				0	

Network Summary

Network wide Queuing Penalty: 4

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.0	0.0	0.0	3.9	0.5	3.9	0.3	1.0	3.5
Total Del/Veh (s)	58.8	12.2	9.7	69.0	27.2	26.1	49.4	58.4	2.5	51.1	56.7	2.8

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	19.6

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0
Total Del/Veh (s)	14.7	7.0	7.2	29.1	0.7	0.6	69.9	28.6	54.3	14.4	5.8

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	3.5	2.1	1.6	6.8	3.0

4: Blake Road & Excelsior Boulevard 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	2.6	0.3	2.5	3.5	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	53.3	24.3	8.6	53.1	20.2	6.8	54.7	46.6	24.5	56.6	48.1	35.7

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	29.1

5: Blake Road & Full Access Driveway 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	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.6	16.2	6.1	18.0	18.8	8.1	5.1	1.4	1.0	5.6	0.6	0.2

5: Blake Road & Full Access Driveway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.3

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6: Blake Road & RIRO Performance by movement

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Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.2	0.3	1.7	1.4	0.9

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.4	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	21.8	15.5	28.3	9.5	16.6	8.2	14.4

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Total Network Performance

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Denied Del/Veh (s)	0.9
Total Del/Veh (s)	46.5

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	128	168	389	355	174	379	383	81	66	130	48
Average Queue (ft)	26	94	205	176	24	249	264	29	20	72	13
95th Queue (ft)	96	156	345	313	88	363	369	68	53	119	42
Link Distance (ft)		717	717	717		1943	1943		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)	20										
Queuing Penalty (veh)	5										

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	L	TR	LTR	LTR
Maximum Queue (ft)	68	21	3	41	7	63	93
Average Queue (ft)	16	1	0	10	0	14	30
95th Queue (ft)	44	11	2	31	4	42	69
Link Distance (ft)		1943	1943		303	111	208
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	215			200			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	60	211	215	54
Average Queue (ft)	5	30	42	18
95th Queue (ft)	35	122	142	43
Link Distance (ft)		303	303	116
Upstream Blk Time (%)	0			
Queuing Penalty (veh)		1	0	
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	4			
Queuing Penalty (veh)	33			

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	134	149	302	299	204	135	268	236	142	165	195	153
Average Queue (ft)	47	64	235	247	140	63	172	143	65	86	94	62
95th Queue (ft)	100	118	323	330	263	113	245	220	115	149	163	130
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)	0	0	16	18	1							
Queuing Penalty (veh)	0	0	64	72	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				21	1		0			0	0	
Queuing Penalty (veh)				51	3		0			0	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	162	183	192	245
Average Queue (ft)	79	92	78	119
95th Queue (ft)	142	153	147	196
Link Distance (ft)			275	275
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	0	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	69	98	29	15	52
Average Queue (ft)	33	40	3	0	16
95th Queue (ft)	60	74	17	5	44
Link Distance (ft)	99	110		275	
Upstream Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)			50		50
Storage Blk Time (%)					0
Queuing Penalty (veh)					1

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	176	262	150	207	194	198	181
Average Queue (ft)	35	130	53	81	88	95	75
95th Queue (ft)	125	216	106	159	164	168	155
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	4	0	0		2	
Queuing Penalty (veh)	0	4	0	0		0	

Network Summary

Network wide Queuing Penalty: 238
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1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.2	0.0	0.0	0.0	4.0	0.3	4.0	0.2	0.7	3.8
Total Del/Veh (s)	39.0	7.3	4.2	56.1	19.2	19.1	43.9	59.4	2.1	40.9	65.6	2.0

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	19.6

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	4.1	0.0
Total Del/Veh (s)	10.9	3.5	4.0	7.9	0.4	0.2	18.5	23.0	6.3	19.2	6.4	2.5

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	0.9	1.8	1.5	3.5	1.4

4: Blake Road & Excelsior Boulevard 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	2.8	0.2	2.7	3.5	0.3	0.2	0.0	0.0	0.0
Total Del/Veh (s)	41.8	14.0	3.2	49.9	21.0	4.2	40.8	33.3	11.5	41.5	35.7	24.0

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	23.8

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	9.2	4.0	9.5	7.9	3.8	3.6	1.3	1.2	3.4	0.4	0.2	1.3

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	0.2	1.6	1.5	1.0

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.1	0.0	0.2	0.2	0.2
Total Del/Veh (s)	18.4	11.7	24.7	6.9	14.5	6.2	13.2

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Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	36.1

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	344	377	219	194	160	229	238	71	49	52	31
Average Queue (ft)	183	234	99	67	39	121	138	27	13	14	7
95th Queue (ft)	303	339	196	157	99	210	223	63	41	44	27
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)		0			0	5					
Queuing Penalty (veh)		0			0	2					

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	48	42	42	23	21
Average Queue (ft)	10	11	14	4	7
95th Queue (ft)	32	32	34	19	21
Link Distance (ft)			111	209	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	215	200			100
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Excelsior Boulevard & RIRO

Movement	SB
Directions Served	R
Maximum Queue (ft)	23
Average Queue (ft)	4
95th Queue (ft)	17
Link Distance (ft)	116
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	61	69	186	216	182	110	239	197	69	194	171	100
Average Queue (ft)	10	24	86	100	32	48	139	109	31	111	44	27
95th Queue (ft)	33	52	169	186	97	94	205	186	61	188	116	73
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	1	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				1	0		0			2		
Queuing Penalty (veh)				1	0		0			1		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	114	119	133	181
Average Queue (ft)	49	68	63	98
95th Queue (ft)	95	111	114	168
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	52	65	22	4	35
Average Queue (ft)	14	28	1	0	7
95th Queue (ft)	41	55	9	3	27
Link Distance (ft)	99	110		275	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50		50
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	22
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	165	203	98	78	88	159	144
Average Queue (ft)	25	108	41	30	33	77	53
95th Queue (ft)	98	176	75	65	70	138	114
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	1				1	
Queuing Penalty (veh)	0	1				0	

Network Summary

Network wide Queuing Penalty: 7
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1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.2	0.0	0.0	0.0	3.9	0.6	3.8	0.3	0.9	3.4
Total Del/Veh (s)	53.2	14.9	8.3	64.2	27.5	27.3	48.2	56.6	2.7	53.3	59.1	2.9

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	20.5

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	4.1	0.1
Total Del/Veh (s)	16.4	8.3	11.1	31.3	0.7	0.5	121.1	49.4	91.5	8.9	7.0

