Scoping Alternative Urban Areawide Review (AUAR)

Rochester Technology Campus

Rochester, MN

IRGRA 178397 | June 6, 2025

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Rochester Technology Campus
Rochester, MN

SEH No. IRGRA 178397

June 6, 2025

I hereby certify that this report was prepared by me or under my direct supervision.

June 3, 2025

Rebecca Beduhn — Date
Sr. Scientist

June 3, 2025

Kari Franklin — Date
Client Service Manager

Reviewed By:

June 6, 2025

Natalie White — Date
Sr. Scientist

Short Elliott Hendrickson Inc.
717 Third Avenue SE, Suite 101
Rochester, MN 55904-7373
507.288.6464

Executive Summary

The document is a scoping alternative urban areawide review (AUAR) for the Rochester Technology Campus, a mixed-use redevelopment project of the former IBM property in Rochester, MN, proposed by Industrial Realty Group, LLC (IRG). The project proposes two scenarios of development, including residential, commercial, industrial, and recreational sectors, and evaluates the environmental impacts and mitigation measures of each scenario for various resource categories such as geology, soils, water resources, contamination, ecological resources, historic properties, visual, air, noise, transportation, and cumulative effects. The AUAR considers the current and projected climate trends and impacts in the project location, such as increasing temperature and precipitation, more frequent extreme weather events, and potential for drought and flooding, and identifies climate adaptation and resilience measures for each resource category. The AUAR lists the major permits and approvals required from various federal, state, regional, county, and local agencies for the proposed development scenarios, and indicates the responsible parties and the status of each permit and approval. The project is consistent with the City's Comprehensive Plan and zoning designations for mixed-use transit oriented corridors, and proposes mitigation measures to avoid, minimize, or compensate for the adverse environmental effects of the project, such as stormwater treatment, wetland replacement, erosion control, noise abatement, and traffic improvements.

Project overview and background: The project is a redevelopment of the Rochester Technology Campus, a former IBM property, proposed by IRG. The AUAR evaluates two scenarios of mixed-use development, including residential, commercial, industrial, and recreational sectors. The project requires an Alternative Urban Areawide Review (AUAR) to assess the environmental impacts and mitigation measures of the proposed scenarios.

Project magnitude and land use: The project covers ±494.4 acres of land, with different magnitudes of development for each scenario. Scenario 1 includes 2,624 residential units, 854,000 square feet of commercial space, 650,000 square feet of industrial space, and 1,105,000 square feet of recreational space. Scenario 2 includes 1,920 residential units, 854,000 square feet of commercial space, 650,000 square feet of industrial space, and 2,200,000 square feet of recreational space, with a regional sports complex. The project would convert existing cover types such as woodland, grassland, cropland, and wetland into impervious surfaces, lawn, and stormwater ponds. The project is consistent with the City's Comprehensive Plan and zoning designations for mixed-use transit-oriented corridors.

Climate adaptation and resilience: The AUAR considers the climate trends and impacts in the general location of Rochester, MN, which include a warmer and wetter climate, more frequent extreme precipitation events, and potential for drought and flooding. The AUAR evaluates the climate adaptation and resilience of the proposed development scenarios for various resource categories, such as project design, land use, water resources, contamination, and ecological resources. The AUAR identifies mitigation measures to reduce greenhouse gas emissions, enhance stormwater management, protect sensitive habitats, and promote energy efficiency.

Permits and approvals required: The AUAR lists the major permits and approvals required from various federal, state, regional, county, and local agencies for the proposed development scenarios. These include permits and approvals related to wetland impacts, water appropriation, wastewater discharge, stormwater management, soil erosion, historic preservation, and land use. The AUAR also identifies the responsible parties and the status of each permit and approval.

Environmental effects and mitigation measures: The AUAR analyzes the potential environmental effects and mitigation measures for each development scenario and each resource category, such as geology, soils, water resources, contamination, ecological resources, historic properties, visual, air, noise, transportation, and cumulative effects. The AUAR uses various methods and sources to assess the environmental effects, such as geotechnical studies, wetland delineation, traffic studies, and environmental site assessments. The scenarios include mitigation measures to avoid, minimize, or compensate for the adverse environmental effects, such as stormwater treatment, wetland replacement, erosion control, noise abatement, and traffic improvements.

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Scoping Alternative Urban Areawide Review (AUAR)

Rochester Technology Campus

Prepared for the City of Rochester on behalf of Industrial Realty Group

1 Project Overview

The purpose of this scoping document is to provide development scenario information sufficient to allow review and comment on potential alternative development scenarios and relevant issues to be analyzed in further review.

The AUAR study area is approximately 494.4 acres of land in the City of Rochester, Minnesota. For background, in 2018, IRG acquired the property within the study area from IBM and has since leased it to various businesses, with IBM still occupying a portion of the existing buildings and property. The existing buildings are leased. IRG has plans to develop the surrounding undeveloped land, which is primarily farmland, wetland, and woodland to the north and west, and agricultural to the south. The neighboring areas are mainly commercial to the north, industrial to the west, and residential to the south. The proposed development (the "project") includes commercial, retail, and hospitality sectors to the east, residential areas to the south and north, and industrial zones to the west.

1.1 Project Title

Rochester Technology Campus

1.2 Proposer Information

Proposer: Industrial Reality Group
Contact Person: Evan Vlaeminck
Title: Vice President, Asset Development Manager
Address: 4020 Kinross Lakes Parkway, Suite 200
City, State, Zip: Richfield, Ohio, 44286
Phone: 330.659.4060
Email: evlaeminck@irga.com

1.3 RGU Information

RGU: City of Rochester
Contact Person: Elliot Mohler
Title: Planner
Address: 4001 West River Parkway NW, Suite 100
City, State, Zip: Rochester, MN 55901
Phone: 507.328.2941
Email: communitydevelopment@rochestermn.gov

1.4 Project Location

County: Olmsted

City/Township: City of Rochester

PLS Location (¼, ¼, Section, Township, Range):

- E ½ NE ¼ S20 T107N R14W
- All of S21 T107N R14W
- W ½ S22 T107N R14W
- NE ¼ NW ¼ S28 T107N R14W

Watershed (81 major watershed scale): 41 (Zumbro River)

GPS Coordinates: 44.057362, -92.506447

Tax Parcel Number(s): 742014052189, 742113085447, 742142085448, and 742114085449

At minimum, attach each of the following to the AUAR:

- A map clearly depicting the boundaries of the AUAR study area and any subdistricts used the AUAR analysis (Figure 1)
- US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (Figure 2)
- A cover type map (Figure 3)
- Land use and planning and zoning maps (**Appendix A**)

1.5 Project Description

Instead of the information called for on the EAW form, the description section of an AUAR should include the following elements for each major development scenario included:

- anticipated types and intensity (density) of residential and commercial/warehouse/light industrial development throughout the AUAR area;

- infrastructure planned to serve development (roads, sewers, water, stormwater system, etc.) Roadways intended primarily to serve as adjoining land uses within an AUAR area are normally expected to be reviewed as part of an AUAR. More “arterial” types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are included, a more intensive level of review, generally including an analysis of alternative routes, is necessary;

- information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.

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

IRG Realty Advisors purchased property in Rochester from IBM in 2018. Since then, IRG has leased the buildings to regional and local businesses for a variety of uses, including a large portion still leased by IBM. The property is currently leased at about 60%.

IRG is proposing development of property surrounding the existing campus. The undeveloped portions of the property are largely grassland, wetland, and wooded to the north and west. To the south, the proposed development property is primarily agricultural. The surrounding uses are largely commercial to the north, industrial to the west, and residential to the south. To the best of the proposer's knowledge, no previous traffic studies have been conducted on the property since the construction of the commercial area to the north including Target and Home Depot.

The proposed development activity consists of commercial, retail, and hospitality to the east, largely residential to the south and north, and industrial to the west. The attached conceptual site plan identifies a series of proposed roads and pedestrian connections throughout that will be evaluated with this study.

Sanitary sewer and watermain will be extended to and throughout the property during the proposed development. Stormwater requirements will be handled onsite by approved means and methods for rate control and water quality.

1.6 Project Magnitude

Project magnitude data. - information should be given for each major development scenario.

Table 1 – Project Magnitude Summary

Description	Scenario 1		Scenario 2 (Athletic Park)	
Total Project Acreage	**494.4**		**494.4**	
Linear project length (Street Length, LF)	20,560		20,915	
Residential Unit Breakdown	Townhomes –	424	Townhomes –	220
	Apartment Units	2,200	Apartment Units –	1,700
	Total Units -	**2,624**	**Total Units -**	**1,920**
Residential building area (SF)	4,402,400		3,122,000	
Commercial building area (SF)	854,000		854,000	
Industrial building area (SF)	650,000		650,000	
Other uses – specify (SF)	Recreation	1,105,000	Recreation	2,200,000
	Common Area	435,600	Common Area	217,800
Maximum Height of Structures (FT)	Townhomes	35	Townhomes	35
	Apartment Buildings	48	Apartment Buildings	48
	Commercial Buildings	48	Commercial Buildings	48
	Industrial Buildings	50	Industrial Buildings	50
	Institutional Buildings	50	Institutional Buildings	50

2 Climate Adaption

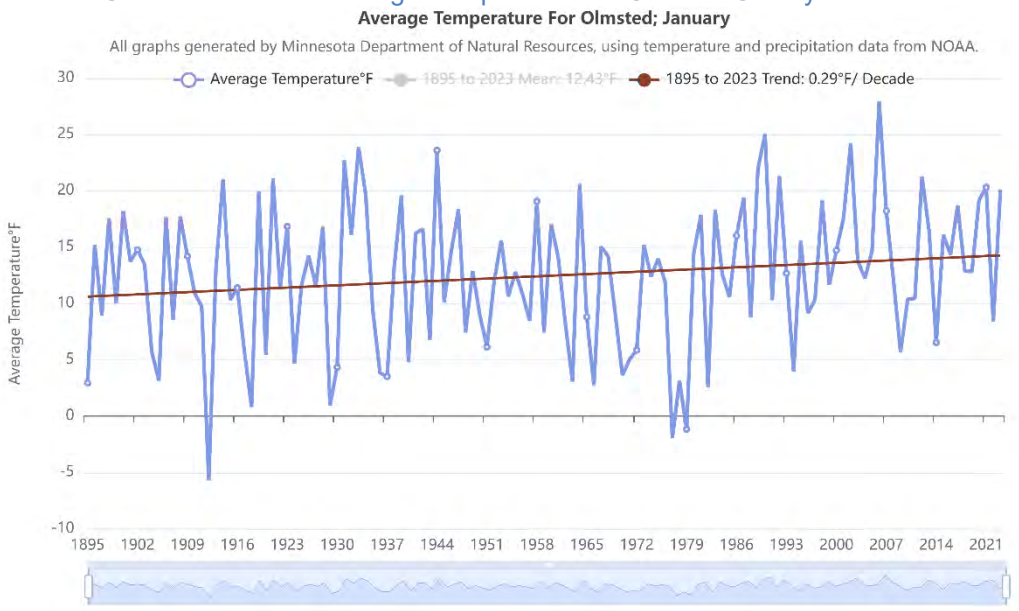
Describe the climate trends in the general location of the project (see guidance: Climate adaptation and Resilience) and how climate change is anticipated to affect that location during the life of the project.

a. *Describe the climate trends in the general location of the project (see guidance: Climate Adaptation and Resilience) and how climate change is anticipated to affect that location duringthe life of the project.*

In general, climate change projections for Minnesota predict a warmer and wetter climate, with more frequent extreme precipitation events. According to the Minnesota DNR, Minnesota has warmed by 3.0 degrees Fahrenheit between 1895 and 2020, and annual precipitation has increased by an average of 3.4 inches across the state[1].

Climate data available through the Minnesota Climate Explorer[2], demonstrates that historical average annual temperatures recorded in Olmsted County, have increased over the past century (1895 to 2023).

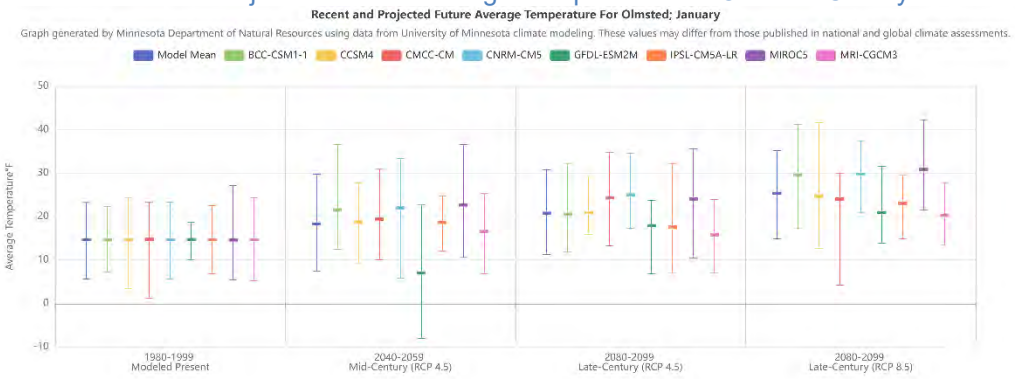
Chart 1. Historical Average Temperature for Olmsted County



Modelling results from University of Minnesota (as hosted on the Minnesota Climate Explorer[2]), predict that average temperatures for Olmsted County will continue to warm into the late century (2099).

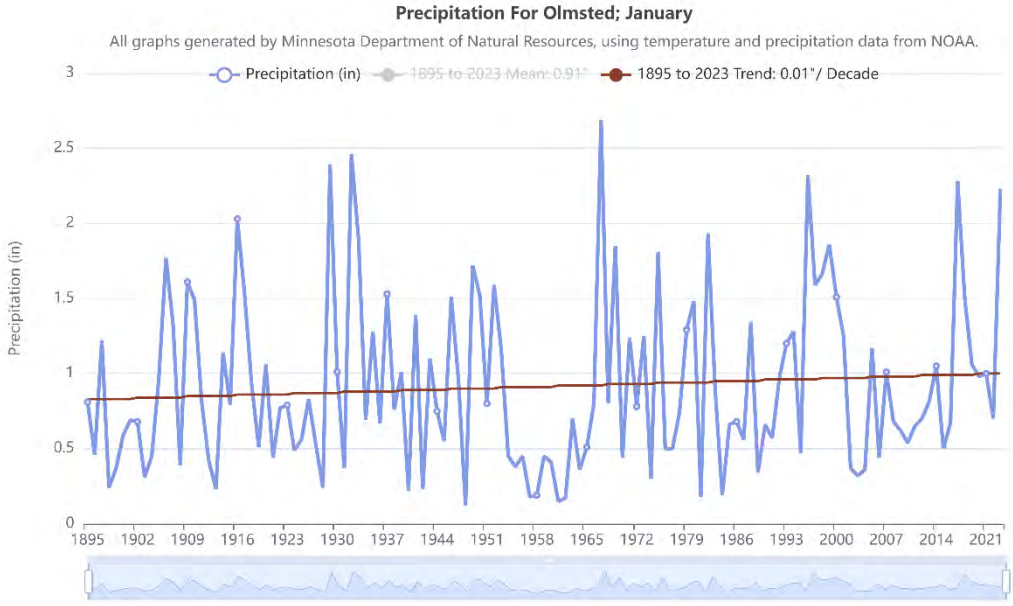
[1] Climate trends | Minnesota DNR (state.mn.us)
[2] Minnesota Climate Explorer (state.mn.us)

Chart 2. Recent and Projected Future Average Temperature for Olmsted County



Climate data available through the Minnesota Climate Explorer[3], demonstrates precipitation recorded in Olmsted County, has increased on average 0.01 inches, over the past century (1895 to 2023).

Chart 3. Historical Precipitation for Olmsted County



In general, projections for Minnesota predict that the days per year with more than 1-inch of precipitation will increase, but summer precipitation will be lower (i.e., precipitation events will be larger, but more infrequent) by the end of the century, as compared with the historical period of 1981-2010[4]. Climate change impacts at the location of the Project, will likely include warmer temperatures and more periods of drought with periodic flooding.

b. *For each Resource Category in the table below: Describe how the project's proposed activitiesand how the project's design will interact with those climate*

[3] Minnesota Climate Explorer (state.mn.us)
[4] Minnesota Climate Projections | Climate (umn.edu)

trends. Describe proposed adaptations to address the project effects identified.

Table 2 outlines resource categories and climate considerations that will be evaluated further during the AUAR.

Table 2 – Climate Adaptation and Resilience

Resource Category	Climate Considerations (example text provided below isto be replaced with project-specific information)	Project Information	Adaptations
Project Design	The selection of building materials and architectural styles, along with the site's overall design, can influence urban heat island effects in the area. This includes potential shifts in climate zones, changes in local temperature patterns, and an increased likelihood of prolonged heat events.	In the coming decades, the location of the study area is anticipated to experience: • Increased annual temperatures • Increased freeze thaw cycles • Medium urban heat island effect	Buildings could be designed with green or reflective roofs, fritted windows to reduce bird strikes and heat gain, and energy-efficient shells. Climate-smart landscaping, including tree plantings, would help cool the area and contribute to sustainability.
Land Use	This mixed-use development project will convert about half of the Project's land from open space or agricultural field into developed land uses, to impervious surface. There are no identified flood risks since the site is outside designated floodplain areas.	• Increased annual precipitation and more frequent heavy rainfall events • The study area is not within floodplain areas and therefore no risks are identified with increased flooding events. *See Section 5 of the AUAR for more info*	Design of the site and stormwater management facilities will meet City stormwater requirements which are designed to reduce the risk of flooding in the AUAR study area.
Water Resources	Current climate patterns in Minnesota and expected climate change in the project area could affect local water resources.	Due to statewide climate trends, water resources in the project area may warm, become more polluted, and experience volume changes from increased temperatures and runoff. More severe storm events are projected, so drainage systems must be maintained to handle increased rainfall. *See Section 7 of the AUAR for more info*	Stormwater best management practices (BMPs) will be designed to handle a 100-year storm event in accordance with City and Watershed requirements as the property develops. Infiltration areas may also be used to improve water quality and reduce stormwater runoff. Developers will use native plants and perennials for landscaping, and stormwater features will absorb water and lower irrigation needs.

Resource Category	Climate Considerations (example text provided below isto be replaced with project-specific information)	Project Information	Adaptations
Contamination/ Hazardous Materials/Wastes	Ongoing climate trends in Minnesota, along with projected future changes in the project area, could affect the environmental risks associated with the generation, use, and storage of hazardous materials and waste.	The proposed project site contains no known contaminated materials and is not expected to be affected by future climate trends. *See Section 8 of the AUAR for more info*	Additional information in Section 8.
Fish, wildlife, plant communities, and sensitive ecological resources (rare features)	Ongoing climate trends in Minnesota and expected future changes in the project area could impact local species and the availability of suitable habitats.	Habitat suitability for species may decline due to land use changes, rising temperatures, and increased runoff. *See Section 9 of the AUAR for more info*	Native plantings and stormwater BMPs will create suitable habitats for small mammals, insects, and birds that currently inhabit the developed area.

3 Cover Type

AUAR Guidance: The following information should be provided:

A cover type map, at least at the scale of a USGS topographic map, depicting:

- ✓ *Wetlands (identified by Circular 39 type)* – Please see Figure 8, NWI and Wetland Delineation Results
- ✓ *Watercourses (rivers, streams, creeks, ditches)* – Please see Figure 7, Surface Water Features
- ✓ *Lakes (identify public waters status and shoreland management classification)* – Please see Figure 7, Surface Water Features
- ✓ *Woodlands (break down by classes where possible)* – Please see Figure 3, Existing Land Cover
- ✓ *Grassland (identify native and old field)* – Please see Figure 3, Existing Land Cover
- ✓ *Cropland*– Please see Figure 3, Existing Land Cover
- ✓ *Current development* – Please see Figure 1, Location

An "overlay" map showing anticipated development in relation to the cover types. This map should also depict any "protection areas," existing or proposed, that will preserve sensitive cover types. Separate maps for each major development scenario should be generally provided.

Please see Appendix B for a depiction of Scenario 1 and Scenario 2.

Cover types within the project limits were determined through a combination of aerial imagery, available MLCCS data, and field reconnaissance. Generalized land cover of the project area is mainly turf grass (or lawn), grassland, woodland, or agricultural land (See **Figure 3**). The project area is generally flat. In the southern portion of the site, which is currently agricultural land, there

are some gentle rolling hills. The northern portion of the site is slightly lower in elevation and is dominated by woodlands and wetlands. Existing cover types and proposed post-project cover types within the project boundary are outlined in **Table 3**.

Table 3 – Landcover Pre and Post Project

	Acres		
Cover Types	**Current**	**Scenario 1**	**Scenario 2**
Wetlands and shallow lakes (<2 meters deep)	15.4	13	9.5
Deep lakes (>2 meters deep)	0	0	0
Wooded/forest	23.4	2	2.5
Mixed Wooded and Grass	104.6	0	0
Rivers/streams	0	0	0
Brush/Grassland	43.5	0	0
Cropland	75.8	0	0
Livestock rangeland/pastureland	0	0	0
Lawn/landscaping	21.4	166.9	175.9
Impervious surface	206.3	301	297
Stormwater Pond (wet sedimentation basin)	4	11.5	9.5
TOTAL	**494.4**	**494.4**	**494.4**

4 Permits and Approvals Required

AUAR Guidance: A listing of major approvals (including any comprehensive plan amendments and zoning amendments) and public financial assistance and infrastructure likely to be required by the anticipated types of development projects should be given for each major development scenario. This list will help orient reviewers to the framework that will protect environmental resources. The list can also serve as a starting point for the development of the implementation aspects of the mitigation plan to be developed as part of the AUAR.

The anticipated government permits and approvals required for the project are provided in **Table 4.**

Table 4 – Anticipated Permits and Approvals

Unit of Government	Type of Application	Status
Federal		
U.S. Army Corps of Engineers	Section 404 Permit for Wetland Impacts	To be obtained
U.S. Fish and Wildlife Service	Endangered Species Takings Permit (if federally listed species are impacted)	To be obtained (if required)
State		
Pollution Control Agency	National Pollutant Discharge Elimination System (NPDES) Construction Storm Water Permit	To be obtained
	Sanitary Sewer Permit	To be obtained
	Approval of remediation and cleanup plans, as applicable	To be obtained
	Intent to Perform Demolition Notification	To be obtained
	Air Permit	To be obtained
Department of Natural Resources	Temporary dewatering permit for construction	To be obtained, if needed
	Long-term DNR Water Appropriation Permit if dewatering or sump pumping in volumes that exceed 10,000 gallons per day or one million gallons per year.	To be reviewed and applied for if threshold is anticipated to be met
	Preliminary Well Construction Approval	To be obtained, if needed
	Water Use Permit	To be obtained, if needed
	Preliminary Well Construction Assessment (PWCA)	To be obtained, if needed for drilling a well that will be used to withdraw more than 10,000 gallons of water per day, or one million gallons per year
Department of Health	Watermain plan review	To be obtained

Unit of Government	Type of Application	Status
Regional/ County/ Local		
Olmsted County	New Well Construction Permit	To be obtained
	Well Sealing Permit	To be obtained if existing wells need to be sealed as part of the redevelopment
Rochester Olmsted Council of Governments (ROCOG)	Traffic Study review	In process
City of Rochester	Alternative Urban Areawide Review	In process
	Site Development Plan (SDP) review	To be obtained
	Final plat approvals	To be obtained
	Development agreements	To be obtained
	Obstruction Permit	To be obtained
	Excavation Permit	To be obtained
	Oversized Vehicle Permit	To be obtained
	Building permits	To be obtained
	Mass Excavation Permit	To be obtained, if needed
	Grading Permit	To be obtained
	Footing and Foundation Permit	To be obtained, if needed
	Public Works Review and Approval	To be obtained
	Certificate of Occupancy	To be obtained
	City/Owner Contracts	To be obtained
	Revocable Permit	To be obtained
	Historic Preservation Commission Review	To be obtained
	Street and Public Utility Vacations Permit	To be obtained

5 Land Use

Existing and Planned Land Uses and Zoning

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

Generalized land cover of the project area is mainly turf grass (or lawn), grassland, woodland, or agricultural land (See **Figure 3**). Woodside Park is a privately owned park that is only accessible to Rochester Technology Campus (RTC) tenants and is located within the project area, south of the existing IBM Campus. Associated paved pedestrian trails exist in and around Woodside Park. Other nearby public spaces outside the project area include several City of Rochester parks within one (1) mile of the site, but outside of the project area, and a trailhead for the paved multi-use Douglas Trail.

The Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS), NRCS electronic Field Office Technical Guide (eFOTG), and the Olmsted County Soil Survey were referenced to identify prime and unique farmland, and farmland of statewide and/or local importance within the project area. Soils mapped and designated by the NRCS as prime farmland, prime farmland if drained, and farmland of statewide importance are located within the vicinity of the project site as shown on **Figure 4** and outlined in **Table 5**. A more detailed discussion on soils is included in Section 6.2 below.

Table 5 – Soils within the site classified as Prime Farmland, Prime Farmland if Drained, and Farmland of Statewide Importance

Map Unit Symbol	Map Unit Name	Acres in Study Area	Farmland Rating
176	Garwin silty clay loam	38.2	Prime farmland if drained
203	Joy silt loam, 1 to 4 percent slopes	43.2	All areas are prime farmland
322C2	Timula silt loam, 6 to 12 percent slopes, moderately eroded	44.9	Farmland of statewide importance
477B	Littleton silt loam, 1 to 4 percent slopes	26.5	All areas are prime farmland
516B	Dowagiac silt loam, 2 to 6 percent slopes	14.9	All areas are prime farmland
1812B	Terril loam, sandy substratum, 1 to 6 percent slopes	9.5	All areas are prime farmland
N501B2	Downs silt loam, 2 to 6 percent slopes, moderately eroded	111.1	All areas are prime farmland
N501C2	Downs silt loam, 6 to 12 percent slopes, moderately eroded	17.3	Farmland of statewide importance
N536B	Tama silt loam, driftless, 2 to 6 percent slopes	10.8	All areas are prime farmland
N536C2	Tama silt loam, driftless, 6 to 12 percent slopes, moderately eroded	16.8	Farmland of statewide importance

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

There are two proposed scenarios for the project site. Scenario 1 proposes to construct 2,624 residential units, with a building footprint of approximately 4 million square feet. Scenario 2 proposes 1,920 residential units, with a building footprint of approximately 3 million square feet. Scenario 2 includes plans for a recreational facility near the center of the project.

The City's Comprehensive Plan (2040) designates future land uses at the project area as Mixed-Use Transit Oriented Corridors. Both scenarios are consistent with the Comprehensive Plan's designated future land uses. The Comprehensive Plan encourages broader adoption of mixed-use development in targeted areas to support integration of land use and transportation, housing diversity, and better connectivity for transit and pedestrians. Mixed-use development can reduce dependence on private vehicles, promote walkability, and provide housing near employment centers, lowering household transportation costs. While previously accommodated on a site-specific basis, the Plan recommends making mixed-use the foundation for new land use districts. The Rochester Tech Campus is identified as a major regional mixed-use center, highlighting its potential as a vibrant community hub.

The Comprehensive Plan also identifies a Primary Transit Network to serve major growth areas in Northwest Rochester. Key corridors in this network include Valleyhigh Drive NW and 37th Street North. While these corridors may take longer to reach targeted development intensities, they offer the best opportunity to connect the transit system and support major centers, such as potential transit-oriented development nodes at IBM and other key locations. Residential mixed-use redevelopment should be encouraged in these areas, with transit enhancements targeted to support such redevelopment.

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

AUAR Guidance: Water-related land use management districts should be delineated on appropriate maps, and the land use restrictions applicable in those districts should be described. If any variances or deviations from these restrictions within the AUAR area are envisioned, this should be discussed.

The project area is currently zoned as MX-C: Mixed Use Center, LI: Light Industrial, and SI: Special Industrial. Smaller areas of R3: Medium Density Residential and R2: Low Density Small Lot are present on the south side of the site (Figure 6). These zoning districts will allow a mix of residential housing types along with some retail and commercial opportunities to accommodate the existing office and light industrial uses of the site.

The site does not fall within any special zoning districts or water-related land use management districts. There are no land use restrictions.

There is no FEMA-mapped floodplain within the study area. The 100-year floodplain of the North Run of the North Fork of Cascade Creek is located approximately 0.56-mile south of the project area. There are no agricultural preserves, wild and scenic rivers, critical areas, or shorelands within the study area.

Compatibility with Plans

AUAR Guidance: The extent of conversion of existing farmlands anticipated in the AUAR should be described. If any farmland will be preserved by special protection programs, this should be discussed.

If development of the AUAR will interfere or change the use of any existing designated parks, recreation areas, or trails, this should be described in the AUAR. The RGU may also want to discuss under this item any proposed parks, recreation areas, or trails to be developed in conjunction with development of the AUAR area.

The AUAR must include a statement of certification from the RGU that its comprehensive plan complies with the requirements set out at Minnesota Rules, part 4410.3610, subpart 1. The AUAR document should discuss the proposed AUAR area development in the context of the comprehensive plan. If this has not been done as part of the responses to Items 6, 9, 11, 18, and others, it must be addressed here; a brief synopsis should be presented here if the material has been presented in detail under other items. Necessary amendments to comprehensive plan elements to allow for any of the development scenarios should be noted. If there are any management plans of any other local, state, or federal agencies applicable to the AUAR area, the document must discuss the compatibility of the plan with the various development scenarios studied, with emphasis on any incompatible elements.

The project will not impact any publicly accessible land. Within the property, there is a park that is currently accessible only to the existing IBM campus tenants. This park will be entirely affected by the project; however, no parks located outside of the project area will experience any impacts. Additionally, the Douglas Trail, a significant regional recreational resource, will remain unaffected. The project has been designed to ensure that public parks and recreational amenities beyond the project boundaries are preserved and continue to serve the community without disruption.

The project site includes approximately 331.8 acres of NRCS-designated prime farmland, the majority of which has already been converted for other uses. However, approximately 37 acres located in the southwestern section of the site, remains actively used for agriculture and will be converted as part of the project. Additionally, the project will impact more than 10 acres of soils classified as Prime Farmland of Statewide Importance. Since the project is not funded by a Federal or State program, there is no requirement for further consultation with the NRCS or the Minnesota Department of Agriculture (MDA). While this conversion represents a loss of agricultural land, it is consistent with the broader land use changes occurring within the area.

The project is compatible with nearby land uses, zoning, parks, trails, and other relevant plans, ensuring that amendments to the Comprehensive Plan will not be required. The proposed development aligns with existing zoning designations and surrounding land uses, supporting planned growth and development in the area. While the project will impact an on-site park accessible only to the RTC campus, no public parks or trails, including the Douglas Trail, will be affected. Additionally, the project is consistent with local and regional planning efforts, maintaining connectivity, preserving key infrastructure, and adhering to established land use policies without necessitating changes to the Comprehensive Plan.

The City of Rochester, as the Responsible Governmental Unit (RGU), certifies that its comprehensive plan complies with the requirements set forth in Minnesota Rules, part 4410.3610, subpart 1. The comprehensive plan has been prepared in accordance with applicable state regulations and has been developed to guide the orderly and sustainable growth of the community. The plan considers environmental, social, and economic factors and aligns with state and regional planning objectives.

This certification affirms that the comprehensive plan addresses land use, transportation, housing, natural resources, and other key elements necessary to support responsible

development while maintaining compliance with Minnesota's environmental review requirements. The City of Rochester remains committed to implementing its comprehensive plan in a manner that upholds these standards and serves the best interests of the community.

Measures to Mitigate Incompatibility

Both development scenarios are anticipated to be compatible with planned land use in the project area. No measures are needed to mitigate potential incompatibilities, as the project aligns with existing land uses, zoning, parks, trails, and relevant planning efforts.

6 Geology, Soils, and Topography/Landforms

6.1 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 Minnesota Geological Survey (MGS), *Olmstead County Geologic Atlas, County Atlas Series C-49* (MGS, 2020), bedrock geology underlying the project area includes both the Shakopee Formation and the St. Peter Sandstone. The Shakopee Formation is mapped as underlying a majority of the Site while the St. Peter Sandstone is only present in the area west of the RTC private roadway that circles the main RTC campus (formally identified as the IBM roadway ring). Stratigraphically, the Lower Ordovician aged Shakopee Formation is older and lies below the Middle to Lower Ordovician aged St. Peter Sandstone. The Shakopee Formation is described as a tan to gray dolostone, sandy dolostone, and sandstone, and the St. Peter Sandstone is described as a fine to medium grained, whitish-tan, quartzose sandstone with little to no structure.

Depth to bedrock at the project area is variable and ranges between 0 to 125 feet below ground surface (bgs). Depth to bedrock in the northwestern area of proposed development generally ranges between 0 and 50 feet bgs with localized areas extending to depths of up to 100 feet bgs. Depth to bedrock in the southeastern area of proposed development generally ranges between 50 and 100 feet bgs. Additionally, depth to bedrock in the area bound by the RTC roadway ring to the north and 31st Avenue Southwest to the east ranges between 100 and 125 feet bgs.

According to the MGS, *Olmstead County Geologic Atlas, Archived County Atlas Series C-03* (MGS, 1988), a majority of the project area is mapped as an area of low probability for sinkholes, and the northern and southeastern most portions of the project area are mapped as areas of moderate probability for sinkholes. No known sinkholes were identified within the area of proposed development.