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	4.8	2.1	1.4	7.0	3.8

4: Blake Road & Excelsior Boulevard 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	2.6	0.4	2.6	3.4	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	54.8	25.7	9.4	57.0	21.4	6.9	56.6	42.8	26.1	57.8	48.1	35.5

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	30.1

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.4	0.2	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.3	22.7	6.4	18.2	18.1	7.4	4.1	1.4	1.2	5.8	0.6	0.3

5: Blake Road & Full Access Driveway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.5

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6: Blake Road & RIRO Performance by movement

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Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	0.3	1.7	1.4	0.9

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.2	0.2	0.1
Total Del/Veh (s)	19.5	13.5	31.3	10.6	16.7	9.0	14.6

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Total Network Performance

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Denied Del/Veh (s)	0.9
Total Del/Veh (s)	48.6

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T	
Maximum Queue (ft)	144	166	457	416	174	390	401	100	87	24	153	49	
Average Queue (ft)	22	85	238	202	36	257	273	34	23	1	69	15	
95th Queue (ft)	80	142	380	358	117	369	385	73	58	18	125	43	
Link Distance (ft)		717	717	717		1944	1944		317		537	537	
Upstream Blk Time (%)													
Queuing Penalty (veh)													
Storage Bay Dist (ft)	500				150				150				150
Storage Blk Time (%)						21							
Queuing Penalty (veh)						5							

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	52	49	4	74	41	44
Average Queue (ft)	21	9	0	20	10	19
95th Queue (ft)	47	32	3	58	32	38
Link Distance (ft)			303	111	209	
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)	215	200				100
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	WB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	74	263	271	13	48
Average Queue (ft)	12	57	75	0	18
95th Queue (ft)	57	181	209	10	42
Link Distance (ft)		303	303		116
Upstream Blk Time (%)	0		0		
Queuing Penalty (veh)	0		0		
Storage Bay Dist (ft)	50			65	
Storage Blk Time (%)	7		0		
Queuing Penalty (veh)	60		0		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	114	134	308	302	204	174	272	230	123	180	218	162
Average Queue (ft)	48	64	251	261	152	69	179	153	56	94	93	61
95th Queue (ft)	96	113	334	337	270	133	257	223	98	163	165	134
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			20	22	1							
Queuing Penalty (veh)			79	86	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				24	1		0			1	0	
Queuing Penalty (veh)				61	4		0			2	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	149	178	224	223
Average Queue (ft)	79	97	93	124
95th Queue (ft)	142	156	177	199
Link Distance (ft)			275	275
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			0	0
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	1	1	
Queuing Penalty (veh)	0	1	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T
Maximum Queue (ft)	93	85	29	19	45	23
Average Queue (ft)	36	43	3	1	15	1
95th Queue (ft)	68	77	18	9	42	17
Link Distance (ft)	99	110		275		310
Upstream Blk Time (%)	1	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)			50		50	
Storage Blk Time (%)					0	
Queuing Penalty (veh)					1	

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	43
Average Queue (ft)	14
95th Queue (ft)	40
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	171	226	125	186	206	183	215
Average Queue (ft)	26	124	52	86	97	94	76
95th Queue (ft)	101	203	99	156	171	164	154
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	3		0		2	
Queuing Penalty (veh)	0	4		0		0	

Network Summary

Network wide Queuing Penalty: 305
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1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.2	0.0	0.0	0.0	3.9	0.3	4.0	0.2	0.6	3.8
Total Del/Veh (s)	41.7	8.4	4.6	55.7	20.3	19.5	49.1	50.5	2.2	48.3	45.8	2.1

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	20.8

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	4.0	0.0
Total Del/Veh (s)	13.7	4.1	4.2	8.0	0.5	0.3	22.5	31.7	6.0	20.1	5.5	2.8

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.1	1.9	1.5	5.3	1.5

4: Blake Road & Excelsior Boulevard 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	2.7	0.2	2.6	3.5	0.3	0.2	0.0	0.0	0.0
Total Del/Veh (s)	35.8	15.3	3.6	46.6	22.7	4.3	40.9	36.2	16.7	38.8	37.8	25.3

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	25.2

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	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)	9.4	4.5	10.2	10.6	4.2	5.1	1.4	1.1	3.1	0.4	0.3	1.4

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	0.2	1.6	1.3	1.1

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.3	0.2	4.0	0.0	0.0	0.0	3.5	0.2	0.2
Total Del/Veh (s)	20.7	20.4	14.7	20.4	22.3	5.1	30.3	11.4	6.1	37.4	17.1	8.5

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7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	16.4

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Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	38.8

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	332	366	260	208	138	241	250	82	53	44	39
Average Queue (ft)	198	248	110	76	35	130	143	25	17	13	6
95th Queue (ft)	303	348	216	168	88	219	229	62	46	40	26
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)					0			6			
Queuing Penalty (veh)					0			2			

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	L	TR	LTR	LT	R
Maximum Queue (ft)	52	15	45	4	33	31	21
Average Queue (ft)	14	1	8	0	13	6	6
95th Queue (ft)	39	8	27	3	32	23	19
Link Distance (ft)		1944		303	111	209	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	215		200		100		
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	SB
Directions Served	T	R
Maximum Queue (ft)	10	23
Average Queue (ft)	1	4
95th Queue (ft)	7	17
Link Distance (ft)	303	116
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	63	76	225	242	199	112	248	215	65	187	150	152
Average Queue (ft)	13	29	99	113	39	49	143	110	32	104	51	48
95th Queue (ft)	38	62	192	215	122	96	210	188	57	176	121	111
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	1	0							
Queuing Penalty (veh)			1	2	0							
Storage Bay Dist (ft)					185	280		350		175		
Storage Blk Time (%)				1	0		0			1	0	
Queuing Penalty (veh)				1	0		0			1	0	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	128	133	164	203
Average Queue (ft)	62	80	90	118
95th Queue (ft)	114	124	144	180
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	44	66	29	31	4
Average Queue (ft)	13	30	3	5	0
95th Queue (ft)	38	54	18	23	3
Link Distance (ft)	99	110			310
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			50	50	
Storage Blk Time (%)				0	
Queuing Penalty (veh)				0	

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	173	227	162	67	92	132	144	65	187	160
Average Queue (ft)	34	122	63	13	45	45	55	11	93	66
95th Queue (ft)	122	199	117	45	81	97	109	41	157	129
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	3	3	0					1	
Queuing Penalty (veh)	0	3	0	0					0	

Network Summary

Network wide Queuing Penalty: 12
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1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.0	0.0	0.0	3.8	0.7	3.9	0.4	0.9	3.4
Total Del/Veh (s)	59.7	15.8	16.0	70.1	29.6	30.9	52.4	61.6	2.9	51.6	61.3	3.1

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	22.1

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.3	4.1	0.1
Total Del/Veh (s)	18.3	8.7	9.0	34.9	0.8	0.3	139.5	105.8	78.9	9.0	7.6

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.8	2.1	1.5	7.4	4.4

4: Blake Road & Excelsior Boulevard 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	2.5	0.4	2.5	3.3	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	59.2	27.0	10.4	56.0	20.8	8.7	56.9	46.2	29.3	59.2	51.0	40.8

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	31.7

5: Blake Road & Full Access Driveway 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	0.3	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	17.2	22.2	8.5	26.8	23.9	12.5	4.9	1.6	1.4	6.9	0.7	0.2

5: Blake Road & Full Access Driveway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.9

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	0.4	1.6	1.4	0.9

7: Blake Road & 2nd Street Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	0.4	0.2	0.1	3.8	0.0	0.0	0.0	3.0	0.3	0.3
Total Del/Veh (s)	24.3	25.1	20.4	26.3	28.1	7.5	41.4	17.7	14.4	42.1	19.8	10.7

7: Blake Road & 2nd Street Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.4

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	53.2

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	151	283	508	481	174	412	422	100	90	58	174	58
Average Queue (ft)	37	114	259	219	37	287	298	34	25	3	77	16
95th Queue (ft)	118	246	440	397	125	401	407	73	64	34	140	46
Link Distance (ft)		717	717	717		1944	1944		317		537	537
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	500				150			150		150		
Storage Blk Time (%)						24				0		
Queuing Penalty (veh)						6				0		

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	NB	SB	SB
Directions Served	L	T	TR	L	LTR	LT	R
Maximum Queue (ft)	75	17	40	37	96	53	51
Average Queue (ft)	24	1	1	9	27	11	19
95th Queue (ft)	54	12	18	29	74	36	39
Link Distance (ft)		1944	1944		111	209	
Upstream Blk Time (%)					2		
Queuing Penalty (veh)					0		
Storage Bay Dist (ft)	215			200			100
Storage Blk Time (%)						0	
Queuing Penalty (veh)						0	

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	WB	SB
Directions Served	T	T	T	R	R
Maximum Queue (ft)	74	274	299	28	51
Average Queue (ft)	15	73	91	0	18
95th Queue (ft)	65	210	233	10	41
Link Distance (ft)		303	303		116
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	2		
Storage Bay Dist (ft)	50			65	
Storage Blk Time (%)	0	10		0	
Queuing Penalty (veh)	0	84		0	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	150	144	297	320	204	170	258	270	166	186	207	168
Average Queue (ft)	62	77	262	272	158	76	179	153	77	92	103	82
95th Queue (ft)	120	125	326	327	271	140	254	234	136	164	179	153
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			24	25	1							
Queuing Penalty (veh)			102	108	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				28	1		0			2	0	
Queuing Penalty (veh)				73	5		0			2	0	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	165	189	242	268
Average Queue (ft)	91	108	101	141
95th Queue (ft)	149	167	187	231
Link Distance (ft)			275	275
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			1	1
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	1	1	
Queuing Penalty (veh)	0	1	2	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	74	121	33	19	63	41	23
Average Queue (ft)	37	46	6	2	18	1	1
95th Queue (ft)	65	93	25	12	48	22	10
Link Distance (ft)	99	110		275		310	310
Upstream Blk Time (%)		1					
Queuing Penalty (veh)		0					
Storage Bay Dist (ft)			50		50		
Storage Blk Time (%)			0		1	0	
Queuing Penalty (veh)			0		2	0	

Intersection: 6: Blake Road & RIRO

Movement	EB	SB
Directions Served	R	T
Maximum Queue (ft)	34	11
Average Queue (ft)	14	0
95th Queue (ft)	38	8
Link Distance (ft)	87	561
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	185	290	144	35	177	278	290	98	205	197
Average Queue (ft)	55	162	57	10	66	129	147	23	111	84
95th Queue (ft)	169	256	106	34	138	229	246	62	186	163
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	9	4			2			4	
Queuing Penalty (veh)	1	11	1			2			1	

Network Summary

Network wide Queuing Penalty: 404
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SimTraffic Performance Report  
2022 Build AM Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.3	0.0	0.0	0.0	4.0	0.4	3.9	0.1	0.1	3.8
Total Del/Veh (s)	40.7	7.7	4.5	50.9	19.3	16.4	47.3	55.5	2.3	44.2	54.7	1.9

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	20.1

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	3.9	0.1
Total Del/Veh (s)	13.7	3.7	4.4	10.1	0.5	0.3	32.1	41.3	9.6	30.3	6.4	3.5

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.0	1.8	1.4	4.8	1.4

4: Blake Road & Excelsior Boulevard 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	2.5	0.2	2.7	3.5	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	37.9	15.0	3.6	43.9	20.9	4.3	39.8	33.9	13.4	39.6	35.8	22.2

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	23.8

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.1	4.4	10.4	12.6	4.1	4.4	1.3	1.1	3.2	0.4	0.3	1.4

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.5	0.2	1.6	1.3	1.1

SimTraffic Performance Report  
2022 Build AM Peak Hour

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.2	0.2	0.2
Total Del/Veh (s)	17.8	11.5	24.9	6.8	13.2	5.7	12.5

Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	36.6

Queuing and Blocking Report  
2022 Build AM Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	344	370	227	192	126	244	260	75	62	53	35
Average Queue (ft)	188	238	105	70	30	114	133	27	18	12	6
95th Queue (ft)	296	332	201	155	78	202	223	64	49	41	26
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)							4				
Queuing Penalty (veh)							2				

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	R	LTR	LT	R
Maximum Queue (ft)	52	4	45	4	57	79	35
Average Queue (ft)	15	0	9	0	14	28	10
95th Queue (ft)	38	3	28	3	38	63	27
Link Distance (ft)		1944			111	196	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	215		200	60			100
Storage Blk Time (%)						0	
Queuing Penalty (veh)						0	