A geotechnical study is already underway to evaluate potential karst risks in the project area. Preliminary findings indicate no abnormalities or significant karst features present. We will share the final results in the upcoming AUAR as they become available.

6.2 Topography and Soils

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 Minnesota Department of Natural Resources (DNR) *MnTOPO web mapping application*, topography at the site ranges between approximately 1,040 to 1,090 feet above mean sea level (amsl). The northwestern area of development ranges in elevation between approximately 1,040 and 1,070 feet amsl. The main RTC campus area is relatively flat with elevations ranging between 1,070 and 1,080 feet amsl, and the southeastern area of development generally slopes to the southeast with elevations ranging between approximately 1,090 and 1,050 feet amsl.

Native surficial soils in the project area consist of loamy diamicton of the Bowerville Formation and are described as unsorted sediments containing pebbles and scattered cobbles suspended in a yellowish brown to dark olive-gray loamy matrix (MGS, 2020).

According to the U.S. Department of Agriculture (USDA), *Web Soil Survey*, surficial soils throughout the project area include silty clay loam, silt loam, sandy loam, sandy substratum, and urban land. Most of the urban land is within the main IBM campus area inside the RTC roadway ring. Of the thirteen separate soil units identified, two have a hydric rating between 0 and 10, and are considered as predominately non-hydric, and two have a hydric rating of greater than 80 and are considered as predominately hydric. The remaining soils have a hydric rating of 0 and are considered as non-hydric. Farmland ratings for the project area vary between “not prime farmland” and “farmland of statewide importance”. Currently, only the southeastern portion of the site is being used for agricultural purposes. Erosion ratings range between slight to severe. Approximately 62% of the project area was rated as slight to moderate, approximately 9% of the total area was rated as severe, and the remaining area was not rated. **Table 6** summarizes the soil properties across the site.

Table 6 - Soil Properties obtained through the USDA Web Soil Survey

Map Unit Symbol	Map Unit Name	Acres in Study Area	Erosion Rating	Farmland Rating	Hydric Rating
176	Garwin silty clay loam	37.0	Slight	Prime farmland if drained	95
203	Joy silt loam, 1 to 4 percent slopes	41.7	Slight	All areas are prime farmland	5
244C	Lilah sandy loam, 6 to 12 percent slopes	3.2	Moderate	Not prime farmland	0
176	Garwin silty clay loam	38.4	Slight	Prime farmland if drained	95

Map Unit Symbol	Map Unit Name	Acres in Study Area	Erosion Rating	Farmland Rating	Hydric Rating
203	Joy silt loam, 1 to 4 percent slopes	43.4	Slight	All areas are prime farmland	15
244C	Lilah sandy loam, 6 to 12 percent slopes	3.5	Moderate	Not prime farmland	0
322C2	Timula silt loam, 6 to 12 percent slopes, moderately eroded	44.9	Severe	Farmland of statewide importance	0
468	Otter silt loam, channeled	16.2	Slight	Not prime farmland	95
477B	Littleton silt loam, 1 to 4 percent slopes	26.5	Moderate	All areas are prime farmland	10
516B	Dowagiac silt loam, 2 to 6 percent slopes	14.9	Moderate	All areas are prime farmland	0
1039	Urban land	140.9	Not Rated	Not prime farmland	0
1812B	Terril loam, sandy substratum, 1 to 6 percent slopes	9.5	Slight	All areas are prime farmland	5
N501B2	Downs silt loam, 2 to 6 percent slopes, moderately eroded	111.1	Moderate	All areas are prime farmland	0

7 Water Resources

AUAR Guidance: The information called for on the EAW form should be supplied for any of the infrastructure associated with the AUAR development scenarios, and for any development expected to physically impact any water resources. Where it is uncertain whether water resources will be impacted depending on the exact design of future development, the AUAR should cover the possible impacts through a "worst case scenario" or else prevent impacts through the provisions of the mitigation plan.

7.1 Surface Water and Groundwater Features:

Surface Water: Lakes, streams, wetlands, intermittent channels, and county/judicial ditches. All surface water features should be described and identified on a map of the project area. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality

impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within one mile of the project. Include DNR Public Waters Inventory number(s), if any.

Existing Hydrology

The existing hydrology of the intermittent streams and wetlands within the project area is characterized by concentrated areas of impervious surfaces in the middle of the campus, with pervious, vegetated areas around the perimeter. The site drains in five separate directions. There are connected ponds on the northwest edge near 41 St NW, an existing pond on the east side between the east parking lot and Marketplace Drive NW, and a basin at Woodside Park between the parking lot and Marketplace Drive. The field on the south side drains to a MnDOT pond in the southeast corner, while the southwest corner drains offsite to a ditch along 31st Ave NW. Although soils in the area appear to allow infiltration, the presence of existing ponds and wetland areas suggests that groundwater may be high throughout the site.

There are two mapped MNDNR Public Watercourses near the project area. Both are unnamed. One is located 0.67 miles north of the northern boundary of the project area and the other is 0.68 miles south of the southern boundary of the project. Both flow east and outlet into the Zumbro River. These waterways are included as part of **Figure 7**.

A wetland delineation was completed for the project area in June 2024. This field delineation was conducted to verify areas of interest observed using the National Wetlands Inventory. Eight (8) wetland basins were identified, delineated, and classified. Results of the wetland delineation are depicted on **Figure 7**.

A review of the state list of impaired waters identified no known impairments located within 1-mile of the project.

The Minnesota Pollution Control Agency (MPCA) lists both Cascade Creek (AUID 07040004-581) and Zumbro River (AUID 07040004-535) as impaired waters, both are located more than one (1) mile outside the project area. The Zumbro River is listed as impaired on the 2024 list for fecal coliform, aquatic macroinvertebrate bioassessment, and turbidity. Cascade Creek is listed as impaired on the 2024 list for aquatic macroinvertebrate bioassessment and turbidity. The project area is not within a Federal Emergency Management Agency (FEMA) floodplain, but FEMA floodplain is associated with both the Zumbro River and Cascade Creek.

Proposed Hydrology

With the potential removal of wetlands in the northwest portion of the Project and the addition of impervious surfaces, the proposed condition results in a significant increase in impervious area throughout the site. The drainage maps show separate drainage areas and their outfalls. Ponds are being modeled to determine proposed BMP footprints, conforming to both rate control and permanent pool requirements. The HydroCAD model (SEH, 2024) indicates that rate control can be met through stormwater ponds with designed outlet control structures. These structures include one outlet at the NWL of the pond, larger structures at higher elevations for heavier rainfall events, and intermediate outlets as necessary. All outlets are routed to a culvert outlet to ensure no uncontrolled water exits the pond. Larger ponds may need more than one outlet control structure, and a series of BMPs may need expansion or creation throughout the sub-watershed.

The proposed conceptual project includes five ponds with permanent pool footprints ranging from 0.2 to 1.7 acres. These footprints are estimated based on a 5-foot-deep permanent pool with a volume of 1,800 cubic feet per acre, accounting for side slopes. Actual footprints will be larger

since additional volume is needed to detain and treat runoff. Water quality has been modeled with an 18-inch depth requirement. If BMPs shift to biofiltration or infiltration practices, this footprint will be necessary; however, if ponds remain the chosen BMP, deeper live storage volumes could reduce the required footprint. While pond locations have not yet been finalized, it is anticipated that regional ponds will be used, with the possibility of supplementing them with smaller BMPs throughout the site. A stormwater analysis memo is included as **Appendix E.**

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 Minnesota Department of Health (MDH) *Source Water Protection Web Map Viewer*, the project area is located within the Rochester NW Wellhead Protection Area and Rochester NW Drinking Water Supply Management Area (DWSMA) with a high vulnerability.

Various sealed or active monitoring wells are located throughout the project area. Static water level recorded on MDH well records ranged from 5 to 52 feet below ground surface (bgs) with two deep monitoring wells measuring groundwater at 62.8 and 89 feet bgs, respectively.

Ten active groundwater monitoring wells are located within the area bound by the RTC roadway ring with static groundwater measured between 18.2 and 59 feet bgs. One active domestic water supply well is located within the area bound by the RTC roadway ring and was completed to a depth of 24 feet bgs with static water level measured at 12 feet bgs. Based on the depth of the well and its name “MW-620W”, it is assumed the well is a monitoring well that was inaccurately classified. Two industrial water supply wells are located within the area bound by the RTC roadway ring and were completed to depths of 403 and 780 feet bgs, respectively. One of the industrial wells includes Unique Well ID 220817, which used for air conditioning, has solid casing to 599 feet bgs and is screened in multiple aquifers from 599 to 780 feet bgs. This well is considered a “pre-code” well that was installed prior to when the MDH Well Code was established in 1974. Because of its status, the well is not required to meet current code conditions including the condition that wells can only be screened in a single aquifer.

According to the Minnesota Well Index, two active monitoring wells are located in the property surrounding the existing camps that is proposed for redevelopment. One well has a depth of 50 feet bgs, is screened in the unconsolidated Quaternary deposits and has a reported groundwater level of 48 feet bgs. The second well has a depth of 100 feet bgs, is screened in the Prairie du Chien bedrock and has a reported groundwater level of 93 feet bgs.

If wells need to be sealed as part of the redevelopment, they will be sealed in accordance with Olmsted County and Minnesota Department of Health rules by a licensed contractor and a Well Sealing Permit from Olmsted County will be obtained.

Please refer to the contamination section in Section 8 of the AUAR for a full discussion of PFAS impacts. IBM has completed groundwater sampling at the project area, concluding that VOC and 1,4-dioxane impacts are not present, while PFAS detections were likely due to cross-contamination from monitoring well materials. The MPCA concurred with these findings and is requiring additional assessment of PFAS. A March 1, 2024, IBM Memo concluded that no sources of PFAS exist at the project area, and IBM continues to carry out corrective actions under the 2014 CAA and Environmental Covenant.

7.2 Project Effects on Water Resources and Measures to Minimize or Mitigate the Effects

7.2.1 Wastewater

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

AUAR Guidance: Observe the following points of guidance on an AUAR:

- *Only domestic wastewater should be considered in an AUAR—industrial wastewater would be coming from industrial uses that are excluded from review through an AUAR process.*
- *Wastewater flows should be estimated by land use subareas of the AUAR area; the basis of flow estimates should be explained.*
- *The major sewer system features should be shown on a map and the expected flows should be identified.*
- *If not explained under Item 6, the expected staging of the sewer system construction should be described.*
- *The relationship of the sewer system extension to the RGU's comprehensive sewer plan and (for metro area AUARs) to Metropolitan Council regional systems plans, including MUSA expansions, should be discussed. For non-metro area AUARs, the AUAR must discuss the capacity of the RGU's wastewater treatment system compared to the flows from the AUAR area; any necessary improvements should be described.*
- *If on-site systems will serve part of the AUAR, the guidance in the February 2000 edition of the EAW Guidelines on page 16 regarding item 18b under Residential development should be followed.*

1) Wastewater Subsurface Sewer Treatment Systems (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.)

The entire project area is served by Rochester's municipal sanitary sewer collection system. Existing and proposed connections are included in **Appendix F**. The system uses gravity sewer lines to transport flow to the Water Reclamation Plant (WRP), which releases treated effluent into the South Fork of the Zumbro River. As of June 10, 2020, the Rochester WRP has a rated dry weather flow capacity of 15.86 million gallons per day (mgd) and an average wet weather flow capacity of 23.85 mgd, currently treating approximately 13 million gallons of wastewater per day on an annual average basis.

Final wastewater flows are dependent on the proposed water usage, which is discussed in further detail in section 7.2.3. IRG is working with the City of Rochester to ensure that the existing City sanitary sewer system has adequate capacity to meet the project's needs.

2) Wastewater Discharge to Surface Water (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. No subsurface sewage treatment systems (SSTS) are anticipated within the AUAR study area for either proposed development scenario.

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. No wastewater discharge to surface waters is anticipated for either proposed development scenario.

7.2.2 Stormwater:

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

AUAR Guidance: For an AUAR the following additional guidance should be followed in addition to that in EAW Guidelines:

- *It is expected that an AUAR will have a detailed analysis of stormwater issues.*
- *A map of the proposed stormwater management system and of the water bodies that will receive stormwater should be provided.*
- *The description of the stormwater systems would identify on-site and "regional" detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where on-site ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.*
- *If present in or adjoining the AUAR area, the following types of water bodies must be given special analyses:*
- *Lakes: Within the Twin Cities metro area, a nutrient budget analysis must be prepared for any "priority lake" identified by the Metropolitan Council. Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with the MPCA and DNR staffs.*
- *Trout streams: If stormwater discharges will enter or affect a trout stream, an evaluation of the impacts on the chemical composition and temperature regime of the stream and the consequent impacts on the trout population (and other species of concern) must be included.*

The development site is 494.4 acres, and the existing impervious surface area within the project area is approximately 166.2 acres. The total amount of impervious surface under each development scenario will be documented in the AUAR. Discharges from the current study area

drain in three different directions: to the north and east into two separate unnamed engineered waterways through the City before eventually outletting into the Zumbro river and to the southwest into an existing industrial park and a series of ponds and waterways before it eventually drains to Cascade Creek and Silver Lake before entering the Zumbro River, South Fork. In the existing condition, 25.7 acres drains to Cascade Creek and the remaining 468.7 acres to the Zumbro River. The proposed condition will result in minimal changes in the acreage to drain into these areas.

Both Cascade Creek (AUID 07040004-581) and Zumbro River (AUID 07040004-535) are impaired waters as described in item 7.1 above.

The City of Rochester requires that peak runoff rates remain the same for various rainfall events and mandates on-site stormwater retention for new impervious surfaces. The existing campus includes concentrated impervious areas served by stormwater ponds and wetlands that help manage drainage and groundwater levels that affect drainage and groundwater levels. The proposed design introduces new stormwater ponds to manage increased runoff, with modeling showing compliance with volume and rate requirements. A common plan of development approach will be used to manage stormwater collectively across all development parcels. **Appendix E** (Stormwater Analysis) addresses runoff rates, water quality, and volumes for the study area, and will include comparative analysis of existing and proposed conditions, identifying both temporary and permanent stormwater controls.

The National Pollution Discharge Elimination System (NPDES) permit requirements will be followed, and construction best management practices will be identified.

7.2.3 Water Appropriation:

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

AUAR Guidance: If the area requires new water supply wells, specific information about that appropriation and its potential impacts on groundwater levels should be given; if groundwater levels would be affected, any impacts resulting on other resources should be addressed.

Water Appropriation

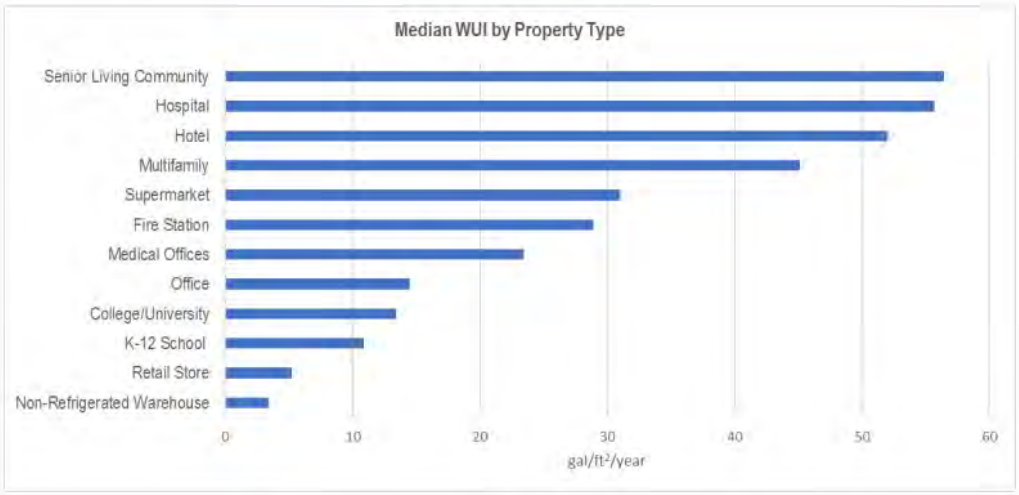
IRG is working with the City of Rochester – Public Works Department to evaluate water appropriation needs for the project site. This study will be included in the submittal of a General Development Plan application to the City of Rochester - Community Development Department.

Water Supply

The entire project area is served by Rochester Public Utilities (RPU), which provides a reliable water supply through a system of 32 municipal wells. These wells draw from five different aquifers—Shakopee, Jordan, Tunnel City, Wonewoc, and Mt. Simon—ensuring a stable and sustainable water source for the region. RPU's infrastructure supports both existing and future development, accommodating the anticipated growth within the project area.

The proposed development includes two potential scenarios of mixed-use land use, integrating residential, commercial, industrial, and recreational components. These scenarios are designed to promote a balanced and sustainable community, supporting economic growth while maintaining accessibility to essential services and amenities. The mix of uses is intended to enhance livability, encourage walkability, and provide opportunities for businesses, housing, and recreation to coexist within a thoughtfully planned environment.

Median Water Use Intensity by Property Type:



Appendix E describes a preliminary plan for the high, main, and low pressure area for water usage on the site. This map was developed with coordination of the City and will continue to be reviewed as project plans are formalized.

During the City of Rochester general development plan (GDP) process IRG will collaborate with RPU to formalize land use and unit counts. RPU and the City will approve any plans. The project will comply with applicable regulations and not exceed capacity of the existing infrastructure.

Mitigation strategies or system improvements are not anticipated to be required.

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.

The study area was examined on June 4th, 2024, for areas meeting the technical wetland criteria per the U.S. Army Corps of Engineers *Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE 2010). Minor revisions were made to the delineated wetlands following a Technical Evaluation Panel (TEP) visit on November 20th, 2024.

There are eight (8) wetlands that have been identified and delineated within the project area. The decision document for the Wetland Delineation is included in **Appendix G**.

The wetlands identified are provided in **Figure 7** and are outlined in **Table 7**, below.

Table 7 – Wetland and Aquatic Resources Characteristics

Wetland ID	Size (acres)[1]	Eggers & Reed Classification	Circular 39/ Cowardin Classification
1	1.232	Fresh (Wet) Meadow	Type 2 / PEMB
	2.8832	Shrub-carr	Type 6 / PSS1C
2	4.0722	Hardwood Swamp	Type 7 / PFO1B
3	0.3567	Hardwood Swamp – Wet Ditch	Type 7 / PFO1B
	0.4183	Shallow Marsh – Wet Ditch	Type 3 / PEM1C
4	0.0646	Shallow Marsh – Wet Ditch	Type 3 / PEM1C
5	1.2369	Hardwood Swamp	Type 7 / PFO1B
	0.0091	Shallow Marsh	Type 3 / PEM1C
6	0.2059	Fresh (Wet) Meadow	Type 2 / PEMB
7	3.9474	Shallow Open Water Community – Storm Pond	Type 5 / PUBH
8	1.3457	Fresh (Wet) Meadow	Type 2 / PEMB

[1] Size includes areas of wetland within the area of investigation only. Wetlands may extend beyond the limits of the area investigated and actual wetland size may be larger than that indicated.

The proposed development will avoid wetlands to the greatest extent practicable as required by the Minnesota Wetland Conservation Act (WCA) and Section 404 of the Clean Water Act, but some wetland impacts may be unavoidable. The project would be required to comply with all federal, state, and local wetland requirements including wetland mitigation requirements. Mitigation for unavoidable wetland impacts would likely be through the purchase of wetland credits from an established wetland bank.

For the proposed project, a permit will be required to address the permanent loss of wetlands. This project is expected to proceed under Nationwide Permits 29 and 39, as stipulated under Section 404 of the Clean Water Act. Scenario 1 will result in an impact of 2.4 acres, while Scenario 2 will result in an impact of 3.5 acres. Both scenarios focus on the northern portion of the site, where the wetland impacts will occur. The permit application will detail the purpose and need for the project, summarize the sequencing process, and outline a wetland replacement plan to mitigate these impacts.

Wetland mitigation for the project will be achieved through the purchase of credits from an approved, privately owned wetland mitigation bank in Olmsted County. This approach ensures

that wetland impacts are properly compensated in accordance with the requirements of the U.S. Army Corps of Engineers (USACE) and the Minnesota Wetland Conservation Act (WCA). By utilizing credits from the mitigation bank, the project will offset wetland losses while maintaining ecological functions and values. This method provides a dependable and effective way to meet regulatory obligations and support environmental sustainability in the region.

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.

AUAR Guidance: Water surface use need only be addressed if the AUAR area would include or adjoin recreational water bodies.

There are no other surface waters within the project area, and alterations to surface waters outside the project area, such as the Zumbro River and Cascade Creek, are not anticipated with redevelopment.

8 Contamination/ Hazardous Materials/ Wastes

For a, generally only the estimated total quantity of municipal solid waste generated and information about any recycling or source separation programs of the RGU need to be included. No response is necessary for b. For c, potential locations of storage tanks associated with commercial uses in the AUAR should be identified (e.g., gasoline tanks at service stations).

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.

Two Phase I Environmental Site Assessments (ESAs) have been prepared for the Site or portions of the Site:

- Partner Assessment Corporation, October 26, 2017, *Phase I Environmental Site Assessment of the IBM Property, 3605 US Highway 52 North, Rochester, Minnesota 55901.*
- Hull & Associates Inc., March 2020, *Phase I Environmental Site Assessment of the Rochester Campus Buildings 107, 108 & 111, 3605 US Highway 52 North, Rochester, Minnesota 55901.*

Based on review of the Phase I ESAs, the portion of the project area proposed for redevelopment (i.e., the portion of the Site located outside the of the ring road), historically was developed as

farmland. Farmsteads were located on the southern portion of the project area since at least 1937 until the early 1970s.

The area of the project area within the ring road also was historically farmland until 1957 when construction of buildings associated with IBM's campus began. The campus includes 31 buildings that were used for computer-related manufacturing, offices, warehouse and distribution, and buildings support areas including a central utility plant and wastewater treatment plant.

The 2017 Phase I ESA was prepared for the entire project area in accordance with ASTM Standard E1527-13. The report did not find recognized environmental conditions (RECs) but identified a controlled recognized environmental condition (CREC) in connection with a Minnesota Pollution Control Agency (MPCA) investigation relating to 13 Resource Conservation and Recovery Act (RCRA) Solid Waste Management Units (SWMUs) located within the ring road. Investigations in the late 1980s identified a release from a degreasing area and a release of plating wastewater at Building 106 that impacted soil and groundwater with elevated concentrations of cadmium, chromium, nickel, and cyanide. Impacted soil was excavated; however, impacts remain beneath building slabs that were not accessible. Additionally, in 1996, a crack in an AST that was used to store treated nickel plating solution was discovered near Building 315. IBM estimated that approximately 500 gallons of the solution, primarily composed of boron, sodium, phosphate, and sulfate, was released. A third area of groundwater with nickel impacts was discovered near Building 201, which was later determined to be cross-contamination from stainless steel well materials. Ongoing groundwater monitoring and treatment is being conducted. In 2014, a Corrective Action Agreement (CAA) and Environmental Covenant (amended in year) was established between the MPCA and IBM requiring IBM to carry out corrective actions at the project area.

The 2017 Phase I ESA report also identified issues within the ring road. MPCA Leak incidents #LS0006030, #LS0006031, and #LS0015796, which were granted regulatory closure were identified as a Historical Recognized Environmental Condition (HREC). The 2017 report also identified PCB contamination in the sewer lines, bulk maintenance and use of petroleum products and chemical compounds, and potential for asbestos containing materials (ACMs) to be present within structures as environmental issues.

The 2020 Phase I ESA was prepared for three buildings on the IBM campus and was prepared in accordance with ASTM Standard E1527-13. The buildings reviewed were formerly offices, laboratories, maintenance equipment storage, and a manufacturing facility (Building 111). No RECs were identified in the report.

A March 1, 2024 *Annual Corrective Measures Implementation Evaluation*, prepared by GHD, provides a summary of previous and ongoing corrective measures being conducted on the portion of the project area within the ring road. Following discovery of the releases at Building 106, impacted soil has been excavated for offsite disposal, groundwater monitoring was initiated, and a groundwater extraction system was operated from the 1980s until 2016. Groundwater monitoring results at Building 106 have indicated that chromium concentrations have been below cleanup standards for three years, allowing IBM to request that the groundwater monitoring activities be discontinued per the CAA. In addition to the groundwater monitoring, IBM conducted a soil investigation below a wastewater treatment tank Building 106, which indicated that concentrations of volatile organic compounds (VOCs) did not exceed residential standards. Therefore, IBM requested that closure be approved for Building 106.

According to the March 2024 report, sampling of monitoring of groundwater wells associated with Building 315 was discontinued in 2023; however, the extraction well at Building 315 continues to operate and is monitored quarterly for boron, the contaminant of concern associated with the release. Boron concentrations in the extraction well have decreased but are slightly above the action level. IBM recommended that the extraction well at Building 315 continue to be operated, but asked the MPCA to reconsider the monitoring requirement given the concentration slightly exceeds the action level and the low risk posed by the contamination.

As requested by the MPCA, IBM also completed a groundwater sampling event to evaluate the presence of VOCs; 1,4-dioxane; and per- and polyfluoroalkyl substances (PFAS). Based on the results of the investigation IBM concluded VOC and 1,4-dioxane impacts were not present, and while PFAS were detected, their presence was likely attributed to cross contamination from monitoring well materials such as Teflon. The MPCA concurred with the conclusions regarding VOC and 1,4-dioxane impacts; however, the MPCA is requiring additional assessment of potential PFAS impacts.

In response, a March 1, 2024 IBM Memo titled *Former IBM Rochester Minnesota Facility Usage of Per-And Polyfluoroalkyl Substances* (PFAS) was prepared. The memo stated that IBM reviewed past operations, chemical usage, and spills for the project area and concluded that sources of PFAS in groundwater are not present at the project area. During the scoping AUAR, the DNR asked for additional information regarding the status of the PFAS investigation. We understand IBM is responsible for carrying out corrective actions at the project area under the 2014 CAA and Environmental Covenant. The PFAS investigation is ongoing, and updates will be provided as they become available.

Redevelopment is proposed for the area outside of the existing campus and will not impact the active remediation areas at Building 106 and Building 315. However, two active monitoring wells are located in the area proposed for redevelopment. If the proposed redevelopment has the potential to impact the wells (i.e., require that the wells be sealed, relocated, or modified), changes to the monitoring well network will only be made with approval by the MPCA and IBM.

Farmsteads were historically located on the southern portion of the project area where redevelopment is proposed. Orphaned/unregistered drinking water wells and USTs, buried debris from former structures, and farm dumps are commonly associated with farmsteads.

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.

Construction activities for the project will generate typical solid waste materials, including wood, concrete, metal, and plastics. These materials will be recycled or disposed of at approved facilities in accordance with applicable regulations. Once operational, the development will result in increased solid waste generation from commercial, industrial, and other non-residential uses, requiring expanded waste management and sanitation services.

Solid waste disposal and management during both construction and operation will comply with all relevant laws, rules, and ordinances, including Chapter 3500 of the Olmsted County Ordinances & Codes (Solid Waste Management Ordinance) and the 2022-2032 Olmsted County Solid Waste Management Plan. The Ordinance prohibits yard waste and recyclable materials from entering

the Mixed Municipal Solid Waste (MMSW) stream and mandates volume/weight-based pricing to encourage recycling and waste reduction. A designated collection area for recyclable materials will be provided on-site, with materials transported to an appropriate recycling facility. Recycling efforts will follow the requirements outlined in the 2016 Recycling Law (Minnesota Statutes Chapter 115A), including Sections 115A.151 and 115A.552, to promote sustainability and responsible waste management.

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.

Construction activities for the project will involve the use and storage of various chemicals and hazardous materials, including petroleum products such as gasoline, diesel, and lubricants, as well as adhesives, resins, solvents, polymer bonding agents, and surface sealers. Temporary fueling tanks for construction equipment will likely be placed at multiple locations throughout the site. While the exact number, location, and size of these tanks are not yet determined, all temporary storage and fueling operations will comply with applicable state and local regulations. In the event of an accidental spill or release of petroleum or hazardous materials, the incident will be promptly contained, reported to the Minnesota Duty Officer as required, and properly cleaned up, with all waste materials managed in accordance with regulatory requirements.

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 wastes (e.g., contaminated media), if encountered during future construction, will be managed in accordance with local, state, and federal regulations, including any contingency plans and/or response action plans developed under the development scenarios. No buildings will be demolished as part of this project.

9 Fish, Wildlife, Plants, Communities, and Sensitive Ecological Resources (Rare Features)

The description of wildlife and fish resources should be related to the habitat types depicted on the cover types maps (of item 10). Any differences in impacts between development scenarios should be highlighted in the discussion.

For an AUAR, prior consultation with the DNR Division of Ecological Resources for information about reports of rare plant and animal species in the vicinity is required. Include the reference numbers called for on the EAW form in the AUAR and include the DNR's response letter. If such consultation indicates the need, an on-site habitat survey for rare species in the appropriate portions of the AUAR area is required. Areas of on-site surveys should be depicted on a map, as should any "protection zones" established as a result.

Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

The project is located within the Rochester Plateau subsection of the Paleozoic Plateau Section of the Eastern Broadleaf Forest Province. Pre-settlement vegetation of the subsection included tallgrass prairie and bur oak savannah that was converted into farmland. Oak openings and barrens were historically abundant, but most remaining areas are small and spread out. Within the project area, farmland, grassland, open/maintained green space, wetlands, and wooded areas and buffers surround existing industrial development. Existing land use surrounding the project includes residential, commercial, and industrial development, and farmland.

A few larger wooded areas are present within the project site that could support urban wildlife, including species such as white-tailed deer, squirrels, raccoons, etc., and bird species. Multiple wetland complexes and stormwater ponds are present within the site, with a variety of open and wooded wetland types. Several unnamed intermittent streams are mapped within the project area, typically associated with wetlands. The nearest public watercourses are an unnamed tributary to the Zumbro River and an unnamed tributary to Cascade Creek, approximately 0.75-miles to the north and south, respectively.

Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number and/or correspondence number from which the data were obtained and attach the Natural Heritage Review letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

Minnesota Department of Natural Resources Consultation & State-Listed Species

A request for a Natural Heritage Review was submitted through the Minnesota Conservation Explorer (MCE) on April 5, 2024, Correspondence # MCE 2024-00350. A final Natural Heritage Review letter was received on June 7, 2024, and is included in Appendix D. The Minnesota DNR noted that while the NHIS tracks some bat roosting and hibernation sites, the data is not comprehensive, and all bat species, including the federally endangered northern long-eared bat, are found throughout the state. Bats roost in trees from April to November, and tree removal during this period—especially from June 1 to August 15, when young bats are unable to fly—can destroy important habitat. To minimize impacts, the DNR recommends avoiding tree removal during this timeframe.

State-Listed Species

State-listed species within a 1-mile buffer of the proposed project were identified using license LA 2022 033. Edible valerian (*Valeriana edulis* var. *ciliata* – State Threatened) is within the buffer. The species typically occurs in moist, sunny calcareous habitat, including calcareous fens, wet meadows, and moist prairies, often along railroad right-of-ways. Within the Paleozoic Plateau, it occurs within drier sites with thin, rocky soil, and on cliff ledges associated with dry bluff prairie.

Federally-Listed Species

According to a planning-level query of the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation System (IPaC) requested April 5, 2024, the project area is within the distributional range of federally-listed species. These include the endangered northern long-eared bat *(Myotis septentrionalis*), the proposed endangered tricolored bat (*Perimyotis subflavus*), an experimental population of whooping crane (*Grus americana*), the endangered rusty patched

bumble bee (*Bombus affinis*), candidate species monarch butterfly (*Danaus plexippus*), and threatened prairie bush-clover (*Lespedesa leptostachya*) as summarized in **Table 8** below.

Table 8 – Federally-Listed Species

Species	Status	Habitat
Northern Long-eared Bat (*Myotis septentrionalis*),	Endangered	Roosts trees in forests during active season from April through October. Hibernate in caves and mines October through April.
Tricolored Bat (*Perimyotis subflavus*).	Proposed Endangered	Roosts trees in forests during active season from April through October. Hibernate in caves and mines October through April.
Whooping Crane (*Grus americana*)	Experimental Population	The whooping crane breeds, migrates, winters, and forages in a variety of wetland habitats.
Rusty Patched Bumble Bee (*Bombus affinis*)	Endangered	Nest in abandoned rodents nests or mammal burrows in upland grasslands and shrublands during the summer and fall. Overwinter in upland forest and woodlands.
Monarch Butterfly (*Danaus plexippus*)	Candidate	Grassland/prairie habitat where milkweeds (*Asclepias* spp.) and other forbs are present.
Prairie Bush-clover (*Lespedesa leptostachya*)	Threatened	Well drained dry-mesic tall-grass prairies in Minnesota

There are no known occurrences of northern long-eared bat or tricolored bat roosts or hibernacula within or adjacent to the Project, and the nearest known occurrences are greater than 15 miles away.

IPaC did not identify any mapped critical habitat within or adjacent to the Project. The project is located within the USFWS mapped High Potential Zone for the Rusty Patched Bumble Bee (RPBB). The High Potential Zone is delineated using a model to suggest areas with the highest potential for RPBB to be present based on typical bumble bee foraging distances, estimated dispersal distances, and ability of bumble bees to move through various land cover types.[5]

Native Plant Communities & Minnesota Biological Survey Sites of Biodiversity Significance

There are no Minnesota Department of Natural Resources (MnDNR) Native Plant Communities (NPCs) mapped within the project area, and the nearest Minnesota Biological Survey Site of Biodiversity Significance is Quarry Hill Park, located approximately three (3) miles to the east.