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	SB
Directions Served	T	R
Maximum Queue (ft)	13	23
Average Queue (ft)	0	4
95th Queue (ft)	9	17
Link Distance (ft)	299	116
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report  
2022 Build AM Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	53	76	211	251	171	124	216	198	62	193	158	132
Average Queue (ft)	12	30	100	115	32	50	133	106	30	107	42	31
95th Queue (ft)	38	64	180	204	95	103	206	183	58	182	112	85
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	1	0							
Queuing Penalty (veh)			1	1	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				1	0					2		
Queuing Penalty (veh)				1	0					1		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	120	157	171	193
Average Queue (ft)	53	72	70	99
95th Queue (ft)	102	124	135	170
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	54	75	28	39
Average Queue (ft)	18	28	2	4
95th Queue (ft)	45	58	14	24
Link Distance (ft)	99	110		
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)			50	50
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Queuing and Blocking Report  
2022 Build AM Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	29
Average Queue (ft)	3
95th Queue (ft)	18
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	101	204	98	78	91	158	144
Average Queue (ft)	12	101	41	32	37	77	55
95th Queue (ft)	65	169	79	66	76	132	114
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	1				0	
Queuing Penalty (veh)	0	1				0	

Network Summary

Network wide Queuing Penalty: 8
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SimTraffic Performance Report  
2022 Build PM Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.3	0.3	0.0	0.0	0.0	3.9	0.7	3.8	0.3	0.9	3.4
Total Del/Veh (s)	55.3	15.3	10.5	62.6	27.9	26.7	50.1	61.0	2.8	49.6	65.9	2.9

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	20.9

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	51.1	72.8	2.5
Total Del/Veh (s)	18.3	8.1	7.0	32.9	0.8	0.7	118.1	105.6	248.7	46.0	11.1

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	5.1	2.1	1.4	6.3	4.0

4: Blake Road & Excelsior Boulevard 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	2.5	0.4	2.5	3.5	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	54.9	26.3	9.5	56.4	21.1	7.5	56.3	45.8	25.9	55.3	47.2	35.7

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	30.2

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.7	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	16.3	22.6	7.1	21.5	21.9	7.6	4.6	1.5	1.3	5.2	0.6	0.3

5: Blake Road & Full Access Driveway Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.7

SimTraffic Performance Report  
2022 Build PM Peak Hour

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6: Blake Road & RIRO Performance by movement

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Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.0	0.3	1.8	1.8	1.0

7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.0	0.0	0.2	0.2	0.1
Total Del/Veh (s)	20.1	15.2	31.3	9.5	16.9	8.8	14.3

Total Network Performance

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Denied Del/Veh (s)	2.3
Total Del/Veh (s)	50.9

Queuing and Blocking Report  
2022 Build PM Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	132	276	536	471	174	381	390	104	83	53	153	70
Average Queue (ft)	17	91	249	210	36	257	274	38	23	2	74	19
95th Queue (ft)	71	197	443	404	123	373	384	79	63	28	134	54
Link Distance (ft)		717	717	717		1944	1944		317		537	537
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		0										
Storage Bay Dist (ft)	500				150			150		150		
Storage Blk Time (%)						21				0		
Queuing Penalty (veh)						5				0		

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LTR	LT	R
Maximum Queue (ft)	87	18	26	41	4	4	74	228	125
Average Queue (ft)	28	1	1	7	0	0	23	90	36
95th Queue (ft)	63	13	12	26	3	5	60	215	109
Link Distance (ft)		1944	1944		299		111	196	
Upstream Blk Time (%)								20	
Queuing Penalty (veh)								0	
Storage Bay Dist (ft)	215			200		60			100
Storage Blk Time (%)								30	1
Queuing Penalty (veh)								20	0

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	75	278	309	50
Average Queue (ft)	10	55	73	17
95th Queue (ft)	52	190	214	39
Link Distance (ft)		299	299	116
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		1	4	
Storage Bay Dist (ft)	50			
Storage Blk Time (%)		7		
Queuing Penalty (veh)		60		

Queuing and Blocking Report  
2022 Build PM Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	119	131	307	307	204	197	267	240	128	178	218	189
Average Queue (ft)	48	69	255	266	159	80	177	152	63	92	100	71
95th Queue (ft)	98	117	321	327	271	150	255	232	113	159	178	157
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			21	23	1							
Queuing Penalty (veh)			84	92	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				26	1		0			1	1	
Queuing Penalty (veh)				66	5		0			1	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	160	169	158	209
Average Queue (ft)	77	91	81	118
95th Queue (ft)	138	146	145	191
Link Distance (ft)			275	275
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	0	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T	TR
Maximum Queue (ft)	101	95	37	16	60	6	4
Average Queue (ft)	40	43	6	1	15	0	0
95th Queue (ft)	76	77	26	8	44	5	3
Link Distance (ft)	99	110		275		310	310
Upstream Blk Time (%)	1	0					
Queuing Penalty (veh)	0	0					
Storage Bay Dist (ft)			50		50		
Storage Blk Time (%)			0		0		
Queuing Penalty (veh)			0		1		

Queuing and Blocking Report  
2022 Build PM Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB	SB
Directions Served	R	T
Maximum Queue (ft)	29	6
Average Queue (ft)	12	0
95th Queue (ft)	36	5
Link Distance (ft)	87	561
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	LTR	L	T	TR	T	TR
Maximum Queue (ft)	184	245	144	194	194	230	201
Average Queue (ft)	41	126	59	82	93	98	85
95th Queue (ft)	142	209	115	154	165	175	165
Link Distance (ft)		551		561	561	615	615
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	160		200				
Storage Blk Time (%)	0	3	0	0		2	
Queuing Penalty (veh)	0	4	0	0		0	

Network Summary

Network wide Queuing Penalty: 345
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SimTraffic Performance Report  
2030 Build AM Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.3	0.0	0.0	0.0	4.0	0.4	4.0	0.1	0.5	3.8
Total Del/Veh (s)	40.6	8.6	4.6	55.2	22.7	23.1	42.5	50.2	2.3	42.9	57.0	2.1

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.1

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	4.1	0.1
Total Del/Veh (s)	12.2	4.1	3.6	8.8	0.5	0.3	23.4	21.0	7.2	31.5	7.6	3.5

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.2	1.9	1.4	5.6	1.6

4: Blake Road & Excelsior Boulevard 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	2.6	0.2	2.6	3.4	0.3	0.2	0.0	0.0	0.1
Total Del/Veh (s)	35.6	15.4	3.9	46.0	23.2	4.6	40.4	32.2	14.6	38.2	34.5	27.3