Calcareous Fens

The nearest known calcareous fen is Haverhill 19, located over three (3) miles east of the Project.

MnDNR Old Growth Stands

Old-growth forests are natural forests that have developed over a long period of time, generally at least 120 years, without experiencing severe, stand-replacing disturbances such as fires,

[5] USFWS. High Potential Zone Model for Rusty Patch Bumble Bee. https://www.fws.gov/media/high-potential-zone-model-rusty-patched-bumble-bee)

windstorms, or logging. The nearest old-growth forest is located over 12 miles southeast of the Project.

Minnesota Prairie Conservation Plan

The Minnesota Prairie Conservation Plan, a 25-year strategy for accelerating prairie conservation in the state, identifies Core Areas, Corridors, and Corridor Complexes as areas to focus conservation efforts. No Core Areas, Corridors, or Corridor Complexes were identified in the vicinity of Project.

Lakes of Biological Significance

Lakes of Biological Significance are high quality lakes as determined by the aquatic plant, fish, bird, or amphibian communities present within the lake. There are no Lakes of Biological Significance located within a 25 mile radius of the Project.

Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project including how current Minnesota climate trends and anticipated climate change in the general location of the project may influence the effects. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separatelydiscuss effects to known threatened and endangered species.

Vegetation

Much of the proposed project area has been developed or impacted by development. The most expansive existing cover type is impervious, comprising approximately 166 acres or 1/3 of the area. Wooded areas are the second largest cover type, spanning approximately 141 acres. The wooded areas are not contiguous and dissected by roads or other development. The largest wooded area is approximately 17.2 acres in size. Unmanaged grassland comprises approximately 61 acres of the site.

The proposed development would convert approximately 139 acres of woodland and 60 acres of grassland for the creation of additional impervious, open green space, and stormwater ponds. Temporary construction-related impacts would also be anticipated to occur, and temporary staging areas could impact native vegetation depending on location and duration. Soil disturbances during construction may provide conditions suitable for infestations nonnative and/or invasive plant species.

Fish and Wildlife

The wooded habitat present within the project area is generally dissected by roadways and other development. The project is immediately surrounded by development and the woodlands may provide refuges for urban wildlife. The project would result in conversion and ultimately the loss of wooded habitat and could degrade the wildlife habitat is left through soil disturbance and sedimentation, vegetation clearing, noise and light pollution from motorists, and the introduction of invasive plant species. No direct impacts to fish are anticipated due to the lack of suitable habitat within the project area. The project would increase impervious surface in the project area thereby increasing runoff which could impact aquatic species if not properly treated.

Rare Features/Habitats

Invasive plant species could be spread along roadways, expanding their populations and seedbank across the landscape, thereby increasing the likelihood of infestation elsewhere.

State- and Federally-Listed Species

State-Listed Species

According to the MNDNR, conversion and destruction of native fen and prairie habitats and plant encroachment has been the largest threat to edible valerian in Minnesota. Draining of wetland habitat, conversion to agriculture, and invasion of non-native and/or woody plant species has resulted in decline of the species to small, fragmented populations within fen and prairie remnants along roadside and railroad rights-of-way. An immediate threat is encroachment by woody plants or taller more aggressive plants that can either shade or crowd out the species that requires open sunny conditions. Wildfire suppression has likely affected the species, resulting in less open prairie habitat.

Fen and intact native prairie—and therefore habitat for listed plant species—are unlikely to be present in the project area based on a preliminary review of aerial imagery. As such, no adverse impacts to state-listed species are anticipated.

Federally-Listed Species

The MNDNR indicates prairie bush clover only occurs in native tallgrass prairie of the Midwestern states. Loss of tallgrass prairie habitat has been detrimental to the species and resulted in its decline. Primary threats have included conversion to agriculture, overgrazing, herbicide use, urban expansion, aggregate extraction, and right-of-way maintenance. Additional threats include encroachment by non-native and woody plant species, restricting sun exposure. Intact native prairie is unlikely to be present within the project area, therefore no adverse impacts to federal-listed plant species are anticipated.

The project as proposed would result in tree clearing and has the potential to adversely impact bat species. The USFWS indicates removal of trees during bat active season (April 1 to October 31) and pup season (June 1 to July 31) should be avoided.

Land disturbance and management activities have the potential to adversely impact the RPBB and suitable habitat, with the major threats including urban development and agriculture. Such activities include, but are not limited to, loss of natural habitat, tree or vegetation clearing, pathogens from non-native bee populations, use of pesticides (herbicides, insecticides, fungicides, etc.), haying, and livestock grazing. The project may result in loss of natural habitat used by RPBB, and the species may be adversely affected by construction activities.

Climate Trends:

Over the upcoming decades, Minnesota's climate is expected to undergo changes, marked by a consistent rise in both average temperatures and precipitation per decade. Given the current scarcity of wildlife habitat in the project area, it is predicted that the effects of climate change on any potentially existing species at the site in the future will likely be minimal or non-existent within the scope of the proposed project. The broader regional climate changes outlined in Section 7, such as altered precipitation patterns and higher temperatures, are anticipated to impact wildlife on a larger scale across their ranges, manifesting with varying degrees of severity.

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

Vegetation

Ground disturbance associated with construction would be minimized to the greatest extent practicable, including limiting the size of construction staging areas and access routes.

Construction staging will be located within previously disturbed areas to avoid impacts to native vegetation. After construction, re-grading and re-establishment of appropriate vegetation will be completed. Areas not proposed for turf vegetation will be seeded with BWSR-approved, weed-free native seed mixes, which require less irrigation and soil inputs than traditional landscaping. These native plantings, including pollinator habitat features, will provide valuable habitat for the federally endangered rusty patched bumble bee.

Fish and Wildlife

Tree clearing would occur between November 15th to March 31st to mitigate potential impacts to bat species. See section 7.2 for details regarding the proposed permanent stormwater treatment solutions to mitigate potential impacts from runoff from impervious surface.

Federally-Listed Species

Tree clearing would be restricted to between November 15th and March 31st to not coincide with the active season of the northern long-eared bat and the tricolored bat.

Possible methods to mitigate negative impact to RPBB include mowing prior to construction activities, native plantings with state-approved native seed mixes for disturbed areas following construction, establishing pollinator habitat/gardens and pesticide free zones within the development, and limiting invasive species spread during construction. Construction impacts are anticipated to be temporary, and following completion establishing native vegetation with mixes of forbs to re-establish foraging and breeding habitat may provide long-term habitat. Additional consultation with the US Fish and Wildlife Service is expected to evaluate potential effects to the RPBB.

10 Historic Properties

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

AUAR Guidance: Contact with the State Historic Preservation Office and State Archaeologist is required to determine whether there are areas of potential impacts to these resources. If any exist, an appropriate site survey of high probability areas is needed to address the issue in more detail. The mitigation plan must include mitigation for any impacts identified.

The City of Rochester is coordinating efforts with the MN State Historic Preservation Office (SHPO) for potential needs. SHPO has not provided any comments on either Scenario to the City of Rochester. No building demolitions are planned as part of the proposed project.

11 Visual

Scenic views or vistas may include spectacular viewing points along lakes, rivers or bluffs; virgin timber tracts; prairie remnants; geological features; waterfalls; specimen trees; or plots of wildflowers. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

AUAR Guidance: Any impacts on scenic views and vistas present in the AUAR should be addressed. This would include both direct physical impacts and impacts on visual quality or integrity. If any non-routine visual impacts would occur from the anticipated development this should be discussed here along with appropriate mitigation.

There are no scenic views or vistas within or near the project area. Site lighting under each scenario will be consistent with City of Rochester ordinances. A lighting plan will be developed and submitted to the City of Rochester during the site planning review and approval stage.

Under Scenario 2, which includes a sports complex, lighting will be directed downward to focus on the fields, reducing impacts on adjacent properties. Lighting under Scenario 2 will only be used during field activities and will be turned off when the fields are not in use, ensuring that it is not on continuously. Additionally, outdoor lighting will be used seasonally, with no usage during winter months when fields are not active. Under Scenario 1, the area in the center of the property will be developed with multifamily housing and open space and no additional lighting is anticipated. In both scenarios, outdoor lighting on all buildings will be provided to enhance safety and security for residents and visitors, designed to be energy-efficient, shielded, and directed to minimize impacts on neighboring properties.

12 Air

Stationary Source Emissions: *Describe the type, sources, quantities, and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used to assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.*
AUAR Guidance: This item is not applicable to an AUAR. Any stationary air emissions source large enough to merit environmental review requires individual review.

Not applicable.

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

AUAR Guidance: Although the MPCA no longer issues Indirect Source Permits, traffic-related air quality may still be an issue if the analysis in the traffic section indicates that development would cause or worsen traffic congestion. The general guidance from the EAW form should still be followed. Questions about the details of air quality analysis should be directed to MPCA staff.

Motor vehicles emit airborne pollutants (such as mobile source air toxics [MSATs]), thereby affecting air quality. The Environmental Protection Agency (EPA) regulates air pollutants including ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Potential impacts resulting from these pollutants are assessed by comparing estimated concentrations to National Ambient Air Quality Standards (NAAQS). Advances in vehicle technology and fuel regulations will result in reduced vehicle emissions.

The Minnesota Department of Transportation (MnDOT) has developed a screening method designed to identify intersections that will not cause a carbon monoxide (CO) impact above state standards. Based on the project's geographic location in Olmsted County, no quantitative modeling is required to assess CO impact according to MnDOT's Air Quality Process. Quantitative modeling would only be required by MnDOT for MSAT analysis if the future traffic volumes within the project area exceed 140,000-150,000 Annual Average Daily Traffic (AADT) and the project is adding capacity. None of the intersections in the study area exceed the criteria that would lead to a violation of the air quality standards.

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 orders.*

AUAR Guidance: Dust and odors need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any dust control ordinances in effect.

During construction, dust will primarily come from earthwork activities such as grading, excavation, vehicle movement on unpaved surfaces, and material handling, consisting mostly of fine soil and construction particulates. Dust generation will be temporary and vary with weather and construction phases, with the highest levels during site clearing and grading. Odors are expected to be minimal, mainly from equipment exhaust and occasional paving or curing activities, with no significant odors anticipated during project operation. Nearby sensitive receptors, including residences and parks, could experience short-term, localized effects on air quality and quality of life. To minimize these impacts, best management practices will be implemented, such as watering exposed soils and stockpiles, limiting vehicle speeds, stabilizing materials, controlling erosion, maintaining equipment to reduce emissions, and scheduling activities to limit emissions. These measures aim to effectively reduce dust and odors and protect the surrounding community throughout construction.

13 Greenhouse Gas (GHG) Emissions/ Carbon Footprint

GHG Quantification: For all proposed projects, provide quantification and discussion of project GHG emissions. Include additional rows in the tables as necessary to provide project-specific emission sources. Describe the methods used to quantify emissions. If calculation methods are not readily available to quantify GHG emissions for a source, describe the process used to come to that conclusion and any GHG emission sources not included in the total calculation.

The AUAR will outline the potential greenhouse gas emissions that will result from the construction and operation of the proposed development. Greenhouse gases will be quantified for Scope 1 and Scope 2 emissions, including electricity, natural gas, waste management, land conversion, and mobile sources.

Greenhouse gas (GHG) emissions related to the project were calculated using emission factors from the U.S. Environmental Protection Agency (EPA)[6] and consumption data from the U.S. Energy Information Administration (EIA)[7]. The projected GHG emissions are projected for an annual basis using the CO_2 equivalent (CO_{2e}), and include the proposer's best estimate for average emissions related to the project. The estimate includes emissions for the construction and the operational phases of the project. Emissions were estimated using the EPA's Simplified GHG Emissions Calculator (SGEC; April 2024 Version)[8]. The full SGEC workbook is attached as **Appendix C**.

For the purposes of this assessment, GHG emissions for the two (2) project options were evaluated.

- Option 1: 2,200 apartment units, 424 townhomes, 854,000 square feet of commercial building areas, 650,000 square feet of industrial building area, and 1,540,600 square feet of recreational and common areas.
- Option 2: 1,700 apartment units, 220 townhomes, 854,000 square feet of commercial building areas, 650,000 square feet of industrial building area, and 2,417,800 square feet of recreational and common areas, including an Athletic Park (250,000 square feet of indoor facility, the remaining are outdoor fields).

Emission categories for the two (2) project options are summarized in the Tables, below.

Option 1 – Emission Categories for GHG Assessment

Emission Category	Scope	Project Phase	Emission Type	Estimated CO_{2e} (metric tons)
Direct	Scope 1	Construction	Mobile Sources	6,724
Direct	Scope 1	Construction	Land-Use Conversion	351
Direct	Scope 1	Operations	Mobile Sources	8,027
Direct	Scope 1	Operations	Stationary Combustion	4,521
Indirect	Scope 2	Operations	Electricity	14,278
Indirect	Scope 3	Operations	Waste Management	6,251
			Total	40,152

Option 2 – Emission Categories for GHG Assessment

Emission Category	Scope	Project Phase	Emission Type	Estimated CO_{2e} (metric tons)
Direct	Scope 1	Construction	Mobile Sources	6,724
Direct	Scope 1	Construction	Land-Use Conversion	333
Direct	Scope 1	Operations	Mobile Sources	6,048
Direct	Scope 1	Operations	Stationary Combustion	4,502
Indirect	Scope 2	Operations	Electricity	14,025
Indirect	Scope 3	Operations	Waste Management	4,796
			Total	36,428

[6] ghg-emission-factors-hub-2024.pdf (epa.gov)
[7] Consumption & Efficiency - U.S. Energy Information Administration (EIA)
[8] Simplified GHG Emissions Calculator | US EPA

Construction Emissions

Construction emissions are associated with fuel combustion from mobile and stationary construction equipment. Construction of the project is anticipated to be phased over 5-10 years. For this assessment, 365 days of construction and 10 hours per day were assumed. While the number of construction days will likely be less due to weather or site conditions, 365 days was used to consider the maximum emissions generated by construction of the project. Construction emissions for Option 1 and 2 are expected to be the same. For the assessment, emissions for the following equipment were estimated:

Equipment	On-road or Off-road	Vehicles per Day
Passenger Car – Commuting Workers	On-road	20
Dump trucks	On-road	20
Semi-trucks	On-road	20
Small Engine: Loaders, Dozers, Graders, etc.	Off-road	15
Large Engine: Cranes, Excavators, etc.	Off-road	5

Annual emissions related to construction mobile sources are estimated to be 6,724 metric tons per year.

Land Conversion

There is an annual GHG emission attributable to land conversion due to the loss of GHG sink capacity of the existing grasses and trees, grassland, cropland, wetland, and forest. Acres of pre-project land use type are compared with post-project land use type, to determine to acres loss of carbon sequestration. There are not readily available carbon sequestration rates for land use types, so a best-case scenario for sequestration is used of 2.6 metric tons of carbon dioxide per acre per year, was utilized. This sequestration rate is based on forested community types; actual sequestration rates for grassland, cropland, and lawn/landscaping are likely much lower. **The total loss of carbon sequestration resulting from the project is estimated to be 351 metric tons per year for Option 1 and 333 metric tons per year for Option 2**.

Option 1 – Loss of Carbon Sequestration due to Land Conversion

Land Use	Pre-project Acres	Post-project Acres	Acres lost with carbon sequestration potential
Grasses & Trees	16	0	15.7
Grassland	61	0	60.5
Lawn	59	178	-119.3
Row Crop Agriculture	17	0	17.1
Wetland	35	13	21.7
Wooded	141	2	139.4
Impervious	166	301	0
Total	**494**	**494**	**135**

Option 2 – Loss of Carbon Sequestration due to Land Conversion

Land Use	Pre-project Acres	Post-project Acres	Acres lost with carbon sequestration potential
Grasses & Trees	16		15.7
Grassland	61		60.5
Lawn	59	188	-129.3
Row Crop Agriculture	17		17.1
Wetland	35	10	25.2
Wooded	141	3	138.9
Impervious	166	294	0
Total	**494**	**494**	**128.2**

Operational Emissions

Emissions related to operations of the project, following construction include mobile sources, stationary combustion, electricity, and waste management.

Option 1

Mobile Sources

For mobile sources, one vehicle per residential unit was assumed (2,624 vehicles). Although there may be more than one vehicle per household, it is also assumed that all units may not be occupied at all times, and some residents of multifamily units (i.e., apartments) may not drive a vehicle. Additionally, 200 vehicles were included to represent the employees of the commercial and industrial facilities, and seven (7) delivery trucks were included. All vehicles were estimated to drive 20 miles per day for 365 days. **Annual emissions related to mobile sources are estimated to be 8,027 metric tons per year**.

It should be noted that the project is not expected to increase mobile emissions overall. It is very likely that residents and employees living and working at the proposed project location would also be generating mobile emissions if the project were not constructed.

Stationary Combustion – Natural Gas

Emissions related to the combustion of natural gas are based on emission factors listed in Table 1 of the EPA's Emission Factors Hub and consumption data from the EIA. Consumption for residential units is based on housing unit type; consumption for commercial units is based on building size and principal building activity**. Annual emissions related to natural gas are estimated to be 4,521 metric tons per year**.

Electricity

Emissions related to electricity use are related to the generation of electricity, typically offsite. Electricity estimates were calculated using emission factors listed in Table 6 of the EPA's Emission Factors Hub for the Midwest Reliability Organization West (MROW) region. Electricity generation in the MROW region is comprised of ~38% fossil fuels (coal), ~8% natural gas, ~8% nuclear, ~40% wind, and lesser amounts of other sources. Electricity consumption was estimated using consumption data from the EIA. Consumption for residential units is based on housing unit type; consumption for commercial units is based on building size and principal building activity**. Annual emissions related to electricity are estimated to be 14,278 metric tons per year**.

Waste Management
Emissions related to waste management include those generated from waste generation. Transport of waste to landfills, landfill operations, and landfill methane emissions. The EPA estimated the total generation of municipal solid waste (MSW) in the United States in 2018 was 4.9 pounds per person, per day, of which ~24% is recycled and ~9% is composted**. Annual emissions related to waste management are estimated to be 6,251 metric tons per year.**

Option 2
Mobile Sources
For mobile sources, one vehicle per residential unit was assumed (1,920 vehicles). Although there may be more than one vehicle per household, it is also assumed that all units may not be occupied at all times, and some residents of multifamily units (i.e., apartments) may not drive a vehicle. Additionally, 200 vehicles were included to represent the employees of the commercial and industrial facilities, and seven (7) delivery trucks were included. All vehicles were estimated to drive 20 miles per day for 365 days. **Annual emissions related to mobile sources are estimated to be 6,048 metric tons per year**.

It should be noted that the project is not expected to increase mobile emissions overall. It is very likely that residents and employees living and working at the proposed project location would also be generating mobile emissions if the project were not constructed.

Stationary Combustion – Natural Gas
Emissions related to the combustion of natural gas are based on emission factors listed in Table 1 of the EPA's Emission Factors Hub and consumption data from the EIA. Consumption for residential units is based on housing unit type; consumption for commercial units is based on building size and principal building activity**. Annual emissions related to natural gas are estimated to be 4,502 metric tons per year**.

Electricity
Emissions related to electricity use are related to the generation of electricity, typically offsite. Electricity estimates were calculated using emission factors listed in Table 6 of the EPA's Emission Factors Hub for the Midwest Reliability Organization West (MROW) region. Electricity generation in the MROW region is comprised of ~38% fossil fuels (coal), ~8% natural gas, ~8% nuclear, ~40% wind, and lesser amounts of other sources. Electricity consumption was estimated using consumption data from the EIA. Consumption for residential units is based on housing unit type; consumption for commercial units is based on building size and principal building activity**. Annual emissions related to electricity are estimated to be 14,025 metric tons per year**.

Waste Management
Emissions related to waste management include those generated from waste generation. Transport of waste to landfills, landfill operations, and landfill methane emissions. The EPA estimated the total generation of municipal solid waste (MSW) in the United States in 2018 was 4.9 pounds per person, per day, of which ~24% is recycled and ~9% is composted**. Annual emissions related to waste management are estimated to be 4,796 metric tons per year.**

a. GHG Assessment
   i. Describe any mitigation considered to reduce the project's GHG emissions.

The AUAR will identify mitigation methods that will be implemented to reduce the project's greenhouse gas emissions.

Construction-related emissions will be exempt as *de minimis* and they will meet the conformity requirements under Section 176 (c) of the Clean Air Act, and 40 CFR 93.153. The project sponsor will encourage the selected contractor to reduce GHG emissions from construction, which may include minimizing idling equipment or encouraging carpooling to the site by equipment operators.

There are several design features that are planned to reduce overall energy consumption and emissions. It is assumed that materials listed below will be used throughout the development. Every building may not have every item, but all would be covered throughout the entire development. These include:

- Use of energy efficient building materials, to reduce heating and cooling needs.
- Installation of programmable thermostats for buildings.
- Use of energy efficient appliances and electronics.
- Use of efficient LED lighting.
- Installation of roofing materials that reflect solar energy.
- Low or no VOC paints, adhesives, and solvents.
- Reduce and recycle construction wastes.
- Preservation of natural space

ii. Describe and quantify reductions from selected mitigation, if proposed to reduce theproject's GHG emissions. Explain why the selected mitigation was preferred.

The AUAR will describe the reductions in greenhouse gas emissions from the proposed mitigation methods.

The use of the design features listed above will help to mitigate the Project's GHG emissions. It is difficult to quantify the exact reduction in GHG emissions related to the project due to the variability in brands, models, and cost of materials that will be available when the project is constructed. Some general information on GHG reductions is provided below:

- If everyone in the US used an ENERGY STAR programmable thermostat, 13 billion pounds of greenhouse gas emissions each year would be offset[9].
- An LED light bulb that has earned the ENERGY STAR label uses up to 90% less energy than an incandescent light bulb, while providing the same illumination[4].

iii. Quantify the proposed projects predicted net lifetime GHG emissions (total tons/#of years) and how those predicted emissions may affect achievement of the Minnesota Next Generation Energy Act goals and/or other more stringent state or local GHG reduction goals.

The AUAR will identify the expected lifespan of the project and quantify the greenhouse gas emissions that are anticipated to be emitted over the lifespan of the project. The anticipated emissions will be discussed in

[9] Homepage | ENERGY STAR

context of the state of Minnesota's 2020 emission and the Next Generation Act goals.

The projects' first year total GHG emission are 40,152 metric tons and a36,428 metric tons for the first year, including construction emissions This accounts for 0.029% and 0.026% of the state of Minnesota's 2020 emission and the Next Generation Act (NGA) goals, respectively.

Description	Option 1 - CO_2e (tons)	Option 2 - CO_2e (tons)
Project First Year Total Emissions	40,152	36,428
2020 MN Emission & Next Generation (NGA) Goal[10]	140,000,000	140,000,000
Project's First Year % of NGA Goal	0.029%	0.026%

14 Noise

AUAR Guidance: Construction noise need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, any construction noise ordinances in effect.

- *If the area will include or adjoin major noise sources, a noise analysis is needed to determine if any noise levels in excess of standards would occur, and if so, to identify appropriate mitigation measures. With respect to traffic-generated noise, the noise analysis should be based on the traffic analysis.*

Per the AUAR guidelines, construction noise does not need to be addressed unless there are unusual circumstances that warrant it. No unusual circumstances are anticipated that would warrant a detailed noise analysis. The AUAR will identify mitigation measures that will reduce potential for noise impacts during construction.

We do not anticipate the project will result in a significant increase in traffic noise levels, given the current traffic volumes and design features. Common noise mitigation measures for traffic noise in non-highway settings near residential areas include vegetative buffers, earthen berms, sound walls or fences, strategic building orientation, and the use of quieter pavement materials. These measures can help reduce potential noise impacts and preserve quality of life for nearby residents.

15 Transportation

For AUAR reviews a detailed traffic analysis will be needed, conforming to the MnDOT guidance as listed on the EAW form. The results of the traffic analysis must be used in the response to item 22 and in the noise aspect of item 24.

A traffic study was conducted to assess existing roadway conditions, estimate trip generation and distribution, analyze traffic impacts, and recommend roadway improvements to maintain acceptable traffic operations throughout the full build-out of the development.

Trip Generation

[10] Greenhouse gas emissions in Minnesota 2005-2020 (state.mn.us)

The estimated number of trips generated by the proposed development was calculated for both the AM and PM peak hours, as well as the total daily trips. As shown in Table 5 on page 24, the fully built-out site is expected to generate approximately 41,144 daily trips. To account for internal trip reductions based on the methodology from NCHRP Report 684, adjustments of 8.7% for the AM peak hour and 18.7% for the PM peak hour were applied. After these reductions, the projected number of vehicle trips entering and exiting the site is 1,783 during the AM peak hour and 2,617 during the PM peak hour. These trips were then distributed among the study intersections for further analysis.

Capacity Analysis

A horizon-year analysis was conducted for the **2045 Mitigated Build** scenario, which assumes full development and the connection of 37th Street to Valleyhigh Drive. This scenario includes several intersection improvements identified as necessary to maintain traffic operations within acceptable service standards. The following **Table E1** provides a summary of the 2045 Mitigated Build scenario.

Table 9 – 2045 Mitigated Build Traffic Operations

Intersection	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)	Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)
W Circle Dr at 41st St	EB	39.5 / D	23.0 / C	235	46.2 / D	32.7 / C	289
	WB	34.6 / C		137	38.6 / D		286
	NB	6.7 / A		91	17.4 / B		292
	SB	17.5 / B		205	39.0 / D		264
41st St at NW MF Access	EB	2.9 / A	2.2 / A	0	3.3 / A	2.5 / A	20
	WB	0.5 / A		20	1.5 / A		39
	NB	4.7 / A		48	7.4 / A		43
	SB						
41st St at 31st Ave/IBM	EB	7.2 / A	8.0 / A	94	13.5 / B	14.2 / B	183
	WB	6.6 / A		83	14.8 / B		165
	NB	9.7 / A		59	14.7 / B		117
	SB	11.3 / B		76	14.3 / B		124
41st St at W. Frontage Rd/ Marketplace Dr	EB	10.6 / B	12.9 / B	98	26.7 / C	30.2 / C	267
	WB	8.6 / A		95	15.8 / B		175
	NB	15.6 / B		99	24.3 / C		**247**
	SB	23.9 / C		94	**57.1 / E**		**388**
41st St at SB US 52 Ramp	EB	7.8 / A	11.4 / B	103	21.7 / C	25.0 / C	367
	WB	9.2 / A		143	25.8 / C		338
	NB						
	SB	18.2 / B		179	35.2 / D		283
41st St at NB US 52 Ramp/E. Frontage Rd	EB	3.6 / A	7.6 / A	60	14.4 / B	16.9 / B	211
	WB	7.0 / A		106	19.6 / B		307
	NB	14.5 / B		85	17.0 / B		109
	SB						
41st St at E. Frontage Rd/ Maplewood Sq Access	EB	6.1 / A	6.2 / A	93	6.8 / A	15.1 / B	161
	WB	3.3 / A		107	12.5 / B		253
	NB	17.6 / B		53	43.2 / D		173
	SB	8.1 / A		54	19.8 / B		118
Marketplace Dr at SE Target Access	EB	4.1 / A	0.7 / A	30	21.2 / C	3.3 / A	81
	WB						
	NB	0.8 / A		33	2.2 / A		89
	SB	0.3 / A		0	1.1 / A		20
Marketplace Dr at Slip Ramp from 37th St	EB	2.9 / A	1.6 / A	22	5.6 / A	4.9 / A	30
	WB	3.6 / A		50	12.2 / B		176
	NB	0.6 / A		0	1.6 / A		0
	SB	0.3 / A		0	0.6 / A		0

Intersection	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)	Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)
W. Circle Dr at Valleyhigh Rd	EB	32.4 / C	32.2 / C	277	31.9 / C	35.8 / D	213
	WB	31.3 / C		168	40.7 / D		247
	NB	38.8 / D		250	36.7 / D		325
	SB	24.0 / C		157	34.2 / C		308
Valleyhigh Dr at 37th St (Roundabout)	EB	5.6 / A	5.9 / A	41	5.9 / A	7.8 / A	57
	WB						
	NB	5.4 / A		33	8.1 / A		71
	SB	7.1 / A		0	10.9 / B		61
37th St at IBM West	EB	8.5 / A	6.4 / A	106	7.0 / A	7.4 / A	91
	WB	3.4 / A		86	6.2 / A		145
	NB	4.6 / A		32	6.1 / A		50
	SB	12.5 / B		131	12.1 / B		96
37th St at IBM East	EB	11.6 / B	8.4 / A	130	**57.1 / E**	37.1 / D	486
	WB	8.6 / A		238	34.8 / C		318
	NB	4.2 / A		48	24.1 / C		559
	SB						
37th St at SB US 52 Ramp	EB	1.8 / A	7.3 / A	50	7.6 / A	16.7 / B	124
	WB	7.1 / A		205	21.4 / C		563
	NB						
	SB	26.9 / C		140	36.2 / D		162
37th St at NB US 52 Ramp	EB	16.3 / B	28.8 / C	130	18.8 / B	40.2 / D	**236**
	WB	28.3 / C		394	39.2 / D		**484**
	NB	33.9 / C		503	52.6 / D		580
	SB						
37th St at 21st Ave/E Frontage Rd	EB	4.1 / A	8.5 / A	82	16.5 / B	28.6 / C	278
	WB	7.5 / A		206	31.8 / C		486
	NB	49.0 / D		104	**56.7 / E**		315
	SB	24.8 / C		63	39.5 / D		165
Watson Ave NW at IBM	EB	4.5 / A	2.9 / A	35	4.8 / A	4.5 / A	48
	WB	2.8 / A		69	5.3 / A		70
	NB	3.0 / A		53	2.8 / A		52
	SB						
IBM at Internal Roadway (Roundabout)	EB	5.2 / A	7.0 / A	21	12.8 / B	10.4 / B	99
	WB	5.2 / A		20	10.7 / B		67
	NB	6.1 / A		21	8.0 / A		20
	SB	8.5 / A		79	8.3 / A		66
Marketplace Dr at E IBM Access	EB	2.4 / A	1.7 / A	43	6.1 / A	3.4 / A	65
	WB						
	NB	1.7 / A		38	3.5 / A		73
	SB	0.6 / A		20	1.2 / A		20
	EB		1.3 / A			1.4 / A	

Intersection	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)	Approach (sec/LOS)	Intersection (sec/LOS)	95th Queue (ft)
Watson Ave NW at Internal Roadway	WB	6.6 / A		58	6.7 / A		58
	NB	0.5 / A		0	0.5 / A		0
	SB	0.2 / A		20	0.3 / A		20
Internal Roadway at Internal Roadway	EB	0.5 / A	2.9 / A	20	0.7 / A	1.7 / A	26
	WB	0.4 / A		20	0.3 / A		0
	NB	1.8 / A		41	3.0 / A		49
	SB	5.0 / A		59	4.7 / A		50
Valleyhigh Dr at Watson Ave NW	EB		2.1 / A			4.0 / A	
	WB	8.3 / A		64	13.4 / B		140
	NB	1.0 / A		20	0.7 / A		20
	SB	1.6 / A		55	1.7 / A		51
Marketplace Dr at SE MF Access	EB	4.2 / A	1.8 / A	68	5.5 / A	2.3 / A	57
	WB						
	NB	0.7 / A		35	1.7 / A		62
	SB	1.4 / A		0	2.5 / A		0
19th St at W Frontage Rd	EB	11.9 / B	20.8 / C	220	33.4 / C	33.3 / C	575
	WB	12.7 / B		**299**	20.4 / C		**377**
	NB	19.7 / B		69	**60.6 / E**		305
	SB	**57.1 / E**		357	51.8 / D		411
19th St at US 52 Interchange	EB	30.0 / C	35.0 / D	258	37.7 / D	54.1 / D	**331**
	WB	31.0 / C		270	44.5 / D		270
	NB	38.9 / D		360	**75.7 / E**		683
	SB	41.4 / D		387	36.0 / D		221

Capacity & Level of Service (LOS)

The 2045 Mitigated Build scenario generally meets traffic service standards, except at:

- Marketplace Dr at SE Target Access: High V/C ratio (0.93), but no development-related traffic impact.
- Valleyhigh Dr at Watson Ave NW: High V/C ratio (1.16); mitigation options include a traffic signal or roundabout.
- Key Intersections with LOS D:
  - W. Circle Dr at Valleyhigh Rd (PM peak) – Needs additional lanes.
  - 37th St at NB US 52 Ramp (PM peak) – Requires interchange reconstruction.
  - 19th St at US 52 Interchange (SPUI) (AM & PM) – Needs redesign.

While these intersections don't meet LOS C, conservative assumptions in traffic projections suggest actual performance may be better.

Access & Circulation

- 37th St will have fewer access points and a median.
- New access points at Marketplace Dr (two) and 41st St (one).
- No impact on existing residential streets or traffic flow progression.

Vehicle Storage & Queueing
Some intersections exceed storage capacity under 2045 conditions, but minor signal timing adjustments could reduce delays.

Planned Roadway & Intersection Improvements

- 37th St extended to Valleyhigh Dr, including a roundabout at Valleyhigh Dr/37th St.
- New traffic signals at IBM East and West intersections.
- Additional turn lanes and storage expansions at multiple intersections to improve efficiency.