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	24.7

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.3	6.2	11.1	4.0	5.2	1.3	0.8	4.0	0.5	0.3	1.8

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.5	0.3	1.8	1.4	1.2

SimTraffic Performance Report  
2030 Build AM Peak Hour

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.4	0.3	0.2	0.3	3.9	0.0	0.0	0.0	3.1	0.2	0.2
Total Del/Veh (s)	20.4	20.3	15.1	19.8	18.6	4.9	28.4	11.0	5.9	32.2	17.1	8.7

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	16.0

Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	38.5

Queuing and Blocking Report  
2030 Build AM Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	318	356	240	223	152	275	304	62	71	53	36
Average Queue (ft)	195	241	121	87	38	143	162	25	18	15	8
95th Queue (ft)	291	326	220	189	100	243	265	57	52	44	31
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)							9				
Queuing Penalty (veh)							4				

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	L	LTR	LT	R
Maximum Queue (ft)	48	12	56	37	78	53
Average Queue (ft)	12	0	9	13	28	14
95th Queue (ft)	37	5	31	31	58	38
Link Distance (ft)		1944		111	196	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	215		200			100
Storage Blk Time (%)					0	0
Queuing Penalty (veh)					0	0

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	SB
Directions Served	T	R
Maximum Queue (ft)	12	32
Average Queue (ft)	0	11
95th Queue (ft)	4	31
Link Distance (ft)	299	116
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report  
 2030 Build AM Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	66	79	223	245	167	135	220	204	76	197	223	110
Average Queue (ft)	15	31	107	117	39	46	148	117	33	110	50	41
95th Queue (ft)	43	64	193	206	112	96	216	198	64	185	135	95
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	1	0							
Queuing Penalty (veh)			1	1	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				1	0					2		
Queuing Penalty (veh)				1	0					1		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	171	181	190	220
Average Queue (ft)	73	90	91	120
95th Queue (ft)	134	146	159	189
Link Distance (ft)			275	275
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	1	0	
Queuing Penalty (veh)	0	1	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	TR
Maximum Queue (ft)	98	66	33	4	4	39	4
Average Queue (ft)	37	31	3	0	0	7	0
95th Queue (ft)	74	53	18	4	3	29	3
Link Distance (ft)	99	110		275	275		310
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)			50			50	
Storage Blk Time (%)			0			0	
Queuing Penalty (veh)			0			0	

Queuing and Blocking Report  
2030 Build AM Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	46
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	184	244	142	35	117	111	134	46	195	182
Average Queue (ft)	29	125	59	12	48	50	62	11	98	74
95th Queue (ft)	114	207	112	37	95	89	108	34	166	146
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	4	2						2	
Queuing Penalty (veh)	0	4	0						0	

Network Summary

Network wide Queuing Penalty: 16
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SimTraffic Performance Report  
2030 Build PM Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.2	0.0	0.0	3.9	0.5	3.9	0.3	1.1	3.4
Total Del/Veh (s)	56.6	16.3	12.0	59.6	28.4	26.4	52.8	56.1	2.5	53.0	66.1	3.0

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	21.6

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	44.7	36.9	0.7
Total Del/Veh (s)	19.7	8.7	10.3	28.5	0.8	0.7	144.5	73.6	257.0	45.2	10.1

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.0	2.1	1.8	6.8	4.5

4: Blake Road & Excelsior Boulevard 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	2.5	0.4	2.5	3.4	0.2	0.2	0.0	0.0	0.2
Total Del/Veh (s)	58.8	26.7	10.8	56.7	21.5	9.4	56.4	46.0	27.5	57.5	53.5	42.5

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	31.8

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.4	0.2	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	22.7	9.8	30.6	11.1	6.4	1.5	1.3	6.9	0.7	0.4	2.6

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.3	0.4	1.8	1.7	1.0

SimTraffic Performance Report  
2030 Build PM Peak Hour

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.3	0.5	0.2	0.2	4.1	0.0	0.0	0.0	2.9	0.3	0.3
Total Del/Veh (s)	26.3	25.0	20.6	26.7	25.1	6.9	42.0	16.9	12.2	48.3	20.9	12.8

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.7

Total Network Performance

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Denied Del/Veh (s)	1.3
Total Del/Veh (s)	53.1

Queuing and Blocking Report  
2030 Build PM Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	174	190	536	490	174	412	423	101	77	142	57
Average Queue (ft)	39	104	265	231	35	279	296	39	23	68	15
95th Queue (ft)	120	165	462	428	124	402	417	79	58	127	43
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)			0								
Queuing Penalty (veh)			0								
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)						22					
Queuing Penalty (veh)						6					

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	R	LTR	LT	R
Maximum Queue (ft)	77	5	32	37	3	35	88	140	95
Average Queue (ft)	22	0	1	6	0	2	29	62	16
95th Queue (ft)	58	5	14	22	2	19	68	178	63
Link Distance (ft)		1944	1944		299		111	196	
Upstream Blk Time (%)							1	15	
Queuing Penalty (veh)							0	0	
Storage Bay Dist (ft)	215			200		60			100
Storage Blk Time (%)						0		19	0
Queuing Penalty (veh)						0		5	0

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	75	295	316	23
Average Queue (ft)	19	75	94	9
95th Queue (ft)	73	223	245	27
Link Distance (ft)		299	299	116
Upstream Blk Time (%)		0	1	
Queuing Penalty (veh)		2	6	
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0	9		
Queuing Penalty (veh)	0	80		

Queuing and Blocking Report  
2030 Build PM Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	142	170	299	305	204	144	294	262	162	190	218	181
Average Queue (ft)	60	81	259	267	154	71	189	165	81	107	103	82
95th Queue (ft)	119	141	334	334	269	129	272	244	137	184	182	157
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)	0	0	23	24	1							
Queuing Penalty (veh)	0	0	101	104	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				26	1		0			2	0	
Queuing Penalty (veh)				70	5		0			3	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	171	189	236	267
Average Queue (ft)	96	117	114	152
95th Queue (ft)	160	178	197	238
Link Distance (ft)			275	275
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			0	1
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	1	2	
Queuing Penalty (veh)	0	1	5	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	T
Maximum Queue (ft)	106	107	40	12	54	23
Average Queue (ft)	32	41	7	0	19	1
95th Queue (ft)	71	78	29	5	47	16
Link Distance (ft)	99	110		275		310
Upstream Blk Time (%)	1	1				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)			50		50	
Storage Blk Time (%)			0		1	0
Queuing Penalty (veh)			1		2	0