Conclusion
With planned mitigations, the traffic network performs acceptably overall, though some LOS and storage deficiencies remain due to interchange constraints. More realistic trip distribution and pass-by traffic considerations would likely further improve intersection performance.

16 Cumulative Potential Effects

AUAR Guidance: Because the AUAR process by its nature is intended to deal with cumulative potential effects from all future developments within the AUAR area, it is presumed that the responses to all items on the EAW form automatically encompass the impacts from all anticipated developments within the AUAR area.

Cumulative effects are impacts on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of whom undertakes said actions. Areas considered for cumulative effects are those that are adjacent to the project area and considers projects that would be constructed in the foreseeable future.

There are no known foreseeable future projects that may have cumulative effects with the actions proposed by this redevelopment scenario, including potential climate resilience implications related to stormwater, air quality, traffic impacts, and changes to the existing building footprints.

17 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.

No other potential environmental effects are anticipated.

18 List of Preparers

Rebecca Beduhn, Sr. Scientist

Ericka Massa, Scientist

Erin Budrow, Scientist

Jennifer Force, Sr. Scientist

Ali Creeger, Scientist

Robert Hawkins, Scientist

Erin Heaster, Scientist

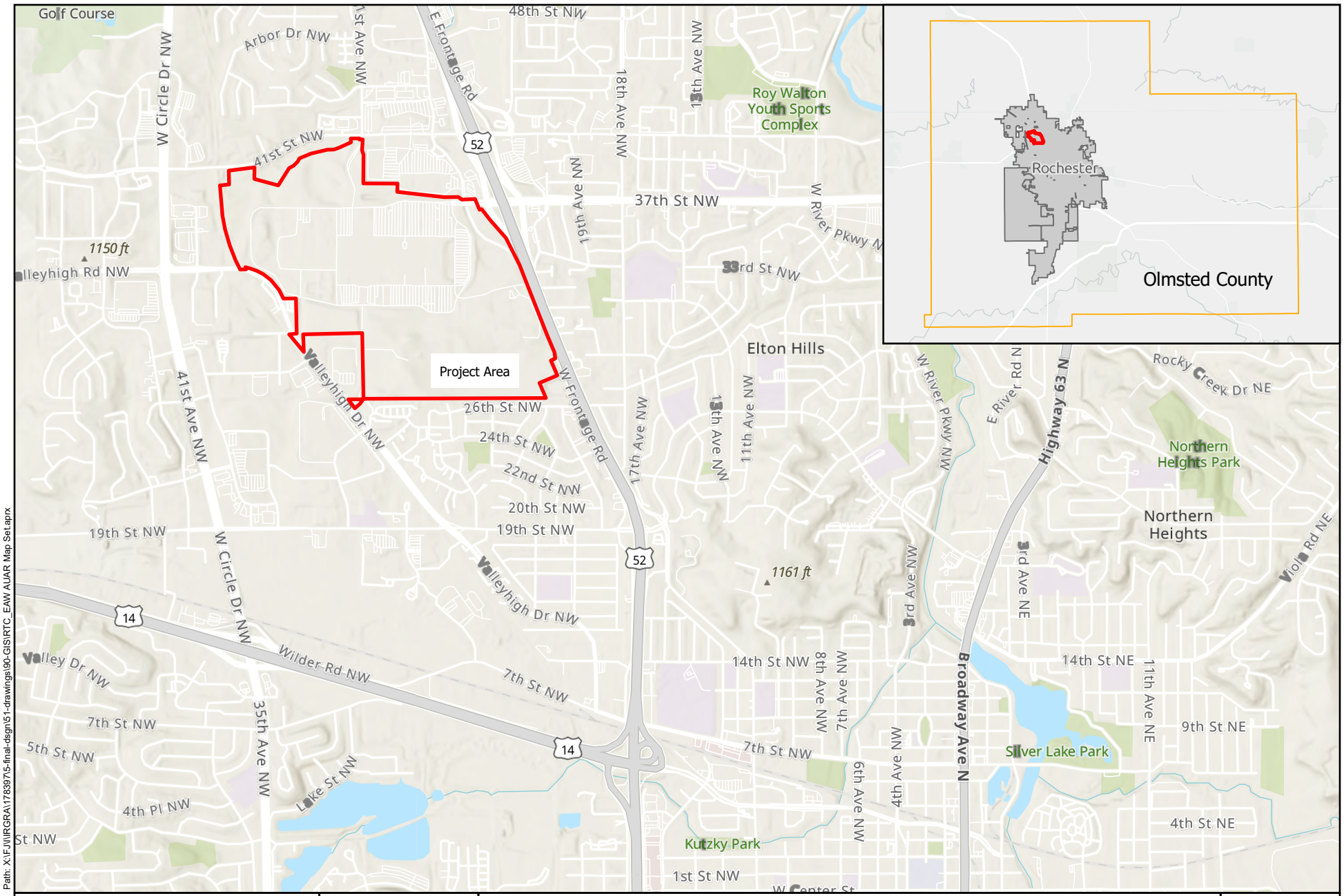
Kari Franklin, Project Engineer

Alexander Berlick, Planner

Natalie White, Sr. Scientist

Figures

Figure 1 – Location
Figure 2 – USGS Topographic Map
Figure 3 – Existing Land Cover
Figure 4 – Olmsted County Soil Survey
Figure 5 – 2-ft LiDAR Topography
Figure 6 – Surface Geology
Figure 7 – Wetlands
Figure 8 – Wells and Wellhead Protection Map



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Project: IRGRA 178397
Print Date: 6/24/2024

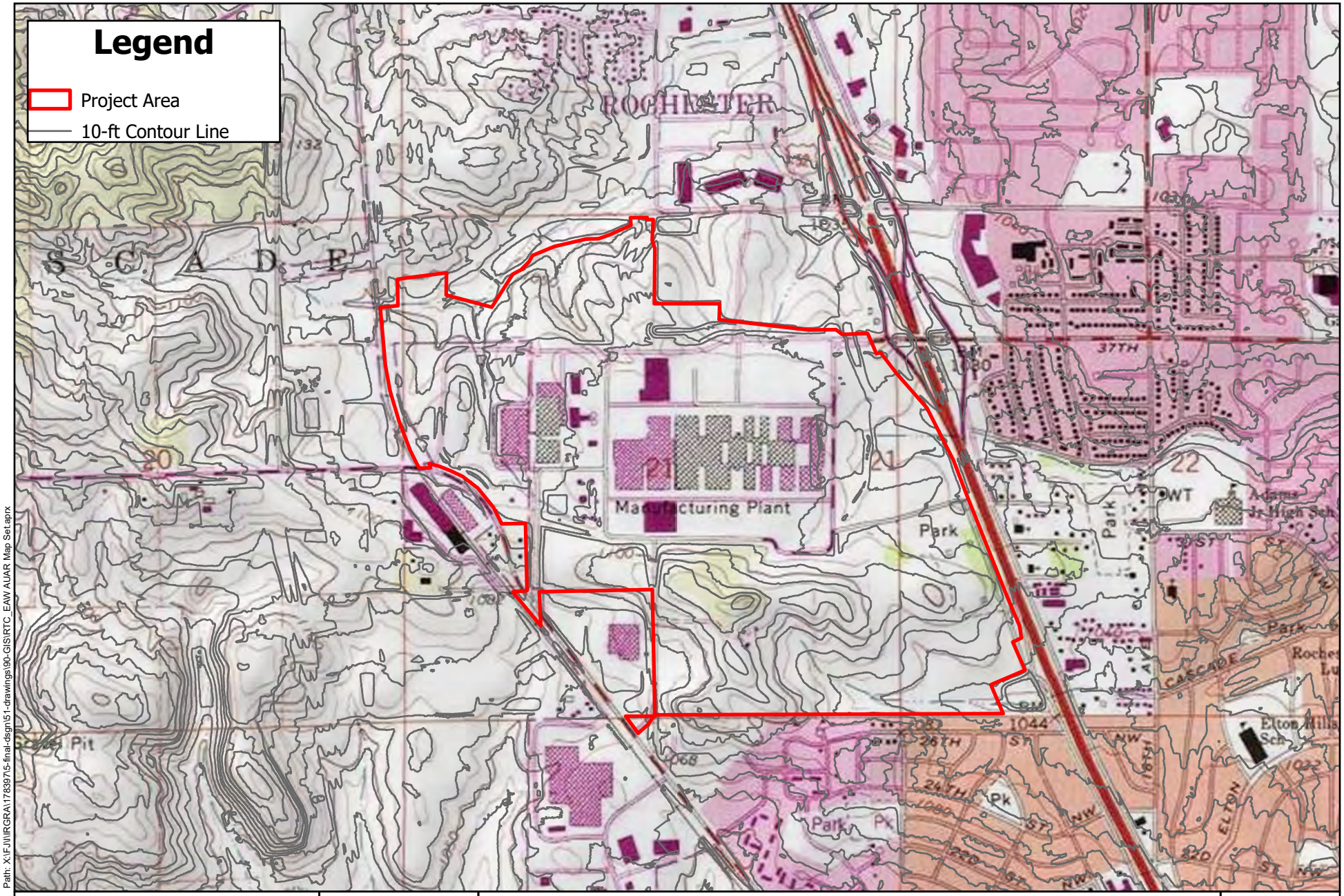
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

Project Location Map

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



SEH

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Project: IRGRA 178397
Print Date: 6/24/2024

Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

USGS Topographic Map

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 2

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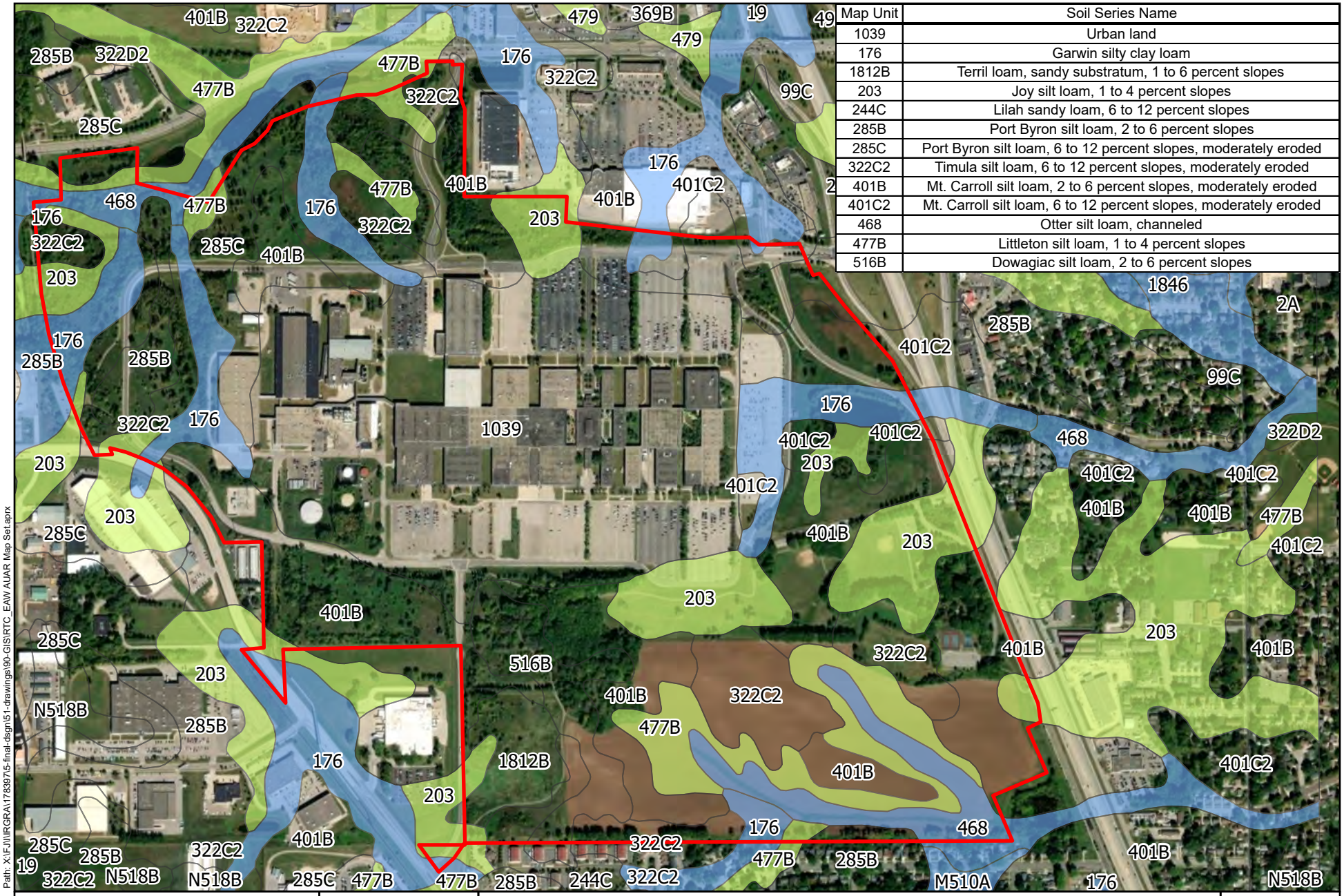
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

MNDNR MLCCS Land Cover

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 3

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Map Unit	Soil Series Name
1039	Urban land
176	Garwin silty clay loam
1812B	Terril loam, sandy substratum, 1 to 6 percent slopes
203	Joy silt loam, 1 to 4 percent slopes
244C	Lilah sandy loam, 6 to 12 percent slopes
285B	Port Byron silt loam, 2 to 6 percent slopes
285C	Port Byron silt loam, 6 to 12 percent slopes, moderately eroded
322C2	Timula silt loam, 6 to 12 percent slopes, moderately eroded
401B	Mt. Carroll silt loam, 2 to 6 percent slopes, moderately eroded
401C2	Mt. Carroll silt loam, 6 to 12 percent slopes, moderately eroded
468	Otter silt loam, channeled
477B	Littleton silt loam, 1 to 4 percent slopes
516B	Dowagiac silt loam, 2 to 6 percent slopes

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Project: IRGRA 178397
Print Date: 6/24/2024

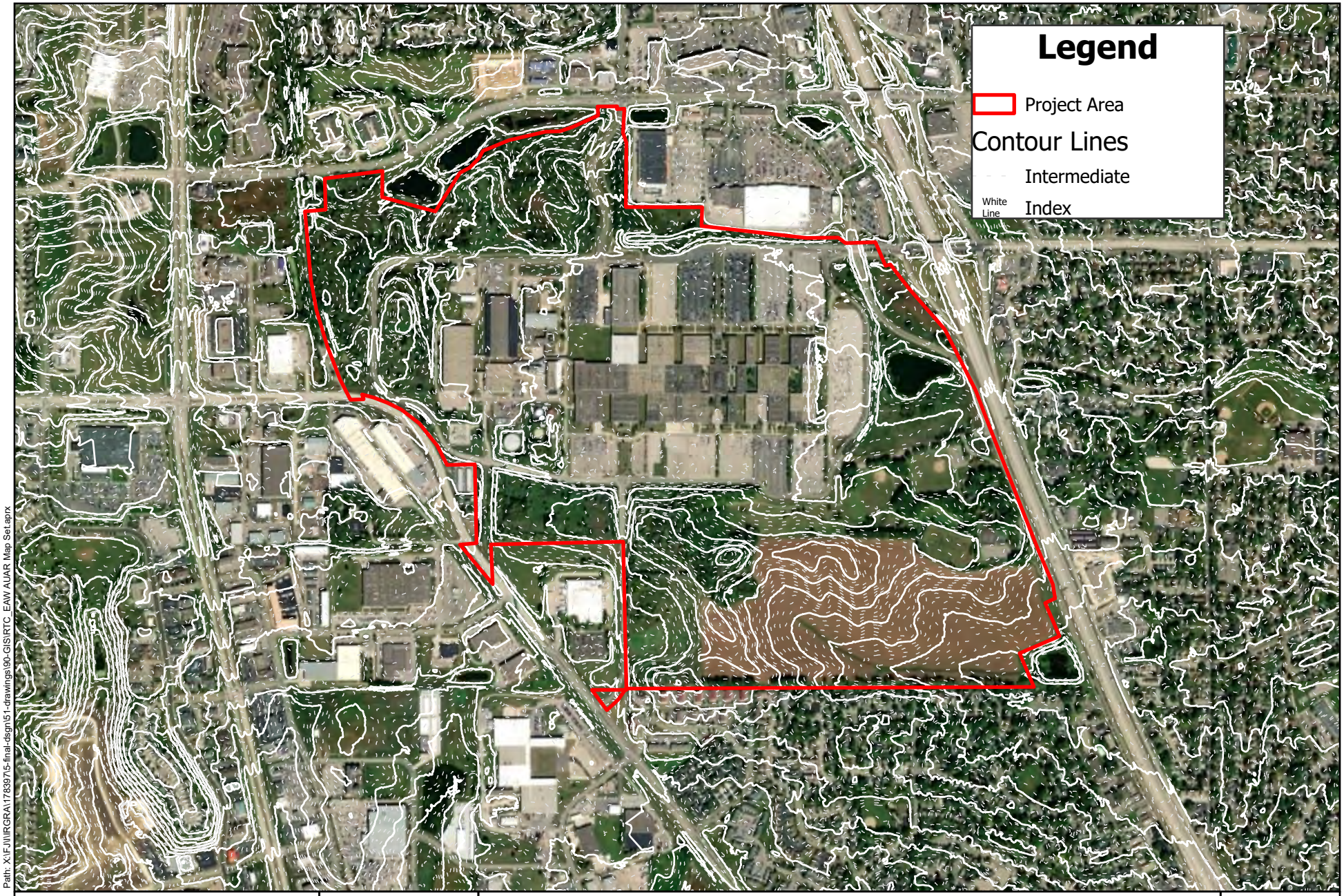
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

Olmsted County Soil Survey

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 4

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SEH

0 375 750 Feet

Project: IRGRA 178397
Print Date: 6/25/2024

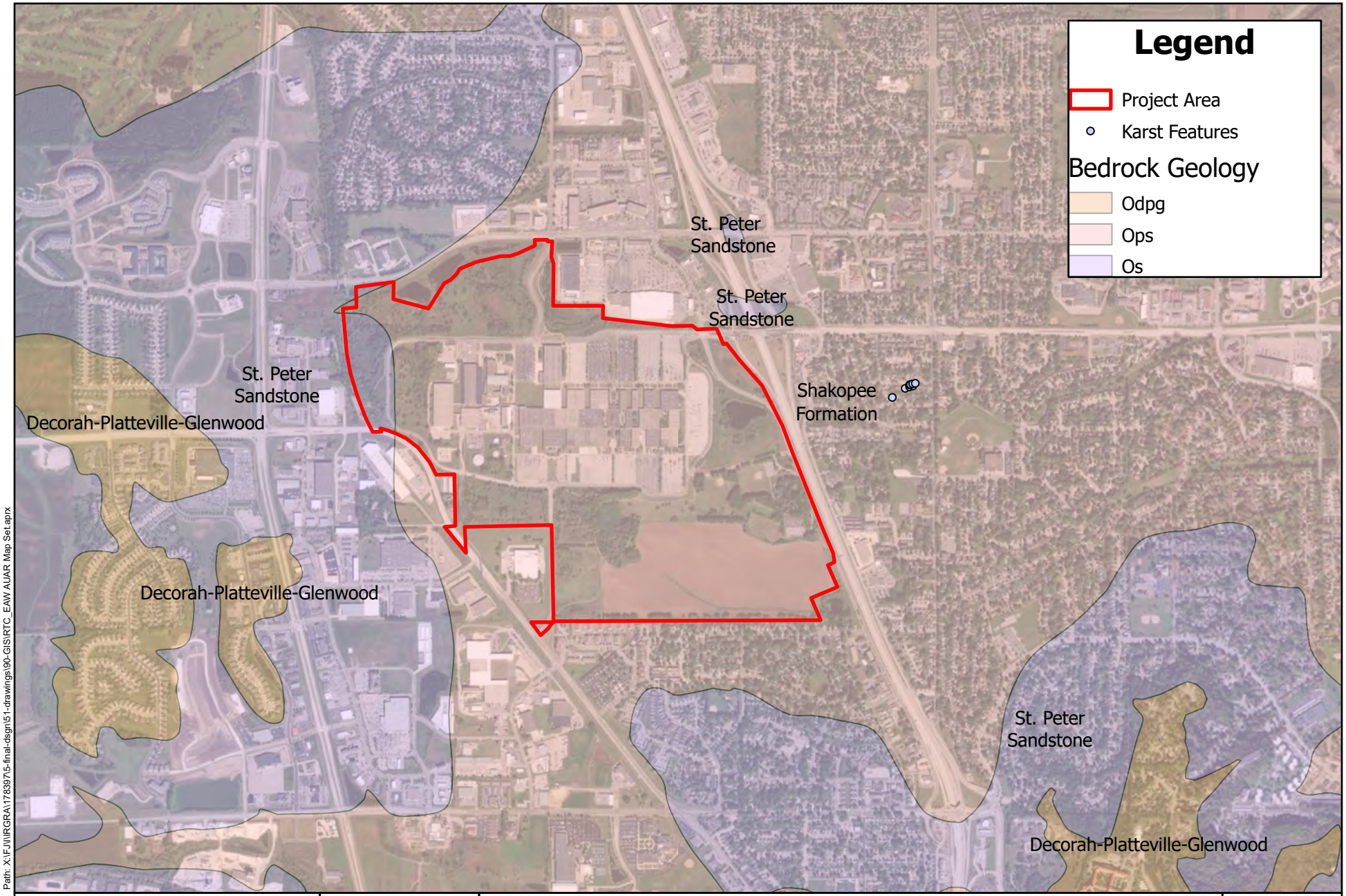
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

2-ft LiDAR Topography

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 5

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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SEH

0 375 750 1,500 Feet

Project: IRGRA 178397
Print Date: 6/25/2024

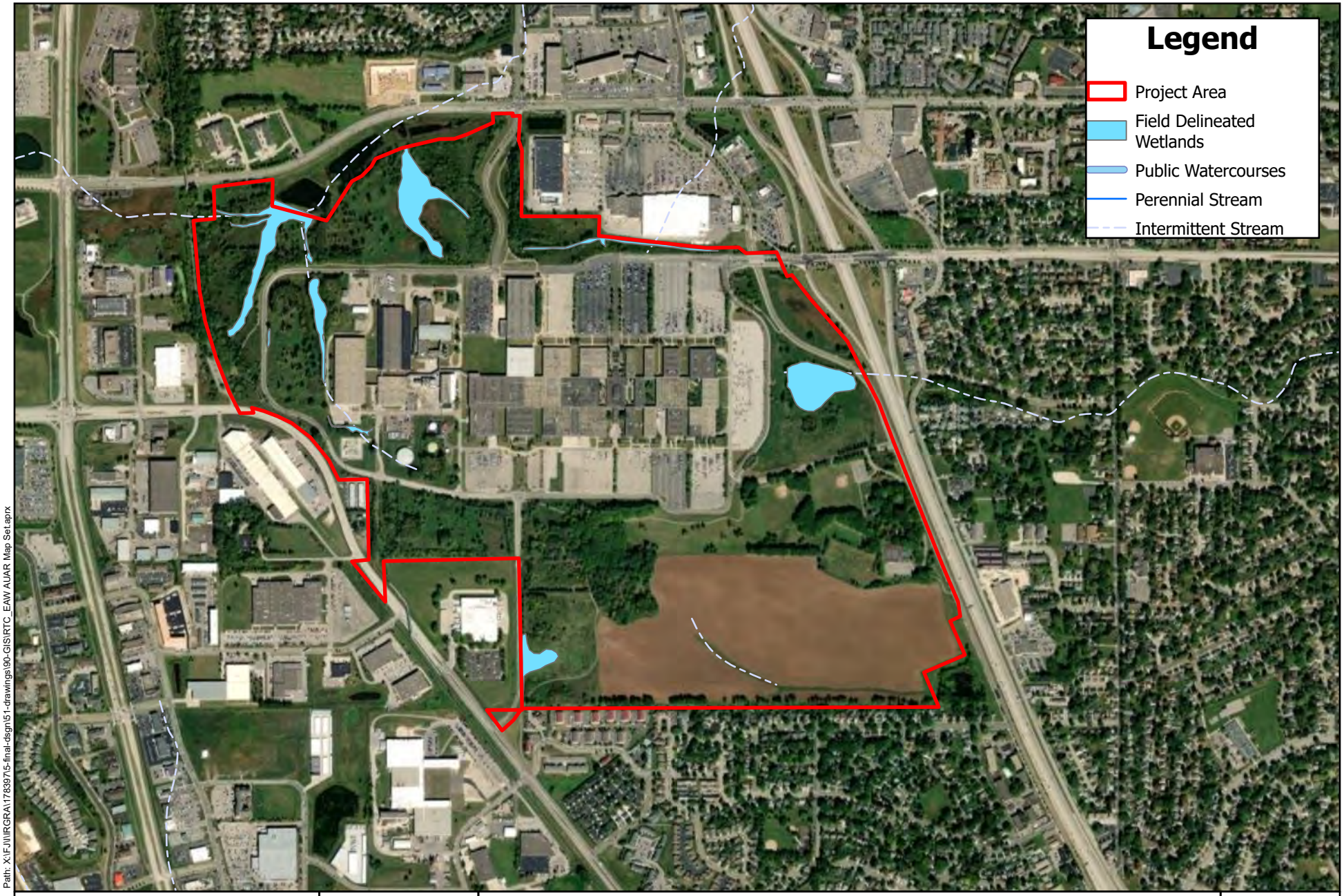
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

Olmsted County Geological Survey

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 6

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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SEH

0 375 750 Feet

Project: IRGRA 178397
Print Date: 6/25/2024

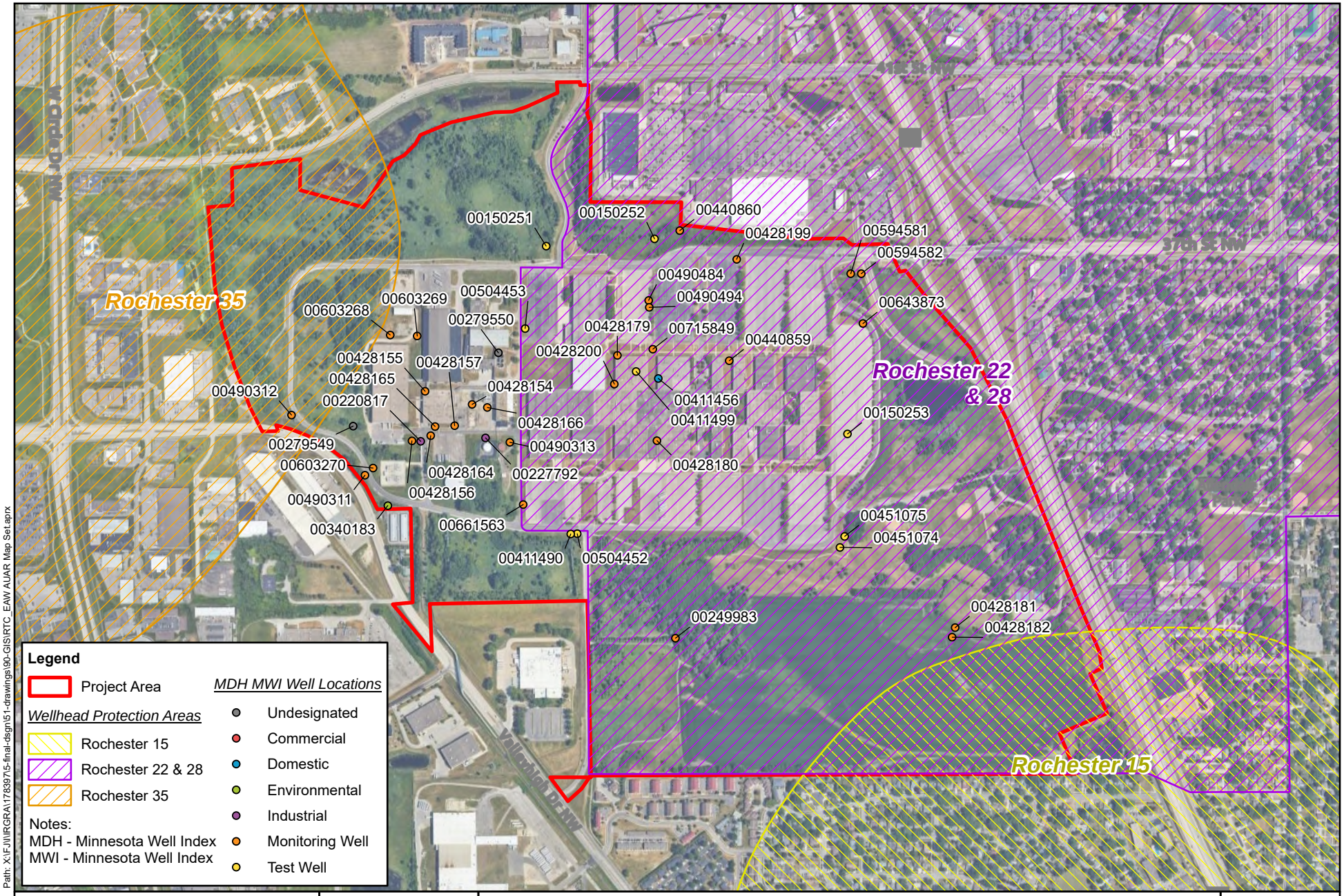
Map by: rbeduhn
Projection: UTM NAD 83 Zone 15N
Source: SEH, City of Rochester, MNDNR, USGS, NRCS USFWS

Wetland Delineation and Surface Waters

ROCHESTER TECHNOLOGY CAMPUS
ROCHESTER, OLMSTED CO, MN

Figure 7

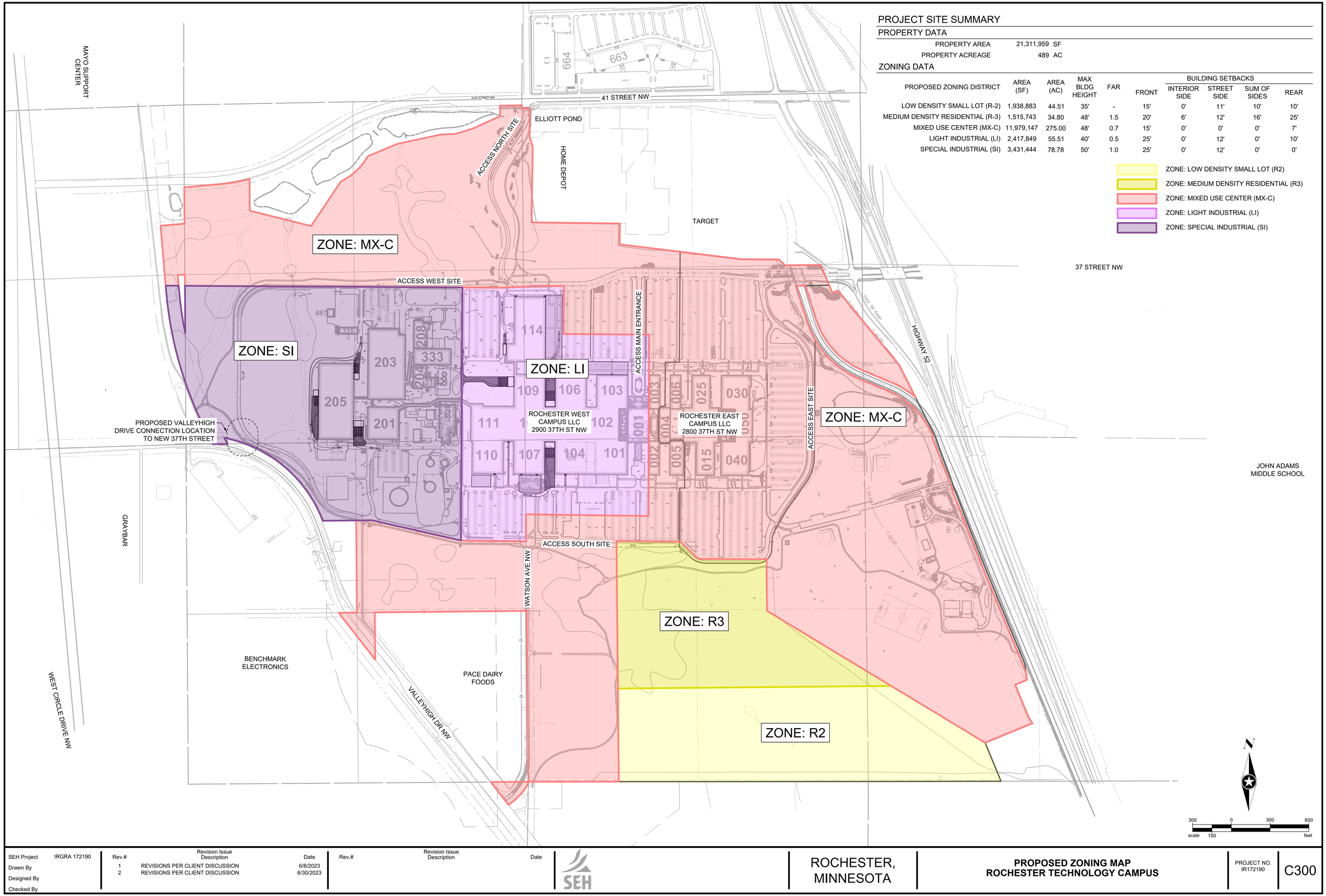
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Appendix A