Queuing and Blocking Report  
 2030 Build PM Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	67	4
Average Queue (ft)	19	0
95th Queue (ft)	48	3
Link Distance (ft)	87	561
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	185	304	124	66	173	284	302	126	253	250
Average Queue (ft)	63	160	58	10	66	132	154	26	120	115
95th Queue (ft)	183	265	106	37	128	230	259	74	209	214
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	10	3	0		2			5	
Queuing Penalty (veh)	1	12	0	0		2			1	

Network Summary

Network wide Queuing Penalty: 410

SimTraffic Performance Report  
 2030 Build AM with Outlot Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.2	0.0	0.0	0.0	4.0	0.3	4.0	0.2	0.5	3.8
Total Del/Veh (s)	40.4	8.1	4.4	56.7	22.8	23.3	43.8	52.4	2.3	48.3	49.3	2.1

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	21.0

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.2	4.0	0.1
Total Del/Veh (s)	14.9	4.0	3.3	7.3	0.5	0.4	25.5	43.3	8.1	30.1	8.4	3.5

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	1.3	2.0	1.3	6.2	1.7

4: Blake Road & Excelsior Boulevard 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	2.5	0.2	2.7	3.5	0.3	0.2	0.0	0.0	0.0
Total Del/Veh (s)	36.2	15.8	4.0	47.8	24.6	4.7	40.7	34.5	14.5	39.2	37.0	29.0

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	25.7

5: Blake Road & Full Access Driveway 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)	13.4	6.6	10.1	4.2	6.9	1.3	1.4	3.6	0.6	0.2	1.9

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.9	0.3	1.7	1.5	1.2

SimTraffic Performance Report  
 2030 Build AM with Outlot Peak Hour

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.4	0.2	0.2	4.0	0.0	0.0	0.0	2.9	0.2	0.2
Total Del/Veh (s)	20.6	19.9	15.5	22.0	22.4	4.8	30.2	11.5	5.8	40.5	17.0	8.1

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	16.5

Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	39.2

Queuing and Blocking Report  
 2030 Build AM with Outlot Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	337	397	266	210	174	279	305	73	49	44	36
Average Queue (ft)	203	252	112	83	40	149	165	23	14	10	8
95th Queue (ft)	300	349	213	176	108	248	260	61	40	36	29
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)					0			10			
Queuing Penalty (veh)					0			4			

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	L	LTR	LT	R
Maximum Queue (ft)	35	4	54	46	89	38
Average Queue (ft)	8	0	9	14	30	13
95th Queue (ft)	26	3	30	35	64	30
Link Distance (ft)		1944		111	196	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	215		200		100	
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	WB	SB
Directions Served	T	R	R
Maximum Queue (ft)	11	13	28
Average Queue (ft)	0	0	12
95th Queue (ft)	8	9	32
Link Distance (ft)	299		116
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	65		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report  
 2030 Build AM with Outlot Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	74	80	224	254	203	122	243	208	73	197	235	153
Average Queue (ft)	16	31	104	120	48	48	148	125	36	114	54	40
95th Queue (ft)	48	63	189	211	143	97	215	198	64	189	142	106
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			0	1	0							
Queuing Penalty (veh)			1	2	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				1	0		0			3		
Queuing Penalty (veh)				2	0		0			2		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	161	163	191	218
Average Queue (ft)	77	93	93	129
95th Queue (ft)	136	142	164	204
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	0	1	
Queuing Penalty (veh)	0	0	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	86	53	29	4	37	6
Average Queue (ft)	38	27	4	0	5	0
95th Queue (ft)	66	53	21	3	23	5
Link Distance (ft)	99	110		275		310
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			50		50	
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Queuing and Blocking Report  
 2030 Build AM with Outlot Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	53
Average Queue (ft)	18
95th Queue (ft)	45
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	180	249	143	48	111	109	132	46	205	192
Average Queue (ft)	37	128	66	11	48	46	59	12	104	74
95th Queue (ft)	136	214	118	38	93	90	111	34	177	147
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	3	3	0					2	
Queuing Penalty (veh)	0	4	0	0					0	

Network Summary

Network wide Queuing Penalty: 18
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SimTraffic Performance Report  
 2030 Build PM with Outlot Peak Hour

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.3	0.1	0.0	0.0	3.9	0.5	3.8	0.3	1.2	3.4
Total Del/Veh (s)	59.5	17.5	10.3	71.9	29.5	29.4	53.7	53.1	2.7	51.1	56.0	3.0

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	22.9

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	10.5	3.6	55.8	76.0	1.4
Total Del/Veh (s)	17.6	8.9	8.1	29.7	0.8	0.6	224.5	85.8	269.1	23.1	10.3

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	6.2	2.2	1.7	9.5	4.6

4: Blake Road & Excelsior Boulevard 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	2.5	0.4	2.5	3.3	0.2	0.2	0.0	0.0	0.1
Total Del/Veh (s)	57.1	26.7	10.2	55.4	21.7	9.2	51.8	47.0	29.3	62.3	53.3	46.0

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	32.4

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.8	8.6	29.5	11.4	5.8	1.5	1.4	6.4	0.9	0.3	2.6

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.2	0.4	2.0	1.7	1.1

SimTraffic Performance Report  
2030 Build PM with Outlot Peak Hour

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	0.4	0.2	0.2	4.1	0.0	0.0	0.0	3.1	0.3	0.3
Total Del/Veh (s)	25.9	26.4	20.5	25.4	28.8	8.1	39.8	17.2	16.3	47.4	19.3	11.3

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	20.3

Total Network Performance

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Denied Del/Veh (s)	1.6
Total Del/Veh (s)	54.4

Queuing and Blocking Report  
 2030 Build PM with Outlot Peak Hour

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	184	207	554	506	174	446	443	92	79	33	159	56
Average Queue (ft)	44	107	282	243	38	294	306	34	28	1	67	15
95th Queue (ft)	134	176	486	444	123	413	418	74	66	24	128	47
Link Distance (ft)		717	717	717		1944	1944		317		537	537
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	500				150			150		150		
Storage Blk Time (%)						23				0		
Queuing Penalty (veh)						6				0		

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	R	LTR	LT	R
Maximum Queue (ft)	58	4	42	25	104	141	92
Average Queue (ft)	20	0	7	1	35	60	18
95th Queue (ft)	45	3	25	13	97	152	68
Link Distance (ft)		1944			111	196	
Upstream Blk Time (%)					11	8	
Queuing Penalty (veh)					0	0	
Storage Bay Dist (ft)	215		200	60			100
Storage Blk Time (%)				0		19	0
Queuing Penalty (veh)				0		5	0

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	EB	SB
Directions Served	T	T	T	T	R
Maximum Queue (ft)	8	75	304	313	37
Average Queue (ft)	0	19	82	97	9
95th Queue (ft)	6	73	239	256	28
Link Distance (ft)			299	299	116
Upstream Blk Time (%)			0	1	
Queuing Penalty (veh)			4	5	
Storage Bay Dist (ft)	50	50			
Storage Blk Time (%)	0	0	10		
Queuing Penalty (veh)	0	0	89		

Queuing and Blocking Report  
 2030 Build PM with Outlot Peak Hour

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	128	146	309	318	204	197	292	294	202	190	197	199
Average Queue (ft)	60	78	259	267	152	76	189	173	83	103	103	92
95th Queue (ft)	110	129	334	334	269	148	270	265	156	173	176	170
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			23	25	1							
Queuing Penalty (veh)			99	110	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				28	1		0	0	0	1	1	
Queuing Penalty (veh)				74	5		0	0	0	2	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	175	189	268	271
Average Queue (ft)	109	125	124	153
95th Queue (ft)	177	191	219	244
Link Distance (ft)			275	275
Upstream Blk Time (%)			1	0
Queuing Penalty (veh)			3	1
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	1	3	2	
Queuing Penalty (veh)	1	4	6	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	92	113	36	8	15	58	40	6
Average Queue (ft)	34	44	8	0	1	17	2	0
95th Queue (ft)	71	83	29	6	7	47	19	6
Link Distance (ft)	99	110		275	275		310	310
Upstream Blk Time (%)	1	1						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (ft)			50			50		
Storage Blk Time (%)			0	0		1	0	
Queuing Penalty (veh)			0	0		2	0	

Queuing and Blocking Report  
 2030 Build PM with Outlot Peak Hour

Intersection: 6: Blake Road & RIRO

Movement	EB	SB
Directions Served	R	TR
Maximum Queue (ft)	64	4
Average Queue (ft)	18	0
95th Queue (ft)	49	3
Link Distance (ft)	87	561
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	182	304	140	76	167	270	287	139	235	220
Average Queue (ft)	58	158	60	13	67	138	159	25	123	102
95th Queue (ft)	175	266	118	50	134	251	266	76	200	183
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	9	3	0	0	2		0	5	
Queuing Penalty (veh)	1	11	0	0	0	2		0	1	

Network Summary

Network wide Queuing Penalty: 432

SimTraffic Performance Report  
 2030 Build AM Peak Hour with Mitigation

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.5	0.2	0.3	0.0	0.0	0.0	4.0	0.4	4.0	0.1	0.6	3.8
Total Del/Veh (s)	41.6	7.9	4.4	66.5	18.5	19.1	45.9	55.3	2.3	49.1	52.6	2.0

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	20.1

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	4.1	0.1
Total Del/Veh (s)	60.1	25.8	20.6	48.4	25.8	16.1	10.9	17.5	8.3	16.5	8.9	25.8

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	3.7	2.3	1.5	6.8	3.0

4: Blake Road & Excelsior Boulevard 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	2.7	0.2	2.7	3.4	0.2	0.2	0.0	0.0	0.0
Total Del/Veh (s)	28.1	11.9	3.8	47.3	24.1	4.7	41.8	33.7	15.7	39.5	36.1	25.3

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	24.1

5: Blake Road & Full Access Driveway Performance by movement

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	12.9	6.0	12.6	4.1	5.3	1.3	1.4	3.6	0.5	0.2	1.9

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.9	0.3	1.7	1.4	1.2

SimTraffic Performance Report  
2030 Build AM Peak Hour with Mitigation

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.4	0.4	0.2	0.2	4.0	0.0	0.0	0.0	3.2	0.2	0.2
Total Del/Veh (s)	21.0	19.1	15.0	22.4	22.0	4.5	32.8	11.0	5.8	30.6	16.5	8.5

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	16.3

Total Network Performance

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Denied Del/Veh (s)	0.8
Total Del/Veh (s)	48.0

Queuing and Blocking Report  
 2030 Build AM Peak Hour with Mitigation

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	L	T
Maximum Queue (ft)	348	410	259	235	94	348	362	84	68	60	36
Average Queue (ft)	204	258	106	83	33	103	113	26	19	15	5
95th Queue (ft)	317	363	220	187	79	262	270	65	52	45	24
Link Distance (ft)		717	717	717		1944	1944		317	537	537
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	500				150			150			
Storage Blk Time (%)					0	6					
Queuing Penalty (veh)					1	3					

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB	
Directions Served	L	T	TR	L	T	T	R	LTR	LT	R	
Maximum Queue (ft)	169	389	411	222	345	361	51	28	63	48	
Average Queue (ft)	24	164	186	31	185	197	3	9	16	11	
95th Queue (ft)	84	317	337	124	326	340	22	26	46	33	
Link Distance (ft)		1944	1944		299	299		111	196		
Upstream Blk Time (%)					2	2					
Queuing Penalty (veh)					9	11					
Storage Bay Dist (ft)	215			200			60				100
Storage Blk Time (%)			6			10	36				0
Queuing Penalty (veh)			2			3	4				0

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	WB	WB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	23	17	15	32
Average Queue (ft)	1	1	1	11
95th Queue (ft)	14	8	11	31
Link Distance (ft)	299	204		116
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			65	
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Queuing and Blocking Report  
 2030 Build AM Peak Hour with Mitigation

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	72	96	237	253	203	117	240	229	78	190	222	128
Average Queue (ft)	15	35	96	109	42	49	151	122	34	115	54	47
95th Queue (ft)	47	78	199	227	138	96	229	207	61	191	146	101
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			1	1	0							
Queuing Penalty (veh)			1	2	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				1	0		0			2		
Queuing Penalty (veh)				1	0		0			1		

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	148	168	208	225
Average Queue (ft)	71	92	88	124
95th Queue (ft)	132	146	157	193
Link Distance (ft)			275	275
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	0	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	93	69	29	4	30	8
Average Queue (ft)	37	31	4	0	6	0
95th Queue (ft)	67	57	21	3	25	4
Link Distance (ft)	99	110		275		310
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)			50		50	
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Queuing and Blocking Report  
 2030 Build AM Peak Hour with Mitigation