Zoning Map



PROJECT SITE SUMMARY

PROPERTY DATA

PROPERTY AREA	21,311,959	SF
PROPERTY ACREAGE	489	AC

ZONING DATA

PROPOSED ZONING DISTRICT	AREA (SF)	AREA (AC)	MAX BLDG HEIGHT	FAR	BUILDING SETBACKS				
					FRONT	INTERIOR SIDE	STREET SIDE	SUM OF SIDES	REAR
LOW DENSITY SMALL LOT (R-2)	1,938,883	44.51	35'	-	15'	0'	11'	10'	10'
MEDIUM DENSITY RESIDENTIAL (R-3)	1,515,743	34.80	48'	1.5	20'	6'	12'	16'	25'
MIXED USE CENTER (MX-C)	11,979,147	275.00	48'	0.7	15'	0'	0'	0'	7'
LIGHT INDUSTRIAL (LI)	2,417,849	55.51	40'	0.5	25'	0'	12'	0'	10'
SPECIAL INDUSTRIAL (SI)	3,431,444	78.78	50'	1.0	25'	0'	12'	0'	0'

ZONE: LOW DENSITY SMALL LOT (R2)
ZONE: MEDIUM DENSITY RESIDENTIAL (R3)
ZONE: MIXED USE CENTER (MX-C)
ZONE: LIGHT INDUSTRIAL (LI)
ZONE: SPECIAL INDUSTRIAL (SI)

SEH Project	IRGRA 172190
Drawn By	
Designed By	
Checked By	

Rev.#	Revision Issue Description	Date
1	REVISIONS PER CLIENT DISCUSSION	6/8/2023
2	REVISIONS PER CLIENT DISCUSSION	6/30/2023

Rev.#	Revision Issue Description	Date

SEH

ROCHESTER, MINNESOTA

PROPOSED ZONING MAP
ROCHESTER TECHNOLOGY CAMPUS

PROJECT NO. IR172190

C300

Appendix B

Scenario 1 and Scenario 2 Renderings

ROCHESTER TECHNOLOGY CAMPUS MASTER PLAN & REZONING

DRAFT

12.13.23

SEH

Multifamily
10.8 ac

Multifamily
3.2 ac

Multifamily
15.8 ac

Multifamily
6.4 ac

Multifamily
5.6 ac

Multifamily
4.2 ac

100' Wide Trail Easement

37th STREET
Convert to 120' ROW

Light Industrial
20.5 ac
305,000 sf footprint

New Roundabout
Intersection

ROCHESTER TECHNOLOGY
CAMPUS-WEST

Commercial/
Retail
4.7 ac

Walk up
Commercial/
Retail
3.4 ac

Hospitality
6.9 ac

Commercial/
Retail
7 ac

Hospitality
11.9 ac

Commercial/
Retail
1.8 ac

Commercial/
Retail
1.5 ac

Open Space
3.5 ac

Hospitality
6.6 ac

Multifamily
Housing
8.6 ac

Light Industrial
16 ac
325,000 sf footprint

Commercial/
Retail
3.6 ac

Open Space
8.1 ac

Open Space
1.8 ac

Multifamily
Housing
14.5 ac

Multifamily
Housing
18.1 ac

Commercial/
Retail
3.6 ac

4 Plex Townhomes
41.7 ac
95 X 4 = 380 units

Open Space/
Wetland
8.5 ac

50' Wide Trail Easement

LEGEND

- 4-PLEX TOWNHOMES
- MULTIFAMILY HOUSING
- HOTEL
- COMMERCIAL
- LIGHT INDUSTRIAL
- IBM CORE CAMPUS BUILDINGS
- ROADWAYS
- PRIVATE DRIVEWAYS
- PARKING
- OPEN SPACE
- SHADE TREES
- WOODS
- WETLAND
- STORMWATER POND (Proposed)
- STORMWATER POND (Existing)

ROCHESTER TECHNOLOGY CAMPUS CONCEPTUAL SITE PLAN

SPORTS COMPLEX CONCEPT

05.15.24

SEH

0 200 400 Feet

41st Street

8.3 ac

13 ac

11.2 ac

14.9 ac

13.6 ac

100' Wide Trail Easement

37th STREET
Convert to 120' ROW

37th Street

4.6 ac

20.6 ac

4.3 ac

40th Avenue

E Frontage Road

5.8 ac

33rd Street

7.3 ac

New Roundabout Intersection

Valleyhigh Drive

ROCHESTER TECHNOLOGY CAMPUS-WEST

Existing Building
144,000 SF

Proposed Addition
110,000 SF

5.5 ac

10.8 ac

US 52 / US 63

Marketplace Drive

E Frontage Road

4.9 ac

15.2 ac

4.2 ac

26.6 ac

6.9 ac

49.8 ac

5.5 ac

32.3 ac

Technology Drive

Valleyhigh Drive

31st Avenue NW

25th Street

26th Street

LEGEND

- 4-PLEX TOWNHOMES
- MULTIFAMILY HOUSING
- HOTEL
- COMMERCIAL / RETAIL
- COMMERCIAL
- LIGHT INDUSTRIAL
- RTC CORE CAMPUS BUILDINGS
- ROADWAYS
- PARKING / PRIVATE DRIVEWAYS
- WETLAND
- STORMWATER POND (Proposed)
- STORMWATER POND (Existing)

Appendix C

EPA's Simplified GHG Emissions Calculator

Back to Intro

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Emissions Summary Development Scenario 1

Guidance

The total GHG emissions from each source category are provided below. You may also use this summary sheet to fill out the *Annual GHG Inventory Summary and Target Tracking Form* (.xls) as this Calculator only quantifies one year of emissions at a time. The form is available here: https://www.epa.gov/climateleadership/target-setting

By entering the data below into the appropriate cell of the *Annual GHG Inventory Summary and Target Tracking Form,* you will be able to compare multiple years of data.

If you have multiple Calculator files covering sub-sets of your inventory for a particular reporting period, sum each of the emission categories (e.g. Stationary Combustion) to an organizational total, which then can be entered into the *Annual GHG Inventory Summary and Target Tracking Form* .

(A) Enter organization information into the orange cells. Other cells on this sheet will be automatically calculated from the data entered in the sheets in this workbook. Blue cells indicate required emission sources if applicable. Green cells indicate scope 3 emission sources and offsets, which organizations may optionally include in its inventory.

(B) The "Go To Sheet" buttons can be used to navigate to the data entry sheets.

Organizational Information:

Organization Name:	Rochester Technology Campus Rochester, Minnesota
Organization Address:	
Inventory Reporting Period:	*e.g., Calendar Year 2023, Fiscal Year 2023*
Start:	*MM/DD/YY*
End:	*MM/DD/YY*
Name of Preparer:	Ericka Massa, SEH
Contact Information of Preparer:	emassa@sehinc.com
Date Prepared:	5/29/2024

Summary of Organization's Emissions:

Scope 1 Emissions

		CO_2-e (metric tons)
Go To Sheet	Stationary Combustion	4,521
Go To Sheet	Mobile Sources	14,751
Go To Sheet	Refrigeration / AC Equipment Use	0
Go To Sheet	Fire Suppression	0
Go To Sheet	Purchased Gases	0

	CO2-e (metric tons)		
	Gross	Offsets	Net
Scope 1 Summary	19,273	0	19,273

Scope 2 Emissions

Location-Based Scope 2 Emissions		CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	14,278
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Location-Based Scope 2 Summary	14,278	0	14,278

Market-Based Scope 2 Emissions		CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	16,342
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Market-Based Scope 2 Summary	16,342	0	16,342

Scope 1 & 2 Summary

	CO_2-e (metric tons)	
	Gross	Net
Total Scope 1 & Location-Based Scope 2	33,551	33,551
Total Scope 1 & Market-Based Scope 2	35,614	35,614

Scope 3 Emissions

		CO_2-e (metric tons)		
		Gross	Offsets	Net
Go To Sheet	Business Travel	0	0	0
Go To Sheet	Employee Commuting	0	0	0
Go To Sheet	Upstream Transportation and Distribution	0	0	0
Go To Sheet	Waste	6,251	0	6,251

Required Supplemental Information

		CO_2-e (metric tons)
Go To Sheet	Biomass CO_2 Emissions from Stationary Sources	0
Go To Sheet	Biomass CO_2 Emissions from Mobile Sources	0

Scope 1 Emissions from Stationary Combustion Sources

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

(A) Enter annual data for each combustion unit, facility, or site (by fuel type) in ORANGE cells on **Table 1**. Example entry is shown in first row (*GREEN Italics*).
- Select "Fuel Combusted" from drop down box.
- Enter "Quantity Combusted" and choose the appropriate units from the drop down box in the unit column. If it's necessary to convert units, common heat contents can be found on the "Heat Content" sheet and unit conversions on the "Unit Conversion" sheet.

(B) If fuel is consumed in a facility but stationary fuel consumption data are not available, an estimate should be made for completeness. See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Biomass CO_2 emissions are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Stationary Source Fuel Combustion

Source ID	Source Description	Source Area (sq ft)	Fuel Combusted	Fuel State (solid, liquid, gas)	Quantity Combusted	Units
BLR-012	*East Power Plant*	*12,517*	*Natural Gas*	*Gas*	*10,000*	*MMBtu*
Residential	Multifamily Units (Apartment Units)	120,000	Natural Gas	Gas	20,826	MMBtu
Residential	Townhome Units	120,000	Natural Gas	Gas	7,493	MMBtu
Commercia	Commercial - Retail	270,000	Natural Gas	Gas	10,775	MMBtu
Commercia	Commercial - Other	254,000	Natural Gas	Gas	10,137	MMBtu
Commercia	Hospitality	15,000	Natural Gas	Gas	549	MMBtu
Commercia	Hotel	315,000	Natural Gas	Gas	11,537	MMBtu
Industrial	Light Industrial	650,000	Natural Gas	Gas	23,807	MMBtu

GHG Emissions

Total Organization-Wide Stationary Source Combustion by Fuel Type

Fuel Type	Quantity Combusted	Units
Coal and Coke - Solid		
Anthracite Coal	0	short ton
Bituminous Coal	0	short ton
Sub-bituminous Coal	0	short ton
Lignite Coal	0	short ton
Mixed (Commercial Sector)	0	short ton
Mixed (Electric Power Sector)	0	short ton
Mixed (Industrial Coking)	0	short ton
Mixed (Industrial Sector)	0	short ton
Coal Coke	0	short ton
Other Fuels - Solid		
Municipal Solid Waste	0	short ton
Petroleum Coke (Solid)	0	short ton
Plastics	0	short ton
Tires	0	short ton
Biomass Fuels - Solid		
Agricultural Byproducts	0	short ton
Peat	0	short ton
Solid Byproducts	0	short ton
Wood and Wood Residuals	0	short ton
Gaseous Fuels		
Natural Gas	82,966,472	scf
Propane Gas	0	scf
Landfill Gas	0	scf
Petroleum Products		
Distillate Fuel Oil No. 2	0	gallons
Residual Fuel Oil No. 6	0	gallons
Kerosene	0	gallons
Liquefied Petroleum Gases (LPG)	0	gallons
Biomass Fuels - Liquid		
Biodiesel (100%)	0	gallons
Ethanol (100%)	0	gallons
Rendered Animal Fat	0	gallons
Vegetable Oil	0	gallons

Total Organization-Wide CO_2, CH_4 and N_2O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Coal and Coke - Solid			
Anthracite Coal	0	0.0	0.0
Bituminous Coal	0	0.0	0.0
Sub-bituminous Coal	0	0.0	0.0
Lignite Coal	0	0.0	0.0
Mixed (Commercial Sector)	0	0.0	0.0
Mixed (Electric Power Sector)	0	0.0	0.0
Mixed (Industrial Coking)	0	0.0	0.0
Mixed (Industrial Sector)	0	0.0	0.0
Coal Coke	0	0.0	0.0
Other Fuels - Solid			
Municipal Solid Waste	0	0.0	0.0
Petroleum Coke (Solid)	0	0.0	0.0
Plastics	0	0.0	0.0
Tires	0	0.0	0.0
Gaseous Fuels			
Natural Gas	4,516,695	85,455.5	8,296.6
Propane Gas	0	0.0	0.0
Landfill Gas	0	0.0	0.0
Petroleum Products			
Distillate Fuel Oil No. 2	0	0.0	0.0
Residual Fuel Oil No. 6	0	0.0	0.0
Kerosene	0	0.0	0.0
Liquefied Petroleum Gases (LPG)	0	0.0	0.0
Total Fossil Fuel Emissions	**4,516,695**	**85,455.5**	**8,296.6**
Biomass Fuels - Solid			
Agricultural Byproducts	0	0.0	0.0
Peat	0	0.0	0.0
Solid Byproducts	0	0.0	0.0

Wood and Wood Residuals	0	0.0	0.0
Biomass Fuels - Liquid			
Biodiesel (100%)	0	0.0	0.0
Ethanol (100%)	0	0.0	0.0
Rendered Animal Fat	0	0.0	0.0
Vegetable Oil	0	0.0	0.0
Total Non-Fossil Fuel Emissions	**0**	**0.0**	**0.0**
Total Emissions for all Fuels	**4,516,695**	**85,455.5**	**8,296.6**

Total CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**4,521.3**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**0.0**

- If mileage or fuel usage is unknown, estimate using approximate fuel economy values from the manufacturer, www.fueleconomy.gov, or the Reference Table below.
- Vehicle year and Miles traveled are not necessary for non-road equiment.

(B) When using biofuels, typically the biofuel (biodiesel or ethanol) is mixed with a petroleum fuel (diesel or gasoline) for use in vehicles. Enter the biodiesel and ethanol percentages of the fuel if known, or leave default values shown below.

Biodiesel Percent:	20	%
Ethanol Percent:	80	%

(C) Biomass CO_2 emissions from biodiesel and ethanol are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	On-Road or Non-Road?	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
Fleet-012	*HQ Fleet*	*OnRoad*	*Passenger Cars - Gasoline*	*2019*	*500*	*gal*	*12,400*
Construction - Commuters	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	12,166	gal	219,000
Construction - Dump Trucks	Dump Trucks	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	28,815	gal	219,000
Construction - Semi-trucks	Semis	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	35,322	gal	219,000
Construction Equipment - Small Eng	Loaders, Dozers, Graders	NonRoad	Construction/Mining Equipment - Diesel Equipment		342,188	gal	
Construction Equipment - Large Eng	Excavator, Crane	NonRoad	Construction/Mining Equipment - Diesel Off-Road Trucks		228,125	gal	
Residents	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	840,140	gal	31,488,000
Employees	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	64,035	gal	2,400,000
Delivery Trucks	Delivery Trucks	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	6,814	gal	84,000

Reference Table: Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	24.8
Other 2-Axle, 4-Tire Vehicles	18.1
Motorcycles	44.0
Single unit 2-Axle 6-Tire or More Trucks	7.9
Combination Trucks	6.9
Diesel Buses (Diesel Heavy-Duty Vehicles)	7.4

Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2022 (Updated February 2024), Table VM-1.

GHG Emissions

Total Organization-Wide Mobile Source Fuel Usage and CO_2 Emissions (On-Road and Off-Road Vehicles)

Fuel Type	Fuel Usage	Units	CO_2 (kg)

Motor Gasoline	916,341	gallons	8,045,474	
Diesel Fuel	641,264	gallons	6,547,305	
Residual Fuel Oil	0	gallons	0	
Aviation Gasoline	0	gallons	0	
Kerosene-Type Jet Fuel	0	gallons	0	
Liquefied Petroleum Gases (LPG)	0	gallons	0	
Ethanol	0	gallons	0	*Note: emissions here are only for the ga*
Biodiesel	0	gallons	0	*Note: emissions here are only for the die*
Liquefied Natural Gas (LNG)	0	gallons	0	
Compressed Natural Gas (CNG)	0	scf	0	

Total Organization-Wide On-Road Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Gasoline	1984-93	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	34,107,000	174,116.2	49,523.4
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Light-Duty Trucks - Gasoline	1987-93	0	0.0	0.0
(Vans, Pickup Trucks, SUVs)	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Heavy-Duty Vehicles - Gasoline	1985-86	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0

Motorcycles - Gasoline		1960-1995	0	0.0	0.0
		1996-2005	0	0.0	0.0
		2006-2024	0	0.0	0.0

Total Organization-Wide On-Road Non-Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Light-Duty Trucks - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Medium- and Heavy-Duty Vehicles -	Diesel	1960-2006	0	0.0	0.0
		2007-2024	522,000	4,959.0	22,498.2
Light-Duty Cars	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Light-Duty Trucks	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Medium-Duty Trucks	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Heavy-Duty Trucks	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Buses	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0

Total Organization-Wide Non-Road Mobile Source Fuel Usage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Fuel Usage (gallons)	CH_4 (g)	N_2O (g)
Ships and Boats	Residual Fuel Oil	0	0.0	0.0
	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Locomotives	Diesel	0	0.0	0.0
Aircraft	Jet Fuel	0	0.0	0.0
	Aviation Gasoline	0	0.0	0.0
Agricultural Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	0	0.0	0.0
	Diesel Off-Road Trucks	0	0.0	0.0
	LPG	0	0.0	0.0
Construction/Mining Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	342188	346170.9	322146.4
	Diesel Off-Road Trucks	228125	208211.9	126674.3
	LPG	0	0.0	0.0
Lawn and Garden Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Airport Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Industrial/Commercial Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Logging Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Railroad Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Recreational Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**14,751.3**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**0.0**

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Scope 2 Emissions from Purchase of Electricity

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U.S. Environmental Protection Agency

Guidance

The Indirect Emissions from Purchased Electricity Guidance document provides guidance for quantifying two scope 2 emissions totals, using a **location-based method** and a **market-based method**. The organization should quantify and report both totals in its GHG inventory. The location-based method considers average emission factors for the electricity grids that provide electricity. The market-based method considers contractual arrangements under which the organization procures electricity from specific sources, such as renewable energy.

(A) Enter total annual electricity purchased in kWh and each eGRID subregion for each facility or site in ORANGE cells of **Table 1**.
(B) If electricity consumption data are not available for a facility, an estimate should be made for completeness.
See the "Items to Note" section of the Help sheet for suggested estimation approaches.
(C) Select "eGRID subregion" from drop box and enter "Electricity Purchased."
- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion. If subregion cannot be determined from the map, find the correct subregion by entering the location's zip code into EPA's Power Profiler:
https://www.epa.gov/egrid/power-profiler#/
(D) See the market-based emission factor hierarchy on the market-based method Help sheet. If any of the first four types of emission factors are applicable, enter the factors in the yellow cells marked as "<enter factor>". If not, leave the yellow cells as is, and eGRID subregion factors will be used for market-based emissions.

Example entry is shown in first row (*GREEN Italics*) for a facility that purchases RECs for 100% of its consumption, and therefore has a market-based emission factor of 0.

Tips: Enter electricity usage by location and then look up the eGRID subregion for each location.
If you purchase renewable energy that is less than 100% of your site's electricity, see the example in the market-based method Help sheet.

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

					Market-Based *Use these cells to enter applicable market-based emission factors*					
					Emission Factors			**Emissions**		
Source ID	**Source Description**	**Source Area (sq ft)**	**eGRID Subregion** *where electricity is consumed*	**Electricity Purchased (kWh)**	**CO_2 Emissions (lb/MWh)**	**CH_4 Emissions (lb/MWh)**	**N_2O Emissions (lb/MWh)**	**CO_2 Emissions (lb)**	**CH_4 Emissions (lb)**	**N_2O Emissions (lb)**
Bldg-012	*East Power Plant*	*12,517*	*HICC Miscellaneous*	*200,000*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*
Residential	Multifamily Units (Apartment Units)		MRO West	12,185,850	1239.8	0.138	0.02	15,108,016.8	1,681.6	243.7
Residential	Townhome Units		MRO West	2,696,478	1239.8	0.138	0.02	3,343,093.4	372.1	53.9
Commercia	Commercial - Retail	270,000	MRO West	5,103,000	936.5	0.102	0.015	4,778,959.5	520.5	76.5
Commercia	Commercial - Other	254,000	MRO West	4,800,600	936.5	0.102	0.015	4,495,761.9	489.7	72.0
Commercia	Hospitality	15,000	MRO West	204,000	936.5	0.102	0.015	191,046.0	20.8	3.1
Commercia	Hotel	315,000	MRO West	4,284,000	936.5	0.102	0.015	4,011,966.0	437.0	64.3
Industrial	Light Industrial	650,000	MRO West	4,095,000	936.5	0.102	0.015	3,834,967.5	417.7	61.4
					<enter factor>	<enter factor>	<enter factor>		

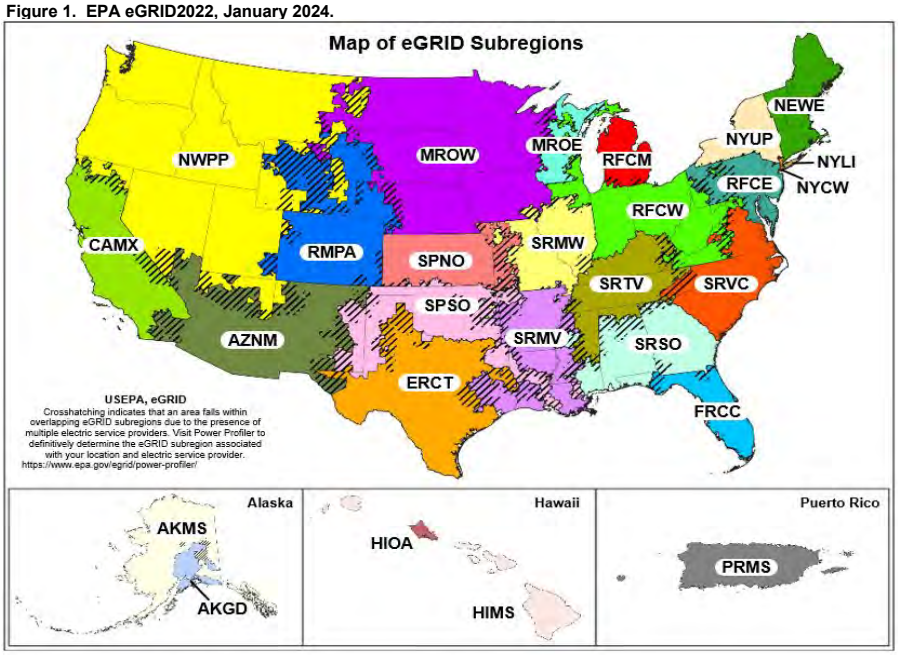
GHG Emissions

CO_2 Equivalent Emissions (metric tons)	
Location-Based Electricity Emissions	14,278.2
Market-Based Electricity Emissions	16,341.6

Notes:

1. CO_2, CH_4 and N_2O emissions are estimated using methodology provided in EPA's Center for Corporate Climate Leadership Greenhouse Gas Inventory Guidance - Indirect Emissions from Purchased Electricity (January 2016).

Figure 1. EPA eGRID2022, January 2024.



Scope 2 Emissions from Purchase of Steam

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U.S. Environmental Protection Agency

Guidance

(A) Enter annual data for each facility or site in ORANGE cells in **Table 1**.
- Enter amount of steam purchased in mmBtu. Heat Content conversions can be found on the "Heat Content" sheet.
- Select "Fuel Type" from drop box to indicate the fuel used to generate the steam.
-- If "Fuel Type" is not known, select "Natural Gas" from drop box as default value.
-- If more than one fuel type is used, enter multiple rows, apportioning the steam using the same percentages as the fuel mix.

(B) If steam is purchased at a facility but steam consumption data are not available, an estimate should be made for completeness.
See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Preferred Method (steam emission factors ARE available from your supplier). Example entry is shown in first data row (*GREEN Italics*).
- Enter supplier emission factors for CO_2, CH_4, and N_2O in the purple cells marked as "<enter factor>" if available, otherwise leave factor cells blank.
- These should be expressed in lb / mmBtu of Steam. Heat Content conversions can be found on the "Heat Content" sheet.
- Boiler Efficiency is not necessary if emission factors are available.
- Typically supplier emission factors for steam will apply to both location-based and market-based emissions, and no market-based emission factors need to be entered. However, if there are different applicable market-based emission factors, enter the factors in the yellow cells marked as "<enter factor>". If needed, see the market-based method Help Sheet for guidance.

(D) Alternative Method (supplier-specific emission factors are NOT available). Example entry is shown in second data row (*BLUE Italics*).
- Enter boiler efficiency. If boiler efficiency is not known, use 80% as default value. Do not enter market-based emission factors.

Table 1. Fuel, Boiler, Steam and Emission Factor Data for Steam Purchased

						Location-Based *Use these cells to enter emission factors from the steam supplier (if available)*						Market-Based *Use these cells to enter market-based emission factors if different than the supplier emission factors.*					
						Emission Factors			Emissions			Emission Factors			Emissions		
Source ID	Source Description	Source Area (sq ft)	Fuel Type	Boiler Efficiency (%)	Steam Purchased (mmBtu)	CO_2 Factor (kg / mmBtu)	CH_4 Factor (g / mmBtu)	N_2O Factor (g / mmBtu)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)	CO_2 Factor (kg / mmBtu)	CH_4 Factor (g / mmBtu)	N_2O Factor (g / mmBtu)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
Bldg-011	*Office*	*5,000*	*Natural Gas*	*80*	*5,000*	*72.00*	*1.50*	*0.60*	*450,000*	*9,375*	*3,750*	70.00	1.00	0.50	*437,500*	*6,250*	*3,125*
Bldg-012	*Steam-Blr Room*	*2,000*	*Sub-bituminous Coal*	*80*	*1,000*	<enter factor>	<enter factor>	<enter factor>	121,463	13,750	2,000	<enter factor>	<enter factor>	<enter factor>	121,463	13,750	2,000
						<enter factor>	<enter factor>	<enter factor>				<enter factor>	<enter factor>	<enter factor>		

Scope 3 Emissions from Business Travel

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Guidance

(A) Enter annual data in ORANGE cells in the table corresponding to the transport method. Example entry is shown in first row (*GREEN Italics*).
(B) Mileage data can be entered for individual trips or individual employees, or miles for multiple employees can be subtotaled by vehicle type or flight length.
(C) For employees traveling by car, select "Vehicle Type" and enter miles traveled (vehicle-miles) in **Table 1**.
(D) For employees traveling by rail or bus, select "Vehicle Type" and enter miles traveled (passenger-miles) in **Table 2**.
(E) For employees traveling by air, select "Flight Length" and enter miles traveled (passenger-miles) in **Table 3**.

--- Note: The emission factors for air travel do not include radiative forcing. Per the GHG Protocol, for air travel emission factors, multipliers or other corrections to account for radiative forcing may be applied to the GWP of emissions arising from aircraft transport. If applied, companies should disclose the specific factor used.

Table 1. Personal Vehicle, Rental Car or Taxi - Business Travel by Vehicle-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Vehicle-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Passenger Car*	*100*	*18*	*0.5*	*0.3*
Total for all Personal Vehicle Business Travel				0	0.0	0.0

Table 2. Rail or Bus - Business Travel by Passenger-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Passenger-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Transit Rail (i.e. Subway, Tram)*	*100*	*9*	*0.7*	*0.1*

Total for all Air Business Travel				0.0	0.0	0.0

GHG Emissions

Total CO_2 Emissions by Travel Type

Transport Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Passenger Car	0.0	0.0	0.0
Light-Duty Truck	0.0	0.0	0.0
Motorcycle	0.0	0.0	0.0
Intercity Rail - Northeast Corridor	0.0	0.0	0.0
Intercity Rail - Other Routes	0.0	0.0	0.0
Intercity Rail - National Average	0.0	0.0	0.0
Commuter Rail	0.0	0.0	0.0
Transit Rail (i.e. Subway, Tram)	0.0	0.0	0.0
Bus	0.0	0.0	0.0
Air Short Haul (< 300 miles)	0.0	0.0	0.0
Air Medium Haul (>= 300 miles, < 2300 miles)	0.0	0.0	0.0
Air Long Haul (>= 2300 miles)	0.0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Business Travel	**0.0**

Scope 3 Emissions from Employee Commuting

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Guidance

(A) Enter annual data in ORANGE cells in the table corresponding to the transport method. Example entry is shown in first row (*GREEN Italics*).
(B) For employees commuting in a personal vehicle, select the "Vehicle Type" and enter miles traveled (vehicle-miles) in **Table 1**.
(C) For employees commuting using public transportation, select the "Transport Type" and enter miles traveled (passenger-miles) in **Table 2**.

Tip: If more than one employee travels by the same vehicle type or transport type, miles can be combined and entered in one row.

Table 1. Personal Vehicle - Employee Commuting by Vehicle-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Vehicle-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Passenger Car*	*100*	*18*	*0.5*	*0.3*
Total for all Personal Vehicle Employee Commuting				0	0.0	0.0

Table 2. Public Transportation - Employee Commuting by Passenger-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Transport Type	Passenger-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Bus*	*100*	*7*	*0*	*0.2*
Total for all Public Transportation Employee Commuting				0	0.0	0.0

GHG Emissions

Total CO_2 Emissions by Commuting Type

Transport Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Passenger Car	0	0.0	0.0
Light-Duty Truck	0	0.0	0.0
Motorcycle	0	0.0	0.0
Intercity Rail - Northeast Corridor	0	0.0	0.0
Intercity Rail - Other Routes	0	0.0	0.0
Intercity Rail - National Average	0	0.0	0.0
Commuter Rail	0	0.0	0.0
Transit Rail (i.e. Subway, Tram)	0	0.0	0.0
Bus	0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Commuting	0.0

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Scope 3 Emissions from Waste

Guidance

(A) Enter annual waste data in ORANGE cells. Example entry is shown in first row (*GREEN Italics*).

(B) First, choose the appropriate material then the disposal method from the drop down options. For the average-data method, use one of the mixed material types, such as mixed MSW. If the exact waste material is not available, consider an appropriate proxy. For example, dimensional lumber can be used as a proxy for wood furniture.

(C) Choose an appropriate disposal method. Note that not all disposal methods are available for all materials. If there is a #NA or # Value error in the emissions column, you must pick a new material type or appropriate disposal method.

Table 1. Waste Disposal Weight by Waste Material and Disposal Method (CO_2, CH_4 and N_2O)

Source ID	Source Description	Waste Material	Disposal Method	Weight	Unit	CO_2e Emissions (kg)
Bldg-012	*East Power Plant Finished Goods*	*Copper Wire*	*Landfilled*	*1,000*	*metric ton*	*22,040*
Residential Buildings	Residential Waste	Mixed MSW municipal solid waste	Landfilled	8,614	short ton	*4,996,120*
Residential Buildings	Residential Recycling	Mixed Recyclables	Recycled	3,085	short ton	*277,650*
Residential Buildings	Residential Compost	Mixed Organics	Composted	1,157	short ton	*150,410*
Commercial Buildings	Commercial Waste	Mixed MSW municipal solid waste	Landfilled	1,313	short ton	*761,540*
Commercial Buildings	Commercial Recycling	Mixed Recyclables	Recycled	470	short ton	*42,300*
Commercial Buildings	Commercial Compost	Mixed Organics	Composted	176	short ton	*22,880*

GHG Emissions

Total Emissions by Disposal Method

Waste Material	CO_2e (kg)
Recycled	319950
Landfilled	5757660
Combusted	0
Composted	173290
Anaerobically Digested (Dry Digestate with Curing)	0
Anaerobically Digested (Wet Digestate with Curing)	0

Total CO_2 Equivalent Emissions (metric tons) - Waste	**6,250.9**

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Emissions Summary Development Scenario 2

Guidance

The total GHG emissions from each source category are provided below. You may also use this summary sheet to fill out the *Annual GHG Inventory Summary and Target Tracking Form* (.xls) as this Calculator only quantifies one year of emissions at a time. The form is available here: https://www.epa.gov/climateleadership/target-setting

By entering the data below into the appropriate cell of the *Annual GHG Inventory Summary and Target Tracking Form,* you will be able to compare multiple years of data.

If you have multiple Calculator files covering sub-sets of your inventory for a particular reporting period, sum each of the emission categories (e.g. Stationary Combustion) to an organizational total, which then can be entered into the *Annual GHG Inventory Summary and Target Tracking Form* .

(A) Enter organization information into the orange cells. Other cells on this sheet will be automatically calculated from the data entered in the sheets in this workbook. Blue cells indicate required emission sources if applicable. Green cells indicate scope 3 emission sources and offsets, which organizations may optionally include in its inventory.

(B) The "Go To Sheet" buttons can be used to navigate to the data entry sheets.

Organizational Information:

Organization Name:	Rochester Technology Campus Rochester, Minnesota
Organization Address:	
Inventory Reporting Period:	*e.g., Calendar Year 2023, Fiscal Year 2023*
Start:	*MM/DD/YY*
End:	*MM/DD/YY*
Name of Preparer:	Ericka Massa, SEH
Contact Information of Preparer:	emassa@sehinc.com
Date Prepared:	5/29/2024

Summary of Organization's Emissions:

Scope 1 Emissions

		CO_2-e (metric tons)
Go To Sheet	Stationary Combustion	4,502
Go To Sheet	Mobile Sources	12,772
Go To Sheet	Refrigeration / AC Equipment Use	0
Go To Sheet	Fire Suppression	0
Go To Sheet	Purchased Gases	0

	CO2-e (metric tons)		
	Gross	Offsets	Net
Scope 1 Summary	17,274	0	17,274

Scope 2 Emissions

Location-Based Scope 2 Emissions		CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	14,025
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Location-Based Scope 2 Summary	14,025	0	14,025

Market-Based Scope 2 Emissions		CO_2-e (metric tons)
Go To Sheet	Purchased and Consumed Electricity	15,525
Go To Sheet	Purchased and Consumed Steam	0

	CO_2-e (metric tons)		
	Gross	Offsets	Net
Market-Based Scope 2 Summary	15,525	0	15,525

Scope 1 & 2 Summary

	CO_2-e (metric tons)	
	Gross	Net
Total Scope 1 & Location-Based Scope 2	31,299	31,299
Total Scope 1 & Market-Based Scope 2	32,799	32,799

Scope 3 Emissions

		CO_2-e (metric tons)		
		Gross	Offsets	Net
Go To Sheet	Business Travel	0	0	0
Go To Sheet	Employee Commuting	0	0	0
Go To Sheet	Upstream Transportation and Distribution	0	0	0
Go To Sheet	Waste	4,796	0	4,796

Required Supplemental Information

		CO_2-e (metric tons)
Go To Sheet	Biomass CO_2 Emissions from Stationary Sources	0
Go To Sheet	Biomass CO_2 Emissions from Mobile Sources	0

Scope 1 Emissions from Stationary Combustion Sources

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Guidance

(A) Enter annual data for each combustion unit, facility, or site (by fuel type) in ORANGE cells on **Table 1**. Example entry is shown in first row (*GREEN Italics*).
- Select "Fuel Combusted" from drop down box.
- Enter "Quantity Combusted" and choose the appropriate units from the drop down box in the unit column. If it's necessary to convert units, common heat contents can be found on the "Heat Content" sheet and unit conversions on the "Unit Conversion" sheet.

(B) If fuel is consumed in a facility but stationary fuel consumption data are not available, an estimate should be made for completeness. See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Biomass CO_2 emissions are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Stationary Source Fuel Combustion

Source ID	Source Description	Source Area (sq ft)	Fuel Combusted	Fuel State (solid, liquid, gas)	Quantity Combusted	Units
BLR-012	*East Power Plant*	*12,517*	*Natural Gas*	*Gas*	*10,000*	*MMBtu*
Residential	Multifamily Units (Apartment Units)		Natural Gas	Gas	16,092	MMBtu
Residential	Townhome Units		Natural Gas	Gas	3,887	MMBtu
Commercia	Commercial - Retail	270,000	Natural Gas	Gas	10,775	MMBtu
Commercia	Commercial - Other	254,000	Natural Gas	Gas	10,137	MMBtu
Commercia	Hospitality	15,000	Natural Gas	Gas	549	MMBtu
Commercia	Hotel	315,000	Natural Gas	Gas	11,537	MMBtu
Industrial	Light Industrial	650,000	Natural Gas	Gas	23,807	MMBtu
Recreationa	Sports Complex	250,000	Natural Gas	Gas	7,976	MMBtu

GHG Emissions

Total Organization-Wide Stationary Source Combustion by Fuel Type

Fuel Type	Quantity Combusted	Units
Coal and Coke - Solid		
Anthracite Coal	0	short ton
Bituminous Coal	0	short ton
Sub-bituminous Coal	0	short ton
Lignite Coal	0	short ton
Mixed (Commercial Sector)	0	short ton
Mixed (Electric Power Sector)	0	short ton
Mixed (Industrial Coking)	0	short ton
Mixed (Industrial Sector)	0	short ton
Coal Coke	0	short ton
Other Fuels - Solid		
Municipal Solid Waste	0	short ton
Petroleum Coke (Solid)	0	short ton
Plastics	0	short ton
Tires	0	short ton
Biomass Fuels - Solid		
Agricultural Byproducts	0	short ton
Peat	0	short ton
Solid Byproducts	0	short ton
Wood and Wood Residuals	0	short ton
Gaseous Fuels		
Natural Gas	82,612,086	scf
Propane Gas	0	scf
Landfill Gas	0	scf
Petroleum Products		
Distillate Fuel Oil No. 2	0	gallons
Residual Fuel Oil No. 6	0	gallons
Kerosene	0	gallons
Liquefied Petroleum Gases (LPG)	0	gallons
Biomass Fuels - Liquid		
Biodiesel (100%)	0	gallons
Ethanol (100%)	0	gallons
Rendered Animal Fat	0	gallons
Vegetable Oil	0	gallons

Total Organization-Wide CO_2, CH_4 and N_2O Emissions from Stationary Source Fuel Combustion

Fuel Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Coal and Coke - Solid			
Anthracite Coal	0	0.0	0.0
Bituminous Coal	0	0.0	0.0
Sub-bituminous Coal	0	0.0	0.0
Lignite Coal	0	0.0	0.0
Mixed (Commercial Sector)	0	0.0	0.0
Mixed (Electric Power Sector)	0	0.0	0.0
Mixed (Industrial Coking)	0	0.0	0.0
Mixed (Industrial Sector)	0	0.0	0.0
Coal Coke	0	0.0	0.0
Other Fuels - Solid			
Municipal Solid Waste	0	0.0	0.0
Petroleum Coke (Solid)	0	0.0	0.0
Plastics	0	0.0	0.0
Tires	0	0.0	0.0
Gaseous Fuels			
Natural Gas	4,497,402	85,090.4	8,261.2
Propane Gas	0	0.0	0.0
Landfill Gas	0	0.0	0.0
Petroleum Products			
Distillate Fuel Oil No. 2	0	0.0	0.0
Residual Fuel Oil No. 6	0	0.0	0.0
Kerosene	0	0.0	0.0
Liquefied Petroleum Gases (LPG)	0	0.0	0.0
Total Fossil Fuel Emissions	**4,497,402**	**85,090.4**	**8,261.2**
Biomass Fuels - Solid			
Agricultural Byproducts	0	0.0	0.0
Peat	0	0.0	0.0
Solid Byproducts	0	0.0	0.0

Wood and Wood Residuals	0	0.0	0.0
Biomass Fuels - Liquid			
Biodiesel (100%)	0	0.0	0.0
Ethanol (100%)	0	0.0	0.0
Rendered Animal Fat	0	0.0	0.0
Vegetable Oil	0	0.0	0.0
Total Non-Fossil Fuel Emissions	**0**	**0.0**	**0.0**
Total Emissions for all Fuels	**4,497,402**	**85,090.4**	**8,261.2**

Total CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**4,502.0**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Stationary Combustion	**0.0**

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Scope 1 Emissions from Mobile Sources

Guidance

(A) Enter annual data for each vehicle or group of vehicles (grouped by vehicle type, vehicle year, and fuel type) in ORANGE cells in **Table 1**. Example entry is shown in first row (GREEN *Italics*). Only enter vehicles owned or leased by your organization on this sheet. All other vehicle use such as employee commuting or business travel is considered a scope 3 emissions source and should be reported in the corresponding scope 3 sheets.

- *Note: The latest mobile combustion factors reflect year 2021 data. Therefore, for all vehicle model years 2022 onward, the 2021 year factor is used.*
- *Select "On-Road" or "Non-Road" from the drop down box to determine the Vehicle Types available. You* ***must make this selection before picking the vehicle type.***
- Select "Vehicle Type" from drop down box (closest type available).
- Enter "Fuel Usage" in appropriate units (units appear when vehicle type is selected).
  - If mileage or fuel usage is unknown, estimate using approximate fuel economy values from the manufacturer, www.fueleconomy.gov, or the Reference Table below.
  - Vehicle year and Miles traveled are not necessary for non-road equiment.

(B) When using biofuels, typically the biofuel (biodiesel or ethanol) is mixed with a petroleum fuel (diesel or gasoline) for use in vehicles. Enter the biodiesel and ethanol percentages of the fuel if known, or leave default values shown below.

Biodiesel Percent:	20	%
Ethanol Percent:	80	%

(C) Biomass CO_2 emissions from biodiesel and ethanol are not reported in the total emissions, but are reported separately at the bottom of the sheet.

Table 1. Mobile Source Fuel Combustion and Miles Traveled

Source ID	Source Description	On-Road or Non-Road?	Vehicle Type	Vehicle Year	Fuel Usage	Units	Miles Traveled
Fleet-012	*HQ Fleet*	*OnRoad*	*Passenger Cars - Gasoline*	*2019*	*500*	*gal*	*12,400*
Construction - Commuters	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	12,166	gal	219,000
Construction - Dump Trucks	Dump Trucks	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	28,815	gal	219,000
Construction - Semi-trucks	Semis	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	35,322	gal	219,000
Construction Equipment - Small Eng	Loaders, Dozers, Graders	NonRoad	Construction/Mining Equipment - Diesel Equipment		342,188	gal	
Construction Equipment - Large Eng	Excavator, Crane	NonRoad	Construction/Mining Equipment - Diesel Off-Road Trucks		228,125	gal	
Residents	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	614,736	gal	31,488,000
Employees	Passenger Cars	OnRoad	Passenger Cars - Gasoline	2019	64,035	gal	2,400,000
Delivery Trucks	Delivery Trucks	OnRoad	Medium- and Heavy-Duty Vehicles - Diesel	2019	6,814	gal	84,000

Reference Table: Average Fuel Economy by Vehicle Type

Vehicle Type	Average Fuel Economy (mpg)
Passenger Cars	24.8
Other 2-Axle, 4-Tire Vehicles	18.1
Motorcycles	44.0
Single unit 2-Axle 6-Tire or More Trucks	7.9
Combination Trucks	6.9
Diesel Buses (Diesel Heavy-Duty Vehicles)	7.4

Average mpg values from the U.S. Department of Transportation, Federal Highway Administration, Highway Statistics 2022 (Updated February 2024), Table VM-1.

GHG Emissions

Total Organization-Wide Mobile Source Fuel Usage and CO_2 Emissions (On-Road and Off-Road Vehicles)

Fuel Type	Fuel Usage	Units	CO_2 (kg)	
Motor Gasoline	690,937	gallons	6,066,427	
Diesel Fuel	641,264	gallons	6,547,305	
Residual Fuel Oil	0	gallons	0	
Aviation Gasoline	0	gallons	0	
Kerosene-Type Jet Fuel	0	gallons	0	
Liquefied Petroleum Gases (LPG)	0	gallons	0	
Ethanol	0	gallons	0	*Note: emissions here are only for the ga*
Biodiesel	0	gallons	0	*Note: emissions here are only for the die*
Liquefied Natural Gas (LNG)	0	gallons	0	
Compressed Natural Gas (CNG)	0	scf	0	

Total Organization-Wide On-Road Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Gasoline	1984-93	0	0.0	0.0
	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	34,107,000	174,116.2	49,523.4
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Light-Duty Trucks - Gasoline	1987-93	0	0.0	0.0
(Vans, Pickup Trucks, SUVs)	1994	0	0.0	0.0
	1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0
	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Heavy-Duty Vehicles - Gasoline	1985-86	0	0.0	0.0
	1987	0	0.0	0.0
	1988-1989	0	0.0	0.0
	1990-1995	0	0.0	0.0
	1996	0	0.0	0.0
	1997	0	0.0	0.0
	1998	0	0.0	0.0
	1999	0	0.0	0.0
	2000	0	0.0	0.0
	2001	0	0.0	0.0
	2002	0	0.0	0.0
	2003	0	0.0	0.0
	2004	0	0.0	0.0
	2005	0	0.0	0.0
	2006	0	0.0	0.0
	2007	0	0.0	0.0
	2008	0	0.0	0.0

	2009	0	0.0	0.0
	2010	0	0.0	0.0
	2011	0	0.0	0.0
	2012	0	0.0	0.0
	2013	0	0.0	0.0
	2014	0	0.0	0.0
	2015	0	0.0	0.0
	2016	0	0.0	0.0
	2017	0	0.0	0.0
	2018	0	0.0	0.0
	2019	0	0.0	0.0
	2020	0	0.0	0.0
	2021	0	0.0	0.0
	2022	0	0.0	0.0
	2023	0	0.0	0.0
	2024	0	0.0	0.0
Motorcycles - Gasoline	1960-1995	0	0.0	0.0
	1996-2005	0	0.0	0.0
	2006-2024	0	0.0	0.0

Total Organization-Wide On-Road Non-Gasoline Mobile Source Mileage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Vehicle Year	Mileage (miles)	CH_4 (g)	N_2O (g)
Passenger Cars - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Light-Duty Trucks - Diesel	Diesel	1960-1982	0	0.0	0.0
		1983-2006	0	0.0	0.0
		2007-2024	0	0.0	0.0
Medium- and Heavy-Duty Vehicles -	Diesel	1960-2006	0	0.0	0.0
		2007-2024	522,000	4,959.0	22,498.2
Light-Duty Cars	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Light-Duty Trucks	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Medium-Duty Trucks	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Heavy-Duty Trucks	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0
Buses	Methanol		0	0.0	0.0
	Ethanol		0	0.0	0.0
	CNG		0	0.0	0.0
	LPG		0	0.0	0.0
	LNG		0	0.0	0.0
	Biodiesel		0	0.0	0.0

Total Organization-Wide Non-Road Mobile Source Fuel Usage and CH_4/N_2O Emissions

Vehicle Type	Fuel Type	Fuel Usage (gallons)	CH_4 (g)	N_2O (g)
Ships and Boats	Residual Fuel Oil	0	0.0	0.0
	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Locomotives	Diesel	0	0.0	0.0
Aircraft	Jet Fuel	0	0.0	0.0
	Aviation Gasoline	0	0.0	0.0
Agricultural Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	0	0.0	0.0
	Diesel Off-Road Trucks	0	0.0	0.0
	LPG	0	0.0	0.0
Construction/Mining Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Gasoline Off-Road Trucks	0	0.0	0.0
	Diesel Equipment	342188	346170.9	322146.4
	Diesel Off-Road Trucks	228125	208211.9	126674.3
	LPG	0	0.0	0.0
Lawn and Garden Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Airport Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Industrial/Commercial Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Logging Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
Railroad Equipment	Gasoline	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0
Recreational Equipment	Gasoline (2 stroke)	0	0.0	0.0
	Gasoline (4 stroke)	0	0.0	0.0
	Diesel	0	0.0	0.0
	LPG	0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**12,772.3**
Total Biomass CO_2 Equivalent Emissions (metric tons) - Mobile Sources	**0.0**

Back to Intro | Back to Summary | Help | Help - Market-Based Method

Scope 2 Emissions from Purchase of Electricity

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Guidance

The Indirect Emissions from Purchased Electricity Guidance document provides guidance for quantifying two scope 2 emissions totals, using a **location-based method** and a **market-based method**. The organization should quantify and report both totals in its GHG inventory. The location-based method considers average emission factors for the electricity grids that provide electricity. The market-based method considers contractual arrangements under which the organization procures electricity from specific sources, such as renewable energy.

(A) Enter total annual electricity purchased in kWh and each eGRID subregion for each facility or site in ORANGE cells of **Table 1**.
(B) If electricity consumption data are not available for a facility, an estimate should be made for completeness.
See the "Items to Note" section of the Help sheet for suggested estimation approaches.
(C) Select "eGRID subregion" from drop box and enter "Electricity Purchased."
- Use map (Figure 1) at bottom of sheet to determine appropriate eGRID subregion. If subregion cannot be determined from the map, find the correct subregion by entering the location's zip code into EPA's Power Profiler:
https://www.epa.gov/egrid/power-profiler#/
(D) See the market-based emission factor hierarchy on the market-based method Help sheet. If any of the first four types of emission factors are applicable, enter the factors in the yellow cells marked as "<enter factor>". If not, leave the yellow cells as is, and eGRID subregion factors will be used for market-based emissions.

Example entry is shown in first row (*GREEN Italics*) for a facility that purchases RECs for 100% of its consumption, and therefore has a market-based emission factor of 0.

Tips: Enter electricity usage by location and then look up the eGRID subregion for each location.
If you purchase renewable energy that is less than 100% of your site's electricity, see the example in the market-based method Help sheet.

Table 1. Total Amount of Electricity Purchased by eGRID Subregion

					Market-Based *Use these cells to enter applicable market-based emission factors*						**Location-Based**		
					Emission Factors			**Emissions**			**Emissions**		
Source ID	**Source Description**	**Source Area (sq ft)**	**eGRID Subregion** *where electricity is consumed*	**Electricity Purchased (kWh)**	**CO_2 Emissions (lb/MWh)**	**CH_4 Emissions (lb/MWh)**	**N_2O Emissions (lb/MWh)**	**CO_2 Emissions (lb)**	**CH_4 Emissions (lb)**	**N_2O Emissions (lb)**	**CO_2 Emissions (lb)**	**CH_4 Emissions (lb)**	**N_2O Emissions (lb)**
Bldg-012	*East Power Plant*	*12,517*	*HICC Miscellaneous*	*200,000*	*0*	*0*	*0*	*0.0*	*0.0*	*0.0*	*231,097.2*	*24.8*	*3.8*
Residential	Multifamily Units (Apartment Units)		MRO West	9,416,339	1239.8	0.138	0.02	11,674,377.1	1,299.5	188.3	8,818,260.2	960.5	141.2
Residential	Townhome Units		MRO West	1,399,116	1239.8	0.138	0.02	1,734,624.0	193.1	28.0	1,310,251.1	142.7	21.0
Commercial	Commercial - Retail	270,000	MRO West	5,103,000	936.5	0.102	0.015	4,778,959.5	520.5	76.5	4,778,883.0	520.5	76.5
Commercial	Commercial - Other	254,000	MRO West	4,800,600	936.5	0.102	0.015	4,495,761.9	489.7	72.0	4,495,689.9	489.7	72.0
Commercial	Hospitality	15,000	MRO West	204,000	936.5	0.102	0.015	191,046.0	20.8	3.1	191,042.9	20.8	3.1
Commercial	Hotel	315,000	MRO West	4,284,000	936.5	0.102	0.015	4,011,966.0	437.0	64.3	4,011,901.7	437.0	64.3
Industrial	Light Industrial	650,000	MRO West	4,095,000	936.5	0.102	0.015	3,834,967.5	417.7	61.4	3,834,906.1	417.7	61.4
Rec	Sports Complex	250,000	MRO West	3,475,000	936.5	0.102	0.015	3,254,337.5	354.5	52.1	3,254,285.4	354.5	52.1
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
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					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
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					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
					<enter factor>	<enter factor>	<enter factor>						
Total Emissions for All Sources				**32,777,055**				**33,976,039.5**	**3,732.6**	**545.7**	**30,695,220.4**	**3,343.3**	**491.7**

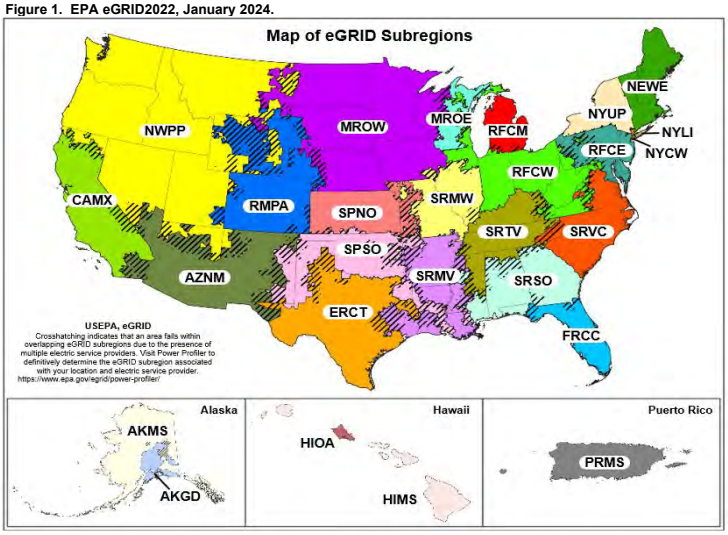
GHG Emissions

CO_2 Equivalent Emissions (metric tons)	
Location-Based Electricity Emissions	14,024.9
Market-Based Electricity Emissions	15,524.5

Notes:

1. CO_2, CH_4 and N_2O emissions are estimated using methodology provided in EPA's Center for Corporate Climate Leadership Greenhouse Gas Inventory Guidance - Indirect Emissions from Purchased Electricity (January 2016).

Figure 1. EPA eGRID2022, January 2024.



Scope 2 Emissions from Purchase of Steam

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

(A) Enter annual data for each facility or site in ORANGE cells in **Table 1**.
- Enter amount of steam purchased in mmBtu. Heat Content conversions can be found on the "Heat Content" sheet.
- Select "Fuel Type" from drop box to indicate the fuel used to generate the steam.
  -- If "Fuel Type" is not known, select "Natural Gas" from drop box as default value.
  -- If more than one fuel type is used, enter multiple rows, apportioning the steam using the same percentages as the fuel mix.

(B) If steam is purchased at a facility but steam consumption data are not available, an estimate should be made for completeness. See the "Items to Note" section of the Help sheet for suggested estimation approaches.

(C) Preferred Method (steam emission factors ARE available from your supplier). Example entry is shown in first data row (*GREEN Italics*).
- Enter supplier emission factors for CO_2, CH_4, and N_2O in the purple cells marked as "<enter factor>" if available, otherwise leave factor cells blank.
- These should be expressed in lb / mmBtu of Steam. Heat Content conversions can be found on the "Heat Content" sheet.
- Boiler Efficiency is not necessary if emission factors are available.
- Typically supplier emission factors for steam will apply to both location-based and market-based emissions, and no market-based emission factors need to be entered. However, if there are different applicable market-based emission factors, enter the factors in the yellow cells marked as "<enter factor>". If needed, see the market-based method Help Sheet for guidance.

(D) Alternative Method (supplier-specific emission factors are NOT available). Example entry is shown in second data row (*BLUE Italics*).
- Enter boiler efficiency. If boiler efficiency is not known, use 80% as default value. Do not enter market-based emission factors.

Table 1. Fuel, Boiler, Steam and Emission Factor Data for Steam Purchased

						Location-Based *Use these cells to enter emission factors from the steam supplier (if available)*						Market-Based *Use these cells to enter market-based emission factors if different than the supplier emission factors.*					
						Emission Factors			Emissions			Emission Factors			Emissions		
Source ID	Source Description	Source Area (sq ft)	Fuel Type	Boiler Efficiency (%)	Steam Purchased (mmBtu)	CO_2 Factor (kg / mmBtu)	CH_4 Factor (g / mmBtu)	N_2O Factor (g / mmBtu)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)	CO_2 Factor (kg / mmBtu)	CH_4 Factor (g / mmBtu)	N_2O Factor (g / mmBtu)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
Bldg-011	*Office*	*5,000*	*Natural Gas*	*80*	*5,000*	*72.00*	*1.50*	*0.60*	*450,000*	*9,375*	*3,750*	70.00	1.00	0.50	*437,500*	*6,250*	*3,125*
Bldg-012	*Steam-Blr Room*	*2,000*	*Sub-bituminous Coal*	*80*	*1,000*	<enter factor>	<enter factor>	<enter factor>	121,463	13,750	2,000	<enter factor>	<enter factor>	<enter factor>	121,463	13,750	2,000
						<enter factor>	<enter factor>	<enter factor>				<enter factor>	<enter factor>	<enter factor>		

Scope 3 Emissions from Business Travel

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

(A) Enter annual data in ORANGE cells in the table corresponding to the transport method. Example entry is shown in first row (*GREEN Italics*).
(B) Mileage data can be entered for individual trips or individual employees, or miles for multiple employees can be subtotaled by vehicle type or flight length.
(C) For employees traveling by car, select "Vehicle Type" and enter miles traveled (vehicle-miles) in **Table 1**.
(D) For employees traveling by rail or bus, select "Vehicle Type" and enter miles traveled (passenger-miles) in **Table 2**.
(E) For employees traveling by air, select "Flight Length" and enter miles traveled (passenger-miles) in **Table 3**.

--- Note: The emission factors for air travel do not include radiative forcing. Per the GHG Protocol, for air travel emission factors, multipliers or other corrections to account for radiative forcing may be applied to the GWP of emissions arising from aircraft transport. If applied, companies should disclose the specific factor used.

Table 1. Personal Vehicle, Rental Car or Taxi - Business Travel by Vehicle-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Vehicle-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Passenger Car*	*100*	*18*	*0.5*	*0.3*
Total for all Personal Vehicle Business Travel				0	0.0	0.0

Table 2. Rail or Bus - Business Travel by Passenger-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Passenger-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Transit Rail (i.e. Subway, Tram)*	*100*	*9*	*0.7*	*0.1*

Total for all Air Business Travel				0.0	0.0	0.0

GHG Emissions

Total CO_2 Emissions by Travel Type

Transport Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Passenger Car	0.0	0.0	0.0
Light-Duty Truck	0.0	0.0	0.0
Motorcycle	0.0	0.0	0.0
Intercity Rail - Northeast Corridor	0.0	0.0	0.0
Intercity Rail - Other Routes	0.0	0.0	0.0
Intercity Rail - National Average	0.0	0.0	0.0
Commuter Rail	0.0	0.0	0.0
Transit Rail (i.e. Subway, Tram)	0.0	0.0	0.0
Bus	0.0	0.0	0.0
Air Short Haul (< 300 miles)	0.0	0.0	0.0
Air Medium Haul (>= 300 miles, < 2300 miles)	0.0	0.0	0.0
Air Long Haul (>= 2300 miles)	0.0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Business Travel	**0.0**

Scope 3 Emissions from Employee Commuting

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Guidance

(A) Enter annual data in ORANGE cells in the table corresponding to the transport method. Example entry is shown in first row (*GREEN Italics*).
(B) For employees commuting in a personal vehicle, select the "Vehicle Type" and enter miles traveled (vehicle-miles) in **Table 1**.
(C) For employees commuting using public transportation, select the "Transport Type" and enter miles traveled (passenger-miles) in **Table 2**.

Tip: If more than one employee travels by the same vehicle type or transport type, miles can be combined and entered in one row.

Table 1. Personal Vehicle - Employee Commuting by Vehicle-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Vehicle Type	Vehicle-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Passenger Car*	*100*	*18*	*0.5*	*0.3*
Total for all Personal Vehicle Employee Commuting				0	0.0	0.0

Table 2. Public Transportation - Employee Commuting by Passenger-Miles (CO_2, CH_4 and N_2O)

Source ID	Source Description	Transport Type	Passenger-Miles (miles)	CO_2 Emissions (kg)	CH_4 Emissions (g)	N_2O Emissions (g)
JD-001	*John Doe 1*	*Bus*	*100*	*7*	*0*	*0.2*
Total for all Public Transportation Employee Commuting				0	0.0	0.0

GHG Emissions

Total CO_2 Emissions by Commuting Type

Transport Type	CO_2 (kg)	CH_4 (g)	N_2O (g)
Passenger Car	0	0.0	0.0
Light-Duty Truck	0	0.0	0.0
Motorcycle	0	0.0	0.0
Intercity Rail - Northeast Corridor	0	0.0	0.0
Intercity Rail - Other Routes	0	0.0	0.0
Intercity Rail - National Average	0	0.0	0.0
Commuter Rail	0	0.0	0.0
Transit Rail (i.e. Subway, Tram)	0	0.0	0.0
Bus	0	0.0	0.0

Total CO_2 Equivalent Emissions (metric tons) - Commuting	0.0

EPA CENTER FOR CORPORATE CLIMATE LEADERSHIP
U.S. Environmental Protection Agency

Scope 3 Emissions from Waste

Guidance

(A) Enter annual waste data in ORANGE cells. Example entry is shown in first row (*GREEN Italics*).

(B) First, choose the appropriate material then the disposal method from the drop down options. For the average-data method, use one of the mixed material types, such as mixed MSW. If the exact waste material is not available, consider an appropriate proxy. For example, dimensional lumber can be used as a proxy for wood furniture.

(C) Choose an appropriate disposal method. Note that not all disposal methods are available for all materials. If there is a #NA or # Value error in the emissions column, you must pick a new material type or appropriate disposal method.

Table 1. Waste Disposal Weight by Waste Material and Disposal Method (CO_2, CH_4 and N_2O)

Source ID	Source Description	Waste Material	Disposal Method	Weight	Unit	CO_2e Emissions (kg)
Bldg-012	*East Power Plant Finished Goods*	*Copper Wire*	*Landfilled*	*1,000*	*metric ton*	*22,040*
Residential Buildings	Residential Waste	Mixed MSW municipal solid waste	Landfilled	6,303	short ton	*3,655,740*
Residential Buildings	Residential Recycling	Mixed Recyclables	Recycled	2,257	short ton	*203,130*
Residential Buildings	Residential Compost	Mixed Organics	Composted	846	short ton	*109,980*
Commercial Buildings	Commercial Waste	Mixed MSW municipal solid waste	Landfilled	1,313	short ton	*761,540*
Commercial Buildings	Commercial Recycling	Mixed Recyclables	Recycled	470	short ton	*42,300*
Commercial Buildings	Commercial Compost	Mixed Organics	Composted	176	short ton	*22,880*

GHG Emissions

Total Emissions by Disposal Method

Waste Material	CO_2e (kg)
Recycled	245430
Landfilled	4417280
Combusted	0
Composted	132860
Anaerobically Digested (Dry Digestate with Curing)	0
Anaerobically Digested (Wet Digestate with Curing)	0

Total CO_2 Equivalent Emissions (metric tons) - Waste	**4,795.6**

Appendix D

Early Agency Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793

In Reply Refer To: 04/05/2024 13:38:47 UTC
Project Code: 2024-0073307
Project Name: Rochester Technical Campus

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species
The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance
Please refer to refer to our Section 7 website for guidance and technical assistance, including step-by-step instructions for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A demonstration video showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of “no effect” or “may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species’ biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a “Not Likely to Adversely Affect” (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a “May Affect” determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for “May Affect” determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats
Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

This species hibernates in caves or mines only during the winter. In Minnesota and Wisconsin, the hibernation season is considered to be November 1 to March 31. During the active season (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No**

Effect determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the range-wide northern long-eared bat D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/ Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys helps to determine if prohibited take might occur and, if not, will generate an automated verification letter.

Please note: On November 30, 2022, the Service published a proposal final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. On January 26, 2023, the Service published a 60-day extension for the final reclassification rule in the Federal Register, moving the effective listing date from January 30, 2023, to March 31, 2023. This extension will provide stakeholders and the public time to preview interim guidance and consultation tools before the rule becomes effective. When available, the tools will be available on the Service's northern long-eared bat website (https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis). Once the final rule goes into effect on March 31, 2023, the 4(d) D-key will no longer be available (4(d) rules are not available for federally endangered species) and will be replaced with a new Range-wide NLEB D-key (range-wide d-key). For projects not completed by March 31, 2023, that were previously reviewed under the 4(d) d-key, there may be a need for reinitiation of consultation. For these ongoing projects previously reviewed under the 4(d) d-key that may result in incidental take of the northern long-eared bat, we recommend you review your project using the new range-wide d-key once available. If your project does not comply with the range-wide d-key, it may be eligible for use of the Interim (formal) Consultation framework (framework). The framework is intended to facilitate the transition from the 4(d) rule to typical Section 7 consultation procedures for federally endangered species and will be available only until spring 2024. Again, when available, these tools (new range-wide d-key and framework) will be available on the Service's northern long-eared bat website.

Whooping Crane

Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States."

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the

mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination
While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.