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	15
95th Queue (ft)	40
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	178	225	154	68	107	115	121	42	179	163
Average Queue (ft)	33	123	62	12	47	47	59	9	92	72
95th Queue (ft)	121	201	120	48	90	94	108	33	157	142
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	4	3						1	
Queuing Penalty (veh)	0	4	1						0	

Network Summary

Network wide Queuing Penalty: 44
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SimTraffic Performance Report  
 2030 Build PM Peak Hour with Mitigation

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.6	0.3	0.0	0.0	3.8	0.6	3.9	0.3	1.0	3.4
Total Del/Veh (s)	56.5	15.9	11.5	74.7	17.9	17.6	57.8	58.1	3.7	52.9	64.2	3.0

1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	18.6

2: Pierce Avenue & Excelsior Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.3	0.3	0.1	0.1	0.2	4.2	0.2
Total Del/Veh (s)	72.4	37.0	41.9	51.9	19.8	12.8	34.8	29.5	30.1	9.9	31.3

3: Excelsior Boulevard & RIRO Performance by movement

Movement	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	8.0	3.1	2.0	12.0	6.1

4: Blake Road & Excelsior Boulevard 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	2.5	0.5	2.5	3.4	0.3	0.2	0.0	0.0	0.2
Total Del/Veh (s)	40.6	18.4	7.5	56.8	24.6	10.0	53.4	45.2	35.4	52.6	48.0	36.5

4: Blake Road & Excelsior Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.5
Total Del/Veh (s)	28.2

5: Blake Road & Full Access Driveway 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	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	19.1	8.0	25.7	9.9	5.8	1.5	1.5	6.3	0.7	0.3	2.3

6: Blake Road & RIRO Performance by movement

Movement	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.7	0.4	1.8	1.9	1.1

SimTraffic Performance Report  
2030 Build PM Peak Hour with Mitigation

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7: Blake Road & 2nd Street Performance by movement

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.5	0.4	0.2	0.2	4.0	0.0	0.0	0.0	3.1	0.3	0.3
Total Del/Veh (s)	27.6	32.6	19.4	27.2	30.5	7.4	42.3	18.4	15.1	43.5	20.2	12.8

7: Blake Road & 2nd Street Performance by movement

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Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	21.4

Total Network Performance

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Denied Del/Veh (s)	1.0
Total Del/Veh (s)	60.4

Queuing and Blocking Report  
 2030 Build PM Peak Hour with Mitigation

Intersection: 1: Milwaukee Street/Jackson Avenue & Excelsior Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	158	202	546	461	153	448	808	94	79	98	150	52
Average Queue (ft)	42	111	270	228	27	148	180	35	26	4	76	15
95th Queue (ft)	123	178	434	390	81	344	511	75	61	44	132	44
Link Distance (ft)		717	717	717		1944	1944		317		537	537
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	500				150			150		150		
Storage Blk Time (%)						5				0		
Queuing Penalty (veh)						1				0		

Intersection: 2: Pierce Avenue & Excelsior Boulevard

Movement	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	LTR	LT	R
Maximum Queue (ft)	239	954	954	143	386	396	82	41	72	60
Average Queue (ft)	56	325	358	16	152	154	9	11	20	11
95th Queue (ft)	151	795	830	79	363	367	43	32	55	35
Link Distance (ft)		1944	1944		299	299		111	196	
Upstream Blk Time (%)					7	7				
Queuing Penalty (veh)					37	38				
Storage Bay Dist (ft)	215			200			60			100
Storage Blk Time (%)		17			12	25	0		0	
Queuing Penalty (veh)		9			2	8	0		0	

Intersection: 3: Excelsior Boulevard & RIRO

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	R
Maximum Queue (ft)	74	322	336	105	136	36	23
Average Queue (ft)	12	52	64	8	9	2	7
95th Queue (ft)	57	218	244	53	63	21	25
Link Distance (ft)		299	299	204	204		116
Upstream Blk Time (%)		1	1		0		
Queuing Penalty (veh)		6	9		0		
Storage Bay Dist (ft)	50					65	
Storage Blk Time (%)		3			2	0	
Queuing Penalty (veh)		28			1	0	

Queuing and Blocking Report  
 2030 Build PM Peak Hour with Mitigation

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	143	157	294	289	204	164	341	315	230	192	203	181
Average Queue (ft)	63	80	204	216	118	72	198	181	84	101	96	81
95th Queue (ft)	124	141	335	341	253	139	293	277	163	178	166	153
Link Distance (ft)	204	204	204	204			1139	1139			608	608
Upstream Blk Time (%)			9	10	1							
Queuing Penalty (veh)			38	42	0							
Storage Bay Dist (ft)					185	280			350	175		
Storage Blk Time (%)				11	1		1	0		1	1	
Queuing Penalty (veh)				31	3		1	0		2	1	

Intersection: 4: Blake Road & Excelsior Boulevard

Movement	SB	SB	SB	SB
Directions Served	L	L	T	TR
Maximum Queue (ft)	165	186	222	234
Average Queue (ft)	95	114	108	145
95th Queue (ft)	160	176	179	214
Link Distance (ft)			275	275
Upstream Blk Time (%)			0	0
Queuing Penalty (veh)			0	0
Storage Bay Dist (ft)	165	165		
Storage Blk Time (%)	0	1	0	
Queuing Penalty (veh)	0	1	1	

Intersection: 5: Blake Road & Full Access Driveway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	73	97	38	4	18	58	12	4
Average Queue (ft)	30	42	8	0	1	18	0	0
95th Queue (ft)	60	79	31	3	7	47	6	3
Link Distance (ft)	99	110		275	275		310	310
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			50			50		
Storage Blk Time (%)			0			0		
Queuing Penalty (veh)			0			1		

Queuing and Blocking Report  
 2030 Build PM Peak Hour with Mitigation

Intersection: 6: Blake Road & RIRO

Movement	EB
Directions Served	R
Maximum Queue (ft)	47
Average Queue (ft)	19
95th Queue (ft)	45
Link Distance (ft)	87
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Blake Road & 2nd Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	184	313	159	54	197	282	318	120	238	225
Average Queue (ft)	70	170	61	11	67	144	161	29	124	113
95th Queue (ft)	195	272	119	39	142	248	271	80	212	204
Link Distance (ft)		551	185			561	561		615	615
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (ft)	160			100	200			140		
Storage Blk Time (%)	0	10	4			3		0	5	
Queuing Penalty (veh)	1	13	1			3		0	2	

Network Summary

Network wide Queuing Penalty: 280