Minnesota
Minnesota Department of Natural Resources - Endangered Resources Review Homepage
Email: Review.NHIS@state.mn.us

Wisconsin
Wisconsin Department of Natural Resources - Endangered Resources Review Homepage
Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

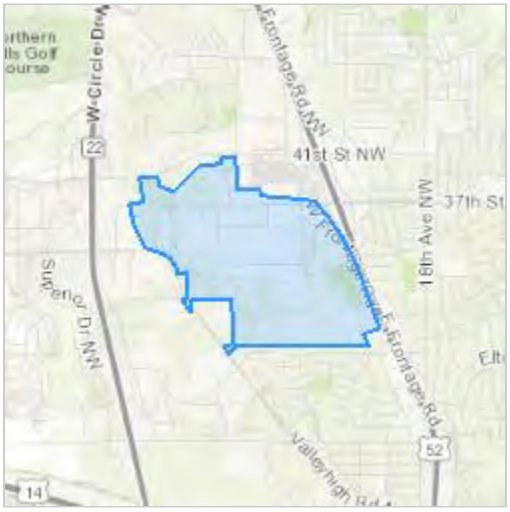
This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
(952) 858-0793

PROJECT SUMMARY

Project Code: 2024-0073307
Project Name: Rochester Technical Campus
Project Type: Mixed-Use Construction
Project Description: Early coordination for a redevelopment of the Rochester Technical Campus. Tear down and rebuild residential, commercial, and industrial buildings.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@44.0576317,-92.50641524737973,14z



Counties: Olmsted County, Minnesota

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Whooping Crane *Grus americana* Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/758	Experimental Population, Non-Essential

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Rusty Patched Bumble Bee *Bombus affinis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9383 General project design guidelines: https://ipac.ecosphere.fws.gov/project/I6TKYPFV7BCM7CZE5WG4XU5C2I/documents/generated/5967.pdf	Endangered

FLOWERING PLANTS

NAME	STATUS
Prairie Bush-clover *Lespedeza leptostachya* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

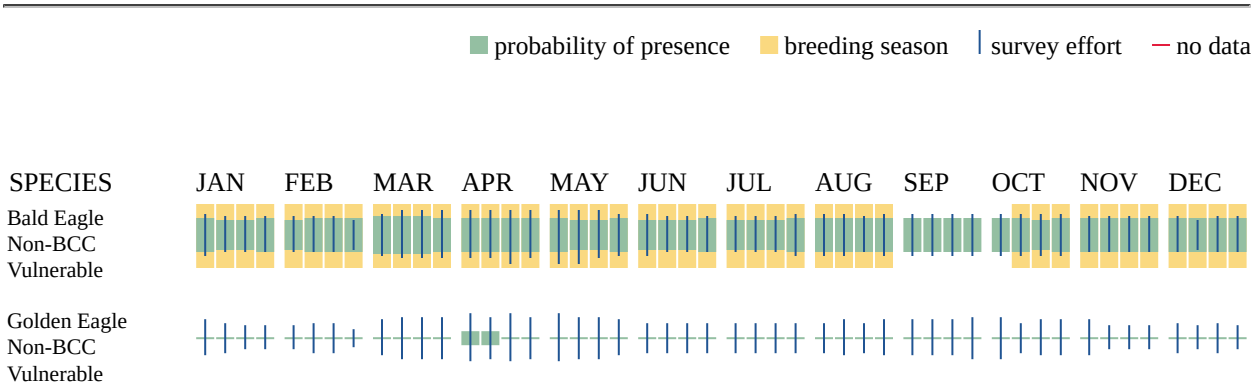
Probability of Presence (▪)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (▪)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25

NAME	BREEDING SEASON
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9482	Breeds elsewhere
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Ruddy Turnstone *Arenaria interpres morinella* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere

NAME	BREEDING SEASON
Upland Sandpiper *Bartramia longicauda* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

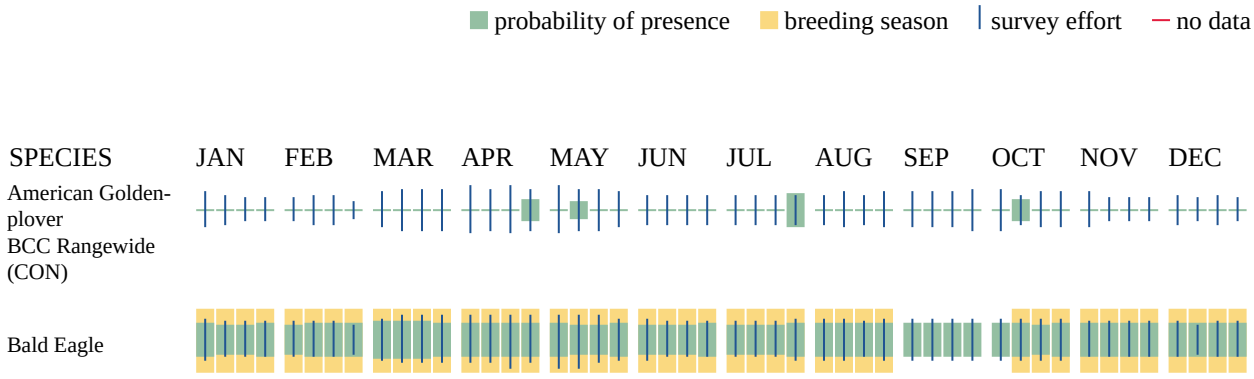
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Non-BCC
Vulnerable

Black-billed
Cuckoo
BCC Rangewide
(CON)

Bobolink
BCC Rangewide
(CON)

Chimney Swift
BCC Rangewide
(CON)

Eastern Whip-poor-
will
BCC Rangewide
(CON)

Golden Eagle
Non-BCC
Vulnerable

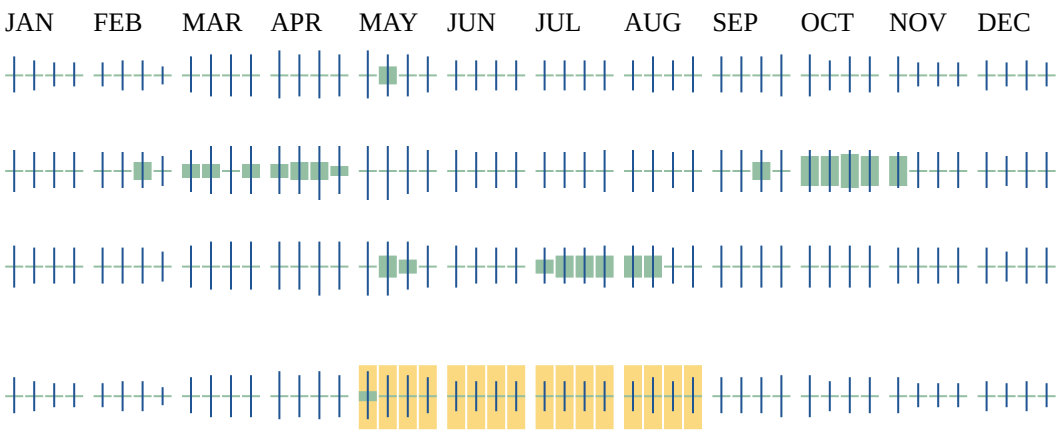
Hudsonian Godwit
BCC Rangewide
(CON)

Lesser Yellowlegs
BCC Rangewide
(CON)

Pectoral Sandpiper
BCC Rangewide
(CON)

Prothonotary
Warbler
BCC Rangewide
(CON)

Red-headed
Woodpecker
BCC Rangewide
(CON)



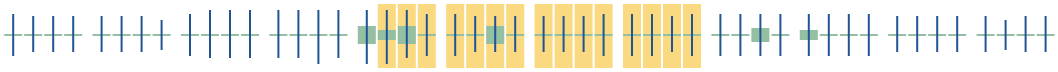
Ruddy Turnstone
BCC - BCR

Rusty Blackbird
BCC - BCR

Short-billed
Dowitcher
BCC Rangewide
(CON)

Upland Sandpiper
BCC - BCR

Wood Thrush
BCC Rangewide
(CON)



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBHh
- PUBFx

FRESHWATER EMERGENT WETLAND

- PEM1Cx
- PEM1B
- PEM1C
- PEM1A
- PEM1Af

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1A
- PFO1B
- PFO1A

RIVERINE

- R4SBC

IPAC USER CONTACT INFORMATION

Agency: Short Elliot Hendrickson Inc
Name: Luke Menden
Address: 3535 Vadnais Center Drive
City: Vadnais Heights
State: MN
Zip: 55110
Email lmenden@sehinc.com
Phone: 6126184453

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

June 7, 2024

Luke Menden
Short Elliott Hendrickson, Inc.

RE: Natural Heritage Review of the proposed **Rochester Technical Campus,**
T107N R14W Sections 20, 21, 22, and 28; Olmsted County

Dear Luke Menden,

For all correspondence regarding the Natural Heritage Review of this project please include the project ID **MCE-2024-00350** in the email subject line.

As requested, the Minnesota Natural Heritage Information System has been reviewed to determine if the proposed project has the potential to impact any rare species or other significant natural features. Based on the project details provided with the request, the following rare features may be impacted by the proposed project:

State-listed Species

- The Natural Heritage Information System (NHIS) tracks bat roost trees and hibernacula plus some acoustic data, but this information is not exhaustive. Even if there are no bat records listed nearby, all of Minnesota's bats, including the federally endangered northern long-eared bat (*Myotis septentrionalis*), can be found throughout Minnesota. During the active season (approximately April-November) bats roost underneath bark, in cavities, or in crevices of both live and dead trees. Tree removal can negatively impact bats by destroying roosting habitat, especially during the pup rearing season when females are forming maternity roosting colonies and the pups cannot yet fly. To minimize these impacts, **the DNR recommends that tree removal be avoided from June 1 through August 15.**

- Please visit the DNR Rare Species Guide for more information on the habitat use of these species and recommended measures to avoid or minimize impacts.

Federally Protected Species

- The area of interest overlaps with a U.S Fish and Wildlife Service (USFWS) Rusty Patched Bumble Bee High Potential Zone. The rusty patched bumble bee *(Bombus affinis)* is federally listed as endangered and is likely to be present in suitable habitat within High Potential Zones. From April through October this species uses underground nests in upland grasslands, shrublands, and forest edges, and forages where nectar and pollen are available. From October through April the species overwinters under tree litter in upland forests and woodlands. The rusty patched bumble bee may be impacted by a variety of land management activities including, but not limited to, prescribed fire, tree-removal, haying, grazing, herbicide use, pesticide use, land-clearing, soil disturbance or compaction, or use of non-native bees. If applicable, **the DNR recommends reseeding disturbed soils with native species of grasses and forbs using** BWSR Seed Mixes **or** MnDOT Seed Mixes**.**

  To ensure compliance with federal law, please conduct a federal regulatory review using the U.S. Fish and Wildlife Service's online Information for Planning and Consultation (IPaC) tool**.** Please note that all projects, regardless of whether there is a federal nexus, are subject to federal take prohibitions. The IPaC review will determine if prohibited take is likely to occur and, if not, will generate an automated letter. The USFWS RPBB guidance provides guidance on avoiding impacts to rusty patched bumble bee and a key for determining if actions are likely to affect the species; the determination key can be found in the appendix.

Environmental Review and Permitting

- Please include a copy of this letter and the MCE-generated Final Project Report in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance. Sufficient information should be provided so the DNR can determine whether a takings permit will be needed for any of the above protected species.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If

additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location and project description provided with the request. **If project details change or the project has not occurred within one year, please resubmit the project for review within one year of initiating project activities.**

The Natural Heritage Review does not constitute project approval by the Department of Natural Resources. Instead, it identifies issues regarding known occurrences of rare features and potential impacts to these rare features. Visit the Natural Heritage Review website for additional information regarding this process, survey guidance, and other related information. For information on the environmental review process or other natural resource concerns, you may contact your DNR Regional Environmental Assessment Ecologist.

Thank you for consulting us on this matter and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Molly Barrett
Natural Heritage Review Specialist
Molly.Barrett@state.mn.us

Cc: Melissa Collins, Regional Environmental Assessment Ecologist, Central (Region 3)

Appendix E

Stormwater Memo

Building a Better World for All of Us®

MEMORANDUM

TO: Evan Vlaeminck – IRG Realty Advisors

FROM: Dean Doneen – Short Elliott Hendrickson, Inc.
Lisa Breu, PE (MN) – Short Elliott Hendrickson, Inc.

DATE: October 10, 2024

RE: Rochester IRGRA Preliminary Stormwater Analysis
SEH No. IRGRA179014 14.00

OVERVIEW

IRG Realty Advisors, an affiliate of the current ownership of the Rochester Technology Campus (former IBM property), is proposing a General Development Plan for the development of the property surrounding the existing buildings on site. This redevelopment will result in an increase in impervious surfaces on the site, and as such will be subject to several stormwater requirements. The stormwater requirements can be met through infiltration or filtration BMPs where possible, and the expansion of existing stormwater ponds in the area. Land use impacts are summarized in Table 1 below.

Table 1 – Project Impacts Summary

Total Area [ac]	493
Existing Impervious [ac]	175
New & Reconstructed Impervious [ac]	387
Net Increase in Impervious [ac]	212

DESIGN CRITERIA

Rate Control

The City of Rochester requires no increase in peak runoff rates for the 2-, 10-, and 100-year 24-hour rainfall events. Rainfall depths were gathered from NOAA Atlas 14 and modelled as a MSE Type 3 storm curve.

Volume Control

The City of Rochester requires on-site retention of 1 inch times the new and reconstructed impervious surfaces. This requirement is more stringent than that of the MPCA-NPDES permit, which requires retention on-site of 1 inch times only the increase in impervious surfaces. As such, wherever WQV is referred to, this is based on the requirement of the City of Rochester. At this stage the total proposed impervious has been used to calculate the total required water quality volume for each drainage area.

Existing water quality volume may be provided by in place BMPs and reconstruction may be able to take advantage of this volume, however as-built information and ability to utilize these BMPs has not yet been confirmed. Additionally, much of the center of the campus may remain in place and not require treatment.

DRAINAGE DESIGN

Existing Conditions

In the existing conditions, the campus has dense impervious in the middle with undeveloped areas around the perimeter and drains in 5 separate directions. There is a series of connected ponds on the northwest edge of the site near 41 St NW. There is an existing pond on the east side of the campus between the existing east parking lot and Marketplace Drive NW. There is an existing basin at Woodside Park between the parking lot and Marketplace Drive. The field on the south side of the site drains to a MnDOT pond in the southeast corner of the parcel. The southwest corner drains offsite to a ditch along 31st Ave NW. Although soils in the area appear to allow infiltration according to the NRCS web soil survey, the presence of existing ponds and wetland areas suggest that groundwater may be high throughout the site. The proposed work will utilize as much existing capacity as possible with expansion to maintain rates and improve water quality at discharge points. While existing ponds are present, existing capacity is unknown, so the model reflects no ponds in existing condition, and a new pond to represent potential expansion or new required pond volume in proposed conditions.

Proposed Conditions

The attached drainage maps show the separate drainage areas on the site and their outfalls. The proposed condition results in a significant increase in impervious area throughout the site. Currently, with limited soils information, ponds are being modeled to determine proposed BMP footprints. Each drainage area was modelled to conform to both rate control and permanent pool requirements separately. The HydroCAD model and results in Table 3 below indicate that rate control can be met through stormwater ponds with designed outlet control structures. In the HydroCAD model prepared for this analysis, outlet control structures were designed with one outlet at the NWL of the pond to only allow 5.66 cfs per ac of WQV storage, a much larger structure at a higher elevation for heavier rainfall events, and intermediate outlets as necessary. All these outlets were further routed to a culvert outlet such that no water exits the pond uncontrolled. Discharge multipliers may be large on some of the outlets, this is to represent that the larger ponds on this project may need more than one outlet control structure to function effectively and for the larger drainage areas a series of BMPs may either need expansion or creation throughout the subwatershed. As design progresses, the existing ponds may be modelled and some of the proposed ponds modeled as expansions, and not new ponds.

The approximate footprint of each pond's normal water level or expansion is shown below in Table 2. Pond footprint was estimated assuming a 5' deep permanent pool of 1800 cf/acre with side slope up. As such, the estimate is the required permanent pool divided by 5. The actual footprint of the pond will be larger, as each pond requires a volume of storage above the normal water level to detain and treat runoff. These larger footprints area also reported later, in Table 4. Water quality has only been modeled as 18 inches in depth. Should these BMPs turn to biofiltration or infiltration BMPs this footprint will be required. If ponds are the final BMP utilized, a deeper live storage volume and therefore smaller pond footprint may be achieved. The pond footprint is based on this water quality volume and also rate control requirements. The exact locations of these ponds are not yet determined, and although it is assumed they will be regional facilities, smaller BMPs maybe scattered throughout portions of the site. Final sizes and locations will be guided by the size, location, and nature of the facilities within the development.

Table 2 – Stormwater Permanent Pool Footprints (Based on Dead Storage Requirements)

Pond	Permanent Pool Footprint [ac]
DA1	1.7
DA2	1.1
DA3	0.3
DA4	0.2
DA5	0.8

Table 3 – Peak Outfall Rates [cfs]

	2-yr		10-yr		100-yr	
	Ex	Prop	Ex	Prop	Ex	Prop
DA1	144	73	272	224	618	599
DA2	281	85	478	200	954	568
DA3	17	15	48	33	138	116
DA4	12	10	44	43	142	112
DA5	19	15	75	63	254	206

Table 4 – Stormwater Retention Requirements

Drainage Area	Live Storage WQV Requirement [ac-ft]	Pond Footprint* [ac]
DA1	12.3	8.2
DA2	9.2	6.2
DA3	2.6	2.0
DA4	2.2	1.4
DA5	6.0	6.5
TOTAL	**32.25**	**24.28**

* Pond footprint is based on water quality volume depth of 18” except where rate control requires larger footprint

These results indicate that stormwater volume and rate requirements may be met utilizing ponding. As design progresses, more information on existing ponds may be modelled, providing a better picture of what development may entail. These results indicate the approximate footprint of ponding that is to be required. Water quality removals were also not modelled in this analysis. If Total Suspended Solids or Total Phosphorus reduction requirements become applicable, this analysis may also be performed later in design.

DID

Attachments:
Existing Drainage
Proposed Drainage
HydroCAD Report

c: Lisa Breu, Finley Davis, Garek Holley

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Appendix F

Traffic Impact Study

Traffic Impact Study

DRAFT Rochester Technology Campus

Rochester, MN

SEH No. IRGRA 178983 | May 7, 2025

SEH

Building a Better World for All of Us®

Engineers | Architects | Planners | Scientists

Building a Better World for All of Us®

May 7, 2025

RE: Rochester Technology Campus
Traffic Impact Study
Rochester, MN
SEH No. IRGRA 178983 4.00

Mr. Evan Vlaeminck
Vice President, Asset Development Manager
IRG Realty Advisors, LLC
4020 Kinross Lakes Parkway
Richfield, OH 44286

Dear Mr. Vlaeminck

The following updated report provides findings of the Traffic Impact Study prepared for the planned Rochester Technology Campus located in Rochester, Minnesota. As requested, the report divides the development into three phases. Mitigations to the traffic network to keep the network in compliance with the City of Rochester's Traffic Service Standards are proposed for each phase. A set of preliminary No Build improvements that are needed whether or not the development is built are detailed. The scope of this traffic study was discussed with the City of Rochester prior to initiation of the work to ensure the study met all project stakeholder expectations and the appropriate level of effort was completed.

Respectfully submitted,

Chad Jorgenson, PE, (Lic. IA, MN, SD) PTOE

Traffic Engineer

Traffic Impact Study

Rochester Technology Campus
Rochester, MN

SEH No. IRGRA 178983

May 7, 2025

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.

Chad Jorgenson, PE, PTOE

Date: May 7, 2025 License No.: 55528

Reviewed By: _____ Date: May 7, 2025

Short Elliott Hendrickson Inc.
3428 Lakeridge Place NW, Suite 100
Rochester, MN 55901

Executive Summary

INTRODUCTION

The Rochester Technology Campus (RTC) development is proposing to redevelop the existing IBM campus located in the City of Rochester, MN. The existing campus is bounded by 41st Street NW on the north, US 52 on the east, the Northgate/Northridge residential developments to the south and Valleyhigh Drive NW on the west. IRG Realty Advisors purchased the property from IBM in 2018.

The Industrial Realty Group (IRG) has engaged SEH to assist with the development of the surrounding property. The proposed development activity consists of commercial, retail, and hospitality to the east, largely residential to the south and north, and industrial to the west. The development is currently planned to develop in three phases.

As part of the City of Rochester Public Works' *Engineering Standards For Public Works in Conjunction with the Development of Subdivisions, Commercial & Industrial Property*, eight Traffic Service Standards are provided to evaluate findings of traffic impact studies. The results of this Traffic Impact Study include evaluating each of these Traffic Service Standards as they pertain to the proposed development.

This report includes documenting the existing traffic and roadway conditions, trip generation, trip distribution, traffic analyses, and provides recommendations for roadway improvements required at each phase of the development to provide acceptable levels of operation in compliance with the city's Traffic Service Standards. Additionally, a set of No Build improvements are detailed that would be required to keep the existing roadway network in compliance with the Traffic Service Standards whether or not the proposed development is built.

TRIP GENERATION

The total number of trips for the proposed development was estimated for the AM and PM peak hours as well as the total number of daily trips. **Table 9,** on page 32, shows that the proposed development will generate an estimated 41,135 trips per day if the site is fully built out. Based on the NCHRP Report 684's methodology, reasonable internally linked trip reduction percentages of 6.7% and 22.3% in the AM and PM peak hours, respectively, were applied to the trip generation values. Pass-by and diverted trip percentages were found for the retail parcels of the development; these trips are modeled but are not external trips entering the traffic network. After these reductions were applied, the total external driveway trips expected to enter and exit the site are 1,122 AM peak hour external driveway trips and 1,614 PM peak hour driveway trips. These external driveway trips as well as the retail pass-by and diverted trips were then distributed among the study intersections for analysis.

CAPACITY ANALYSIS

The 2045 Mitigated Build scenario represents a Horizon Year analysis. Under this scenario, the development is anticipated to be fully built out, and 37th Street is connected to Valleyhigh Drive. This scenario includes a number of intersection improvements that were found to be required to keep the traffic network operations within the traffic service standards.

The following **Tables E1 and E2** provide a summary of the 2045 Mitigated Build scenarios Level of Service (LOS) and queueing performance results.

Executive Summary (continued)

Table E1 – 2045 Mitigated Build Traffic Operations – Delay and LOS

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
W Circle Dr at 41st St	EB	EBT	38.6 / D	26.6 / C	EBL	51.3 / D	31.5 / C
	WB	WBL	33.3 / C		WBL	**58.5 / E**	
	NB	NBL	**64.9 / E**		NBL	47.2 / D	
	SB	SBL	**62.1 / E**		SBT	38.2 / D	
41st St at NW Multi-Family Access	EB	EBT	3.1 / A	2.4 / A	EBT	3.3 / A	2.3 / A
	WB	WBL	5.0 / A		WBL	4.9 / A	
	NB	NBL	9.0 / A		NBL	12.7 / B	
41st St at 31st Ave/RTC West	EB	EBL	11.2 / B	9.0 / A	EBL	15.0 / B	14.5 / B
	WB	WBL	12.7 / B		WBT	16.5 / B	
	NB	NBT	19.5 / B		NBT	16.2 / B	
	SB	SBT	16.5 / B		SBT	23.9 / C	
41st St at W Frontage Rd/Marketplace Dr	EB	EBL	14.8 / B	15.3 / B	EBT	42.0 / D	27.9 / C
	WB	WBL	11.7 / B		WBL	25.2 / C	
	NB	NBL	40.8 / D		NBT	48.1 / D	
	SB	SBT	39.3 / D		SBL	42.9 / D	
41st St at SB US 52 Ramp	EB	EBT	10.4 / B	14.6 / B	EBT	34.3 / C	22.4 / C
	WB	WBL	16.8 / B		WBL	17.7 / B	
	SB	SBL	31.3 / C		SBL	46.7 / D	
41st St at NB US 52 Ramp/E Frontage Rd	EB	EBL	11.1 / B	12.9 / B	EBL	22.1 / C	25.1 / C
	WB	WBT	9.2 / A		WBT	32.8 / C	
	NB	NBL	**49.8 / D**		NBL	**59.1 / E**	
41st St at E Frontage Rd/Maplewood Sq Access	EB	EBL	5.7 / A	4.8 / A	EBL	10.7 / B	13.6 / B
	WB	WBL	4.2 / A		WBL	13.9 / B	
	NB	NBL	46.5 / D		NBT	50.9 / D	
	SB	SBT	52.8 / D		SBT	53.8 / D	
Marketplace Dr at SE Target Access	EB	EBL	6.5 / A	0.7 / A	EBL	**42.2 / E**	3.5 / A
	NB	NBL	2.6 / A		NBL	5.5 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	
Marketplace Dr at Slip Ramp from 37th St	EB	EBR	3.0 / A	1.7 / A	EBR	4.5 / A	4.9 / A
	WB	WBL	5.7 / A		WBR	12.4 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBT	0.2 / A		SBT	0.6 / A	

Executive Summary (continued)

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
W. Circle Dr at Valleyhigh Rd	EB	EBL	**69.3 / E**	34.9 / C	EBL	**69.8 / E**	32.3 / C
	WB	WBL	**65.8 / E**		WBL	**57.7 / E**	
	NB	NBL	**60.4 / E**		NBL	52.3 / D	
	SB	SBL	**69.0 / E**		SBL	**67.6 / E**	
Valleyhigh Drive at 37th Street	EB	EBR	7.6 / A	6.8 / A	EBR	7.3 / A	7.8 / A
	NB	NBL	6.8 / A		NBL	11.1 / B	
	SB	SBT	7.8 / A		SBT	13.8 / B	
37th St at RTC West	EB	EBL	4.5 / A	3.7 / A	EBL	4.7 / A	3.3 / A
	WB	WBL	4.5 / A		WBL	4.0 / A	
	NB	NBT	14.2 / B		NBT	11.0 / B	
	SB	SBL	12.2 / B		SBL	10.0 / B	
37th St at RTC East	EB	EBT	24.6 / C	14.1 / B	EBT	34.2 / C	15.6 / B
	WB	WBL	23.2 / C		WBL	14.4 / B	
	NB	NBL	30.7 / C		NBL	42.7 / D	
37th St at SB US 52 Ramp	EB	EBT	7.5 / A	14.8 / B	EBT	13.8 / B	14.3 / B
	WB	WBL	46.1 / D		WBL	24.1 / C	
	SB	SBL	46.1 / D		SBL	**77.7 / E**	
37th St at NB US 52 Ramp	EB	EBL	33.7 / C	20.7 / C	EBL	36.8 / D	28.8 / C
	WB	WBT	18.5 / B		WBT	30.1 / C	
	NB	NBL	35.2 / D		NBL	53.0 / D	
37th St at 21st Ave/Maplewood Sq Access	EB	EBL	9.4 / A	5.7 / A	EBL	21.3 / C	16.8 / B
	WB	WBL	7.4 / A		WBL	17.4 / B	
	NB	NBL	47.6 / D		NBL	**60.6 / E**	
	SB	SBL	46.2 / D		SBL	46.0 / D	
Watson Ave at RTC South	EB	EBT	5.9 / A	3.5 / A	EBT	6.1 / A	5.2 / A
	WB	WBL	6.5 / A		WBT	7.8 / A	
	NB	NBL	4.4 / A		NBL	4.2 / A	
RTC East at RTC South	EB	EBT	4.4 / A	5.7 / A	EBT	7.9 / A	6.8 / A
	WB	WBT	4.2 / A		WBT	6.7 / A	
	NB	NBT	4.5 / A		NBT	6.1 / A	
	SB	SBT	6.7 / A		SBT	6.0 / A	

Executive Summary (continued)

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Marketplace Dr at E RTC Access[1]	EB	EBL	6.1 / A	1.6 / A	EBL	18.8 / C	5.0 / A
	NB	NBL	2.3 / A		NBL	5.4 / A	
	SB	SBT	0.4 / A		SBT	1.2 / A	
Watson Ave at Internal Roadway	WB	WBL	7.7 / A	2.0 / A	WBL	8.7 / A	2.2 / A
	NB	NBT	1.0 / A		NBT	1.2 / A	
	SB	SBL	3.6 / A		SBL	3.3 / A	
Internal Roadway EB/WB at Internal Roadway NW/SE	EB	EBL	2.2 / A	2.3 / A	EBL	2.3 / A	1.6 / A
	WB	WBL	1.9 / A		WBL	2.6 / A	
	NB	NBL	5.7 / A		NBL	6.5 / A	
	SB	SBT	6.3 / A		SBT	6.8 / A	
Valleyhigh Dr at Watson Ave NW	WB	WBL	20.3 / C	9.0 / A	WBL	18.2 / B	10.1 / B
	NB	NBT	12.2 / B		NBT	14.1 / B	
	SB	SBL	11.5 / B		SBL	12.4 / B	
Marketplace Dr at SE Multi-Family Access	EB	EBL	5.9 / A	1.8 / A	EBL	22.3 / C	6.0 / A
	NB	NBL	1.7 / A		NBL	4.6 / A	
	SB	SBT	1.1 / A		SBT	2.4 / A	
19th St at W Frontage Rd	EB	EBL	17.6 / B	15.3 / B	EBL	26.7 / C	24.4 / C
	WB	WBL	14.4 / B		WBL	21.8 / C	
	NB	NBT	54.6 / D		NBL	47.3 / D	
	SB	SBL	50.0 / D		SBL	48.5 / D	
19th St at US 52 Interchange	EB	EBL	45.6 / D	31.0 / C	EBL	42.0 / D	33.1 / C
	WB	WBL	40.1 / D		WBL	43.4 / D	
	NB	NBL	31.5 / C		NBL	41.1 / D	
	SB	SBL	35.6 / D		SBL	32.5 / C	

Executive Summary (continued)

Table E2 - 2045 Mitigated Build Operations - Queue Results

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
W Circle Dr at 41st St	EB	EBT	222	944	EBT	288	944
	WB	WBT	128	1236	WBT	264	1236
	NB	NBL	132	330	NBL	197	330
	SB	SBT	223	922	SBT	233	922
41st St at NW Multi-Family Access	EB	EBT	-	1236	EBT	-	1236
	WB	WBT	20	721	WBT	24	721
	NB	NBT	42	501	NBT	35	501
41st St at 31st Ave/RTC West	EB	EBT	90	1212	EBT	173	1212
	WB	WBT	88	1336	WBT	181	1336
	NB	NBT	67	597	NBT	105	597
	SB	SBT	85	906	SBT	123	906
41st St at W Frontage Rd/Marketplace Dr	EB	EBT	106	1336	**EBR[1]**	**166**	**95**
	WB	WBT	81	420	WBL	180	420
	NB	NBT	104	272	NBT	190	272
	SB	SBL	100	270	**SBT**	**206**	**140**
41st St at SB US 52 Ramp	EB	EBT	114	450	EBT	432	450
	WB	WBL	166	220	WBL	215	220
	SB	SBT	211	951	SBT	160	951
41st St at NB US 52 Ramp/E Frontage Rd	EB	EBL	83	250	EBT	309	576
	WB	WBT	168	345	**WBT**	**351**	**345**
	NB	NBT	107	625	NBR	224	315
41st St at E Frontage Rd/Maplewood Sq Access	EB	EBL	62	320	EBL	144	320
	WB	WBT	101	457	WBT	219	457
	NB	NBT	48	830	NBL	144	225
	SB	SBL	51	175	SBR	130	180
Marketplace Dr at SE Target Access	EB	EBR	31	60	**EBR[2]**	**63**	**60**
	NB	NBL	33	200	NBL	90	200
	SB	SBT	-	510	SBT	20	510
Marketplace Dr at Slip Ramp from 37th St	EB	EBR	23	110	EBR	29	110
	WB	WBR	52	390	**WBL[3]**	**65**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
W. Circle Dr at Valleyhigh Rd	EB	EBT	332	1110	EBT	208	1110
	WB	WBT	198	1321	WBT	270	1321
	NB	NBL	243	350	NBL	328	350
	SB	SBT	177	670	SBT	200	670

Executive Summary (continued)

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Valleyhigh Drive at 37th Street	EB	EBR	65	525	EBR	60	525
	NB	NBT	45	173	NBT	115	173
	SB	SBT	40	1030	SBT	80	1030
37th St at RTC West	EB	EBL	30	65	EBL	39	65
	WB	WBL	37	80	WBL	20	80
	NB	NBT	39	778	NBT	54	778
	SB	SBL	120	130	SBL	76	130
37th St at RTC East	EB	EBT	185	800	EBT	236	800
	WB	WBL	250	340	WBL	136	340
	NB	NBR	28	580	NBR	274	580
37th St at SB US 52 Ramp	EB	EBT	97	650	EBT	113	650
	WB	WBT	230	610	WBL	225	265
	SB	SBR	182	635	SBT	195	970
37th St at NB US 52 Ramp	EB	EBL	116	175	EBL	161	175
	WB	WBT	231	405	WBT	399	405
	NB	NBL	229	820	NBL	292	820
37th St at 21st Ave/Maplewood Sq Access	EB	EBT	66	378	EBT	239	378
	WB	WBT	117	960	WBT	256	960
	NB	NBL	89	200	NBL	184	200
	SB	SBT	51	686	SBT	147	686
Watson Ave at RTC South	EB	EBT	37	983	EBT	46	983
	WB	WBT	72	1822	WBT	77	1822
	NB	NBR	65	190	NBR	53	190
RTC East at RTC South	EB	EBT	20	1822	EBT	55	1822
	WB	WBT	20	467	WBT	30	467
	NB	NBT	20	421	NBT	20	421
	SB	SBT	55	209	SBT	40	209
Marketplace Dr at E RTC Access[1]	EB	EBL	38	940	EBL	114	940
	NB	NBL	35	130	NBL	68	130
	SB	SBR	20	170	SBT	20	347
Watson Ave at Internal Roadway	WB	WBT	70	2577	WBT	74	2577
	NB	NBT	-	543	NBT	-	543
	SB	SBT	20	400	SBT	20	400
Internal Roadway EB/WB at Internal Roadway NW/SE	EB	EBT	20	558	EBT	20	558
	WB	WBT	20	781	WBT	26	781
	NB	NBT	58	2577	NBT	56	2577
	SB	SBT	44	373	SBT	39	373

Executive Summary (continued)

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Valleyhigh Dr at Watson Ave NW	WB	WBL	76	150	WBL	107	150
	NB	NBT	170	977	NBT	167	977
	SB	SBL	111	260	SBT	104	1817
Marketplace Dr at SE Multi-Family Access	EB	EBT	60	400	EBT	162	321
	NB	NBL	32	130	NBL	73	130
	SB	SBR	20	170	SBT	20	1854
19th St at W Frontage Rd	EB	EBT	176	1116	**EBL[4]**	**120**	**100**
	WB	WBT	230	265	**WBT[4]**	**345**	**265**
	NB	NBR	62	445	NBR	144	445
	SB	SBL	196	280	SBL	272	280
19th St at US 52 Interchange	EB	EBT	154	276	EBT	205	276
	WB	WBL	237	555	WBL	231	555
	NB	NBL	261	745	NBL	327	745
	SB	SBL	324	865	SBL	196	865

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] EBT 95th percentile queues also extend past EBR storage
[2] EBL 95th percentile queues extend past available EBR storage
[3] WBR 95th percentile queues extend past storage of WBL turn pocket
[4] Through lane 95th percentile queues extend past available storage in addition to turn lane 95th percentile queues extending past available storage

Executive Summary (continued)

The following is a comparison of the results to the City of Rochester's Traffic Service Standard criteria.

Intersection Volume to Capacity (V/C)

No intersection turning movement in any proposed Mitigated Build scenario exceed the 0.8 or 0.9 V/C ratio thresholds.

- 41st Street, 37th Street, W. Circle Drive, Valleyhigh Drive, and 19th Street were considered to be in the Freeway/Expressway category of the Capacity Traffic Service Standard, and all turning movements at intersections with these roadways were kept to 0.8 or lower.
- Turning movements of intersections of local roadways such as the development internal roadways and Marketplace Drive were kept to V/C ratios of 0.9 or lower.

Level of Service (LOS)

Under Mitigated Build conditions in Phase 1, Phase 2, Phase 3, and the Horizon Year scenarios, all study intersections operate at LOS C or better. Each individual turning movement operates at LOS E or better. The proposed Mitigated Build scenarios comply with the Level of Service Traffic Service Standard.

Number of Access Points

The development minimizes access points to ensure adequate capacity and safety. There will be an overall reduction in access points along 37th Street. A median will be constructed on 37th Street between Valleyhigh Drive and the RTC East access. Between these two intersections, four access points are expected to be limited to right-in/right-out only (RI/RO) intersections, and two access points to the existing RTC parking lots will remain full access. Aside from the 37th Street access points, two additional access points for the development will be provided, including:

- Marketplace Drive will have two access points (one existing and one new, spacing is 1,880 feet).
- 41st Street will have one new access point in the northwest area of the development.

Residential Street Impact

There are no existing residential streets within the project area. The development will not increase traffic volume on existing residential streets.

Traffic Flow and Progression

Proposed signal timing and traffic signal cycle lengths will not interfere with the goal of achieving adequate traffic progression on major public streets in the vicinity of the development.

Vehicle Storage

Storage bays are proposed to be extended to meet 95th percentile queues in the Mitigated Build scenarios when there was adequate space available to extend the lanes. However, there were some locations where queue inadequacies remain in the 2045 Mitigated Build scenario, including:

- 41st Street at W Frontage Road/Marketplace Drive
  - Eastbound right, southbound left, southbound through/right
    - Queueing issues stay approximately the same as under existing scenario, no room for turn lane extensions
- 41st Street at NB US 52 Ramp/E. Frontage Road
  - Westbound through
    - Through queues extend just past available space between intersection in 2045 scenario, low concern
- Marketplace Drive at SE Target Access
  - Eastbound right
    - Pocket turn lane queuing issues are of low concern
- Marketplace Drive at Slip Ramp from 37th St
  - Westbound left
    - Pocket turn lane queuing issues are of low concern
- 19th Street at W. Frontage Road
  - Eastbound left, westbound left, westbound through
    - Limited space due to closely spaced intersections makes turn lane extensions difficult
    - Queues clear and cause minimal intersection inefficiencies, low concern

The overall impact and inefficiencies caused by these queueing concerns is minimal. There are no run-away queues that build over multiple cycles. The limited space between some intersections make some of these turn lane extensions impractical to implement.

Internal Circulation

There are no on-site vehicle circulation or parking patterns that will interfere with public streets for this development.

Safety

The crash analysis indicated that there is not currently a sustained crash problem at any study intersections.

RECOMMENDATIONS

General Roadway Improvements

- 37th Street will be extended to connect with Valleyhigh Drive NW on the west side of the development. This project will improve east-west roadway connections in the study area; the proposed connection has an impact on vehicle route choices.

- Valleyhigh Drive at 37th Street will be constructed as a three-legged roundabout intersection
- Between Valleyhigh Drive and the RTC West access, the 37th Street connection is proposed as a two-lane roadway with a center median.

Intersection Improvement Recommendations

Under Mitigated No Build 2027 conditions the following improvements were found to be required to stay in compliance with Rochester's Traffic Service Standards. These are improvements that should be implemented whether or not the proposed development is built.

- W. Circle Drive at 41st Street
  - Install a dual westbound left turn lane
- 41st Street at SB US 52 Ramp
  - The westbound left lane should be restriped to have 220 feet of storage.
  - Add a new southbound left lane; the southbound approach lane designation would be a left turn lane, a through lane, and a right turn lane.
  - Convert eastbound right lane to a channelized right turn with a yield sign.
- 41st Street at NB US 52 Ramp
  - The eastbound left lane should be restriped with 250 feet of storage.
- 41st Street at E. Frontage Road/Maplewood Sq Access
  - The Northbound approach lanes should be extended to 225 feet of storage. This would involve closing access to the first two parking rows of the Maplewood Square parking lot on the east side of the northbound approach. A concrete divider would be installed to block the existing parking lot row access points resulting in a loss of approximately 16 parking spaces.
- 37th Street at SB US 52 Ramp
  - Construct a pedestrian bridge on the north side of the 37th Street bridge/interchange to allow for additional roadway width on the bridge to allocate to vehicle traffic.
  - Install a dual westbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The westbound left turn lanes would have approximately 265 feet of storage.
- 37th Street at NB US 52 Ramp
  - Install a dual eastbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The eastbound left turn lanes would have approximately 265 feet of storage.
  - An additional northbound lane is necessary to add to the west side of the northbound approach. The northbound approach's lane designation should be converted from a

dedicated left, shared left/through, dedicated through, and dedicated right turn lane approach to have dual dedicated left lanes, dual dedicated through lanes, and a dedicated right turn lane on the approach.

Under the Mitigated Build scenarios, the following intersection improvements were found to be required to keep the traffic network operating within the traffic service standards with the proposed development.

- 41st Street at 31st Avenue NW/RTC West
  - Extend striping for the southbound left turn lane from 100 feet to 150 feet.
- 41st Street at SB US 52 Ramp
  - An additional through lane should be added to the southbound approach. The southbound approach would be a left turn lane, two through lanes, and a right turn lane.
- W. Circle Drive at Valleyhigh Road
  - Add dual southbound left turn lanes.
  - Add dual westbound left turn lanes.
- 37th Street at RTC West
  - The lane designation of the southbound approach should be changed to have a dedicated left turn lane with a shared though-right lane.
  - The westbound channelized right turn lane would be converted to a regular right turn lane.
- 37th Street at RTC East
  - Convert intersection to traffic signal control.
  - Add dual westbound left turn lanes.
- 37th Street at SB US 52 Ramp
  - The addition of a dual southbound right turn lane. The southbound approach would be dual right turn lanes with a shared through/left lane.
- 37th Street at NB US 52 Ramp
  - The addition of a dual northbound right turn lane. The northbound approach would have dual left turn lanes, dual through lanes, and dual right turn lanes.
- 37th Street at 21st Avenue/Maplewood Sq Access
  - Extend the northbound left turn lane to have 200 feet of storage, this will involve pavement marking changes only.
- Valleyhigh Drive at Watson Avenue
  - Add a dedicated westbound left turn lane with 150 feet of storage.
  - Convert the intersection to traffic signal control.

- 19th Street at W. Frontage Road
  - Reconfigure the southbound approach with an added lane. The existing through-right lane should be converted to a dual left turn lane and a new through-right lane will be added to the intersection with 300 feet of storage.
- 19th Street at US 52 Interchange (SPUI)
  - Add a dual northbound left lane. The existing northbound right lane in the ramp area will be converted to a second northbound left lane and a new northbound right lane will be added with 340 feet of storage.

COST ESTIMATES

The total for all improvements to the network is $32,705,915. This includes both No Build and Build Mitigations. See Appendix E for a detailed cost breakdown for each improvement project.

CONCLUSION

Three phases of the Rochester Technology Campus development are planned. Mitigations to the traffic network to keep the network in compliance with Rochester's Traffic Service Standards are proposed for each of the three phases. Also detailed are a set of preliminary No Build improvements that are needed whether or not the development is built. With these proposed improvements the traffic network performs adequately, and the network would comply with Rochester's Traffic Service Standards for Level of Service and Volume to Capacity standards.

Rochester's 'Vehicle Storage' Standard requires that 95th percentile queues fit within available queue storage. Storage bays were extended to meet 95th percentile queues in the Mitigated Build scenarios when there was adequate space available to extend the lanes. Dual left turn lanes were added when necessary and feasible. Some turn lanes were not able to be mitigated and have 95th percentile queues exceeding available storage. These locations are a mixture of existing problems, short pocket turn lanes, turn lanes that are not extendable, and through lanes that spill back to an adjacent closely spaced intersection. The overall impact and inefficiencies caused by these turning movement queues is minimal. There are no run-away queues that build over multiple cycles.

Improvement layouts and cost estimate breakdowns are provided. With these modifications the network is expected to handle the proposed development traffic adequately and with minimal inefficiencies due to queueing concerns.

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Traffic Impact Study

Rochester Technology Campus Development Study

Prepared for Industrial Realty Group, in cooperation with the City of Rochester.

1 Background and Introduction

In 1957, International Business Machine (IBM) began occupying the company's Rochester campus located in the City of Rochester, MN bounded by 37th Street NW on the north, US 52 on the east, the Northgate/Northridge residential developments to the south and Valleyhigh Drive NW on the west. The Industrial Realty Group (IRG) purchased the property from IBM in 2018. Since then, IRG has leased the building to regional and local businesses for a variety of uses, including a large portion of the site still leased by IBM.

IRG has engaged SEH to assist with the proposed development of the surrounding property. The undeveloped portions of the property are largely prairie, wetland, and wooded lands to the north and west. To the south, the undeveloped land is primarily agricultural. The surrounding land uses are largely commercial to the north, industrial to the west, and residential to the south.

The proposed development activity consists of commercial, retail, and hospitality to the east, largely residential to the south and north, and industrial to the west. The development is planned to occur in three phases.

As part of the City of Rochester Public Works' *Engineering Standards For Public Works in Conjunction with the Development of Subdivisions, Commercial & Industrial Property*, eight Traffic Service Standards are provided to evaluate findings of traffic impact studies. These standards include an evaluation of roadway capacity, level of service, number of access points, residential street impact, traffic flow and progression, vehicle storage, internal circulation, and safety. The results of this Traffic Impact Study include evaluating each of these Traffic Service Standards as they pertain to the proposed development.

This report includes documentation of the existing traffic and roadway conditions, trip generation, trip distribution, traffic analyses, and provides recommendations for roadway improvements to provide acceptable levels of operation in compliance with the City's Traffic Service Standards. Additionally, a set of No Build improvements are detailed that would be required to keep the existing roadway network in compliance with the Traffic Service Standards whether or not the proposed development is built.

1.1 Study Area

The study area is bounded by 41st Street NW on the north, US 52 on the east, the Northgate/Northridge residential developments to the south and Valleyhigh Drive NW on the west. The following street segments are included in the project area:

- 41st St (E. Frontage Rd/Maplewood Sq Access to W. Circle Dr)
- 37th St (21st Ave/Maplewood Sq Access to RTC East)
  - Proposed 37th St Extension[1] (RTC East to proposed Valleyhigh Dr connection)
- 19th St (US 52/63 to W. Frontage Rd)
- E. Frontage Rd (41st St to 37th St)
- W. Frontage Rd/Marketplace Dr (41st St to 19th St)
- RTC East[1] (37th St to E. RTC[1] Access)
- Watson Ave NW (RTC South[1] to Valleyhigh Dr)
- Valleyhigh Dr (W. Circle Dr to Watson Ave NW)
- W. Circle Dr (41st St to Valleyhigh Dr)

This study reviews traffic operations at 25 intersections, of which 20 intersections are existing intersections and 5 intersections are proposed new intersections. The 20 existing study intersections with their corresponding intersection numbers are shown in **Figure 1**

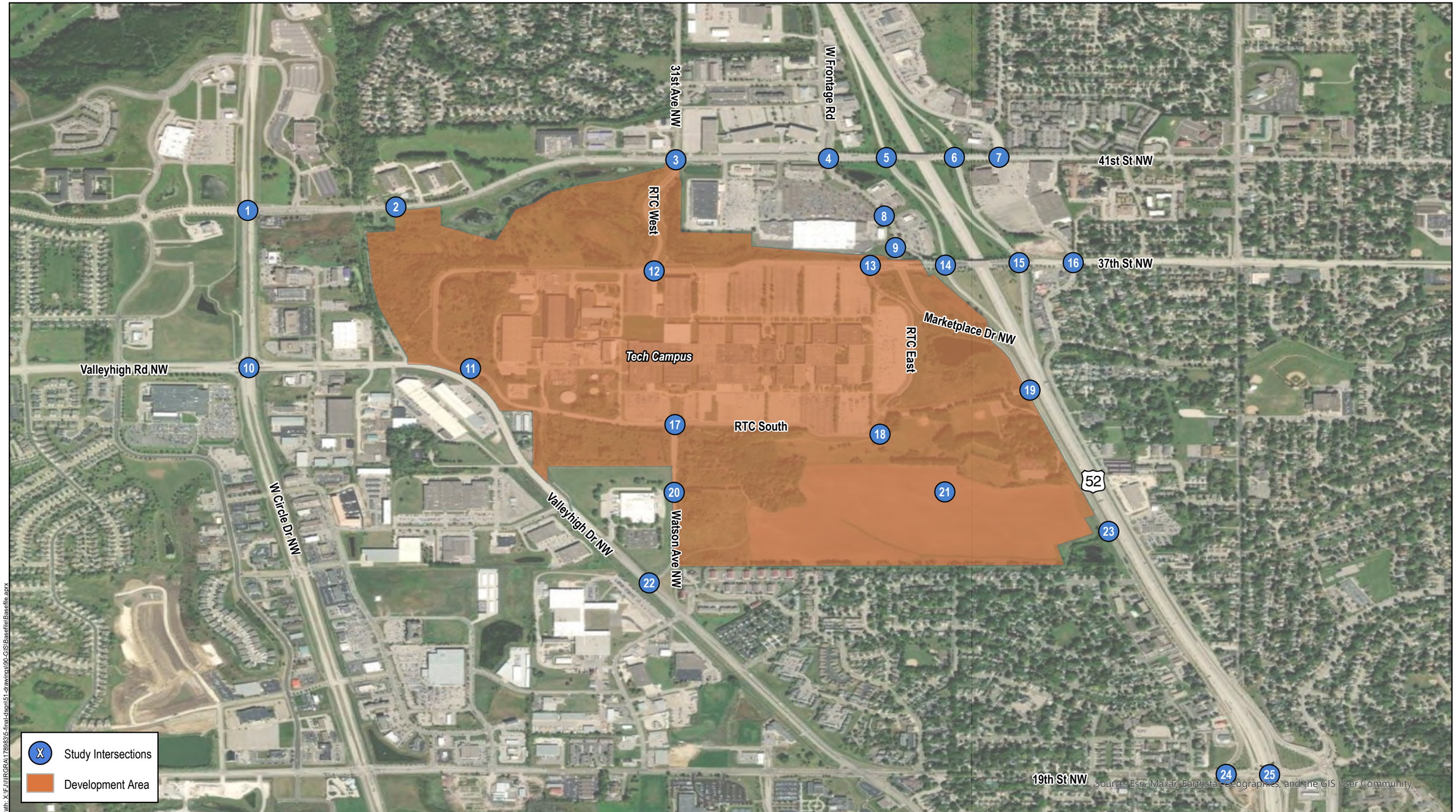
1. W. Circle Dr at 41st St
3. 41st St at 31st Ave/RTC West[1]
4. 41st St at W. Frontage Rd/Marketplace Dr
5. 41st St at SB US 52 Ramp
6. 41st St at NB US 52 Ramp/E. Frontage Rd
7. 41st St at E. Frontage Rd/Maplewood Sq Access
8. Marketplace Dr at SE Target Access
9. Marketplace Dr at Slip Ramp from 37th St
10. W. Circle Dr at Valleyhigh Rd
12. 37th St at RTC West[1]
13. 37th St at RTC East[1]
14. 37th St at SB US 52 Ramp
15. 37th St at NB US 52 Ramp
16. 37th St at 21st Ave/Maplewood Sq Access
17. Watson Ave NW at Internal Roadway
18. RTC East[1] at RTC South[1]
19. Marketplace Dr at E. RTC Access
22. Valleyhigh Dr at Waston Ave NW
24. 19th St at W. Frontage Rd
25. 19th St at US 52 Interchange

The five new proposed intersections that were reviewed are as follows:

2. 41st St at NW Multi-Family Access
11. Valleyhigh Dr at 37th St (Roundabout)
20. Watson Ave at RTC South[1]
21. Internal Roadway EB/WB at Internal Roadway NW/SE
23. Marketplace Dr at SE Multi-Family Access

The site location map is shown in **Figure 1**.

[1] Under Existing Conditions these roadways are named International Business Machine (IBM), for consistency with future build conditions they will be referred to as either Rochester Technology Campus (RTC) or as 37th Street.



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User Name: ljohnson
Projection: Olmsted Co Coord
Source:

Project Location

Rochester Tech Campus
Rochester, MN

Figure
1

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2 Existing Conditions

The study area is comprised of various roadway functional classifications, intersection control types, safety concerns and vehicular volume demand. This section summarizes the existing conditions within the study area.

2.1 Roadway Conditions

The existing functional classifications were obtained from the Minnesota Department of Transportation's (MnDOT) Functional Classification System map, referenced in the Rochester Olmsted Council of Governments (ROCOG) Long Range Transportation Plan 2045. The daily traffic volume data was provided by MnDOT's Traffic Mapping Application, with the most recent data collected in either 2018 or 2023.

Roadway geometrics were obtained based on aerial imagery and field observations. Roadway posted speed limits were obtained from various sources including field observations and online mapping applications.

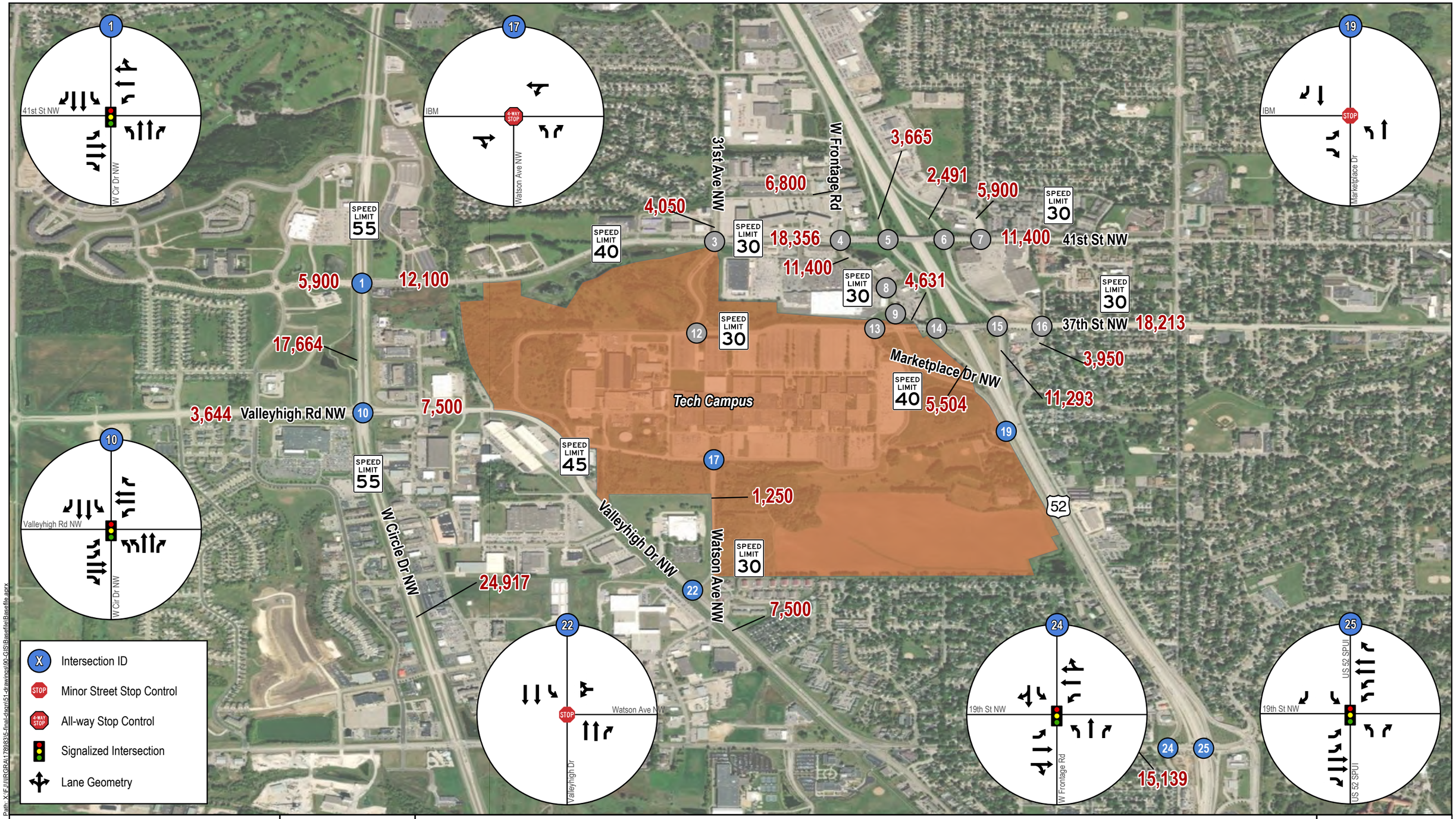
Table 1 summarizes the existing roadway conditions within the study area.

Figures 2a and 2b depict the existing roadway conditions within the study area, including the existing peak hour turning movement volumes, traffic control, and lane geometry at each study intersection.

Table 1 – Existing Roadway Conditions Summary

Roadway (Functional Classification[1])	Daily Traffic Volume[2] (Year)	Lanes	Posted Speed Limit (MPH)
41st St – east of US 52 (Secondary Arterial)	11,400 (2016)	4 lanes, undivided	30
41st St – From 31st Ave to US 52 (Major Arterial)	18,356 (2023)	4 lanes, undivided	30
41st St – West of 31st Ave	12,100 (2018)	3 or 4 lanes, undivided	40
37th St – east of US 52 (Strategic Arterial)	18,213 (2023)	4 lanes, divided	40
37th St – west of US 52 (Local or Private Street)	-	4 lanes, divided	30
RTC West (Private Street)	-	2 lanes, divided/undivided	30
19th St (Major Arterial)	15,139 (2023)	4 lanes, divided	30
E. Frontage Rd (Primary Collector or Local Street)	11,293 (2023)	3 lanes	30
Marketplace Dr – 41st St to 37th St (Local Road)	11,400 (2018)	3 lanes, undivided	30
Marketplace Dr – 37th St to 26th St (Local Road)	-	2 lanes, undivided	40
W Frontage Rd – South of 26th St (Local Road)	-	2 lanes, undivided	35
RTC East (Private Street)	-	2 lanes, undivided	30
Valleyhigh Dr (Major Arterial)	7,500 (2018)	4 lanes, divided	45
W. Circle Dr (Strategic Arterial)	17,764 (2023)	4 lanes, divided	55

Notes:
[1]Source: ROCOG Functional Designation
https://gweb01.co.olmsted.mn.us/WebApps/OlmstedCountyGISMap/
[2]Source: MnDOT Traffic Mapping Application



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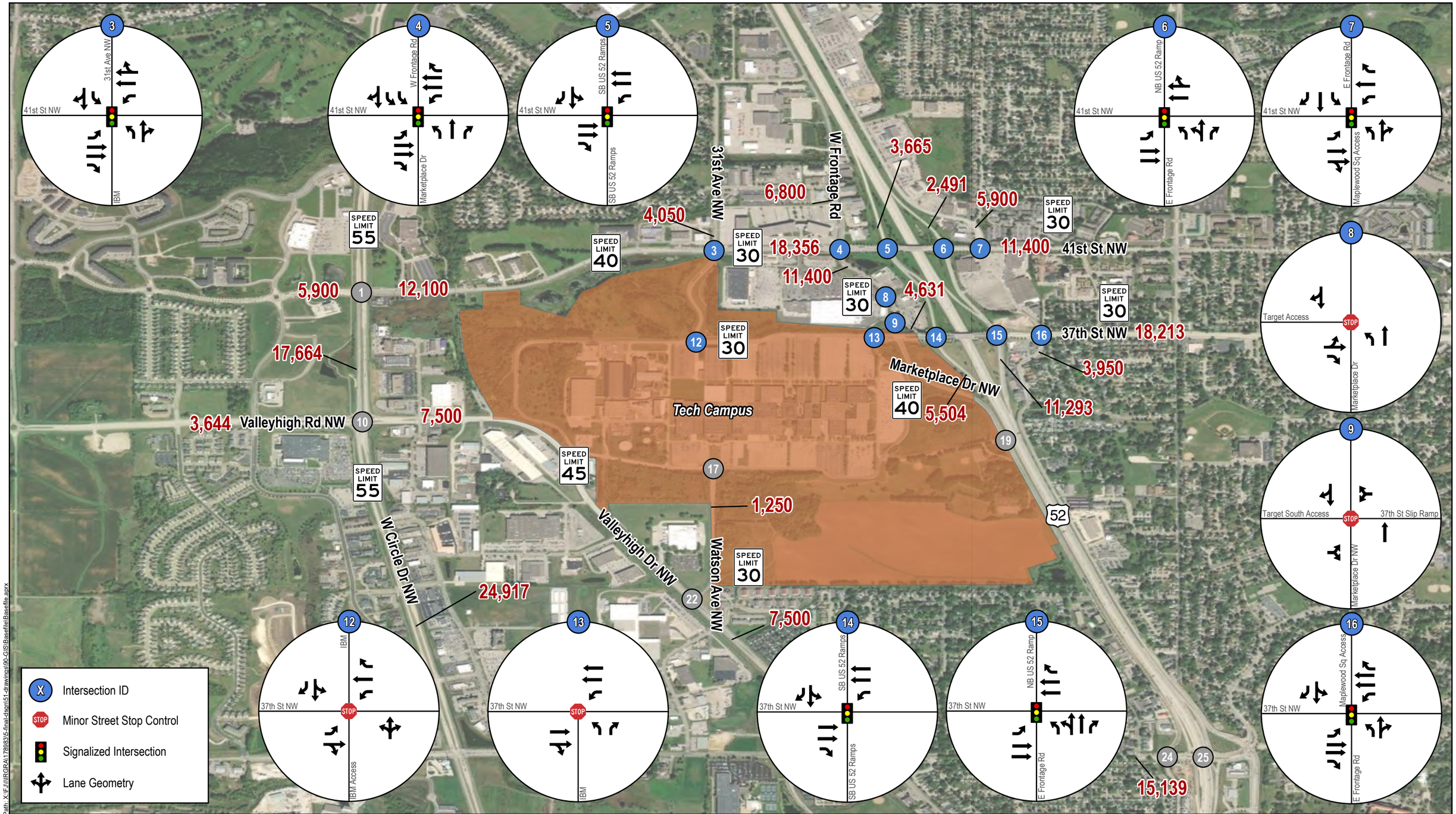
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Existing Roadway Conditions

Rochester Tech Campus
Rochester, MN

Figure 2A

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Existing Lane Geometry

Rochester Tech Campus
Rochester, MN

Figure 2B

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2.2 Turning Movement Counts

Most of the intersection turning movement counts were collected on Tuesday June 25th, 2024, a typical weekday with normal traffic patterns. SEH deployed video cameras to collect turning movement count data at the following 16 study intersections, listed with their corresponding intersection numbers:

1. W. Circle Dr at 41st St
3. 41st St at 31st Ave/RTC West
4. 41st St at W. Frontage Rd/Marketplace Dr
5. 41st St at SB US 52 Ramp
6. 41st St at NB US 52 Ramp/E. Frontage Rd
7. 41st St at E. Frontage Rd/Maplewood Sq Access
8. Marketplace Dr at SE Target Access
9. Marketplace Dr at Slip Ramp from 37th St
10. W. Circle Dr at Valleyhigh Rd
12. 37th St at RTC West
13. 37th St at RTC East
14. 37th St at SB US 52 Ramp
15. 37th St at NB US 52 Ramp
16. 37th St at 21st Ave/Maplewood Sq Access
19. Marketplace Dr at E. RTC Access
22. Valleyhigh Dr at Waston Ave NW

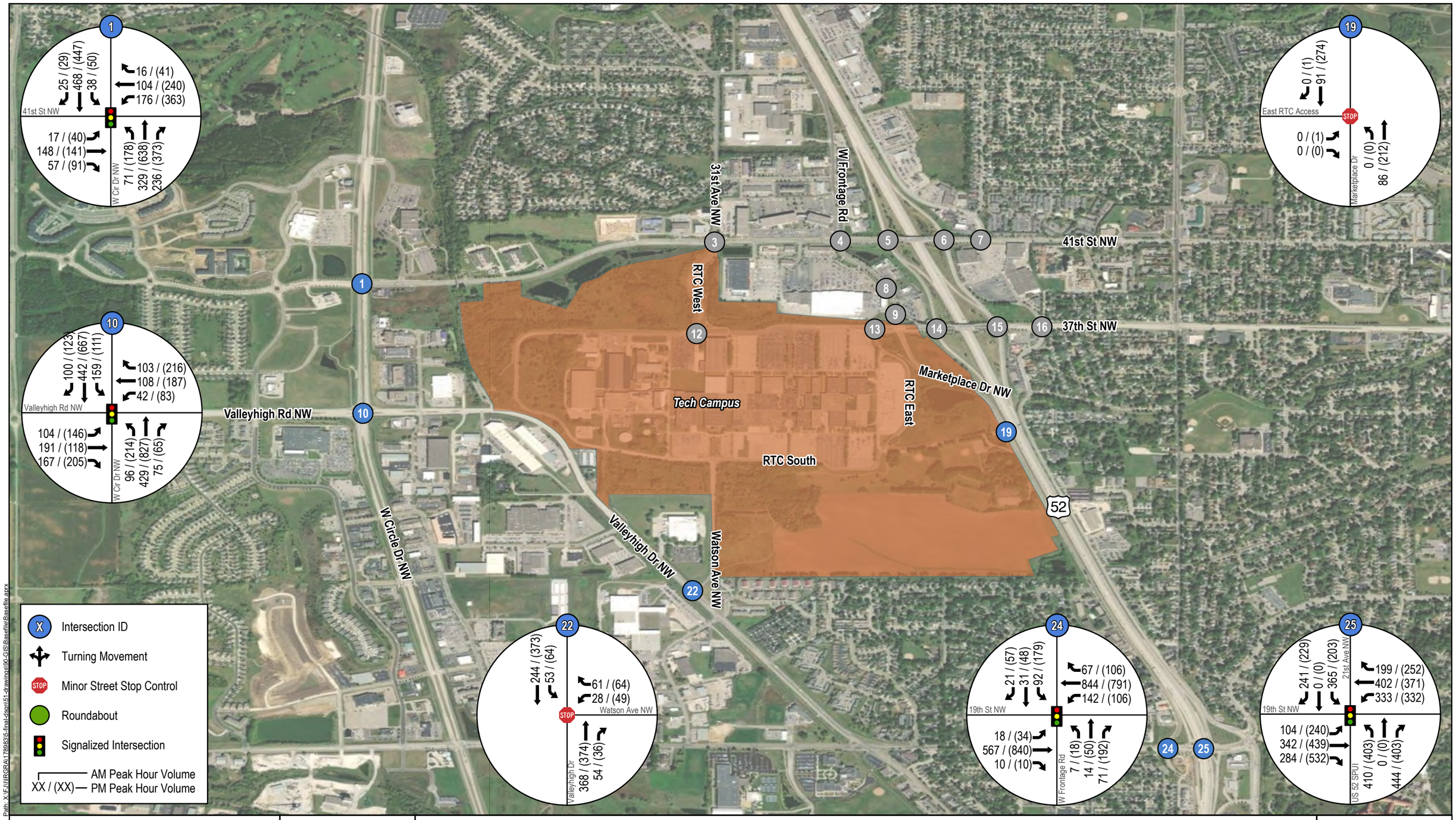
Existing volumes for the 19th Street at W. Frontage Road (Int 24) and 19th Street at US 52 SPUI (Int 25) were recently collected on January 16th, 2024, as part of an Intersection Control Evaluation (ICE) study in the area.

Seven additional intersections are analyzed in this study in which no existing turning movement count data was collected. This is due to the intersections being either a new intersection or an internal intersection within the existing RTC campus. The seven locations where data was not collected are:

2. 41st St at NW Multi-Family Access (New Intersection)
11. Valleyhigh Dr at 37th St (Roundabout) (New Intersection)
17. Watson Ave NW at Internal Roadway (Internal Intersection)
18. RTC East[1] at RTC South (Internal Intersection)
20. Watson Ave at RTC South (New Intersection)
21. Internal Roadway EB/WB at Internal Roadway NW/SE (New Intersection)
23. Marketplace Dr at SE Multi-Family Access (New Intersection)

The data at the study intersections was processed for a total of 13 hours (6AM-7PM). The network peak hour periods were determined to be 7:30-8:30 AM and 4:30-5:30 PM.

The existing turning movement count data is summarized in **Figures 3a and 3b.** Complete vehicle turning movement counts are included in **Appendix A**.



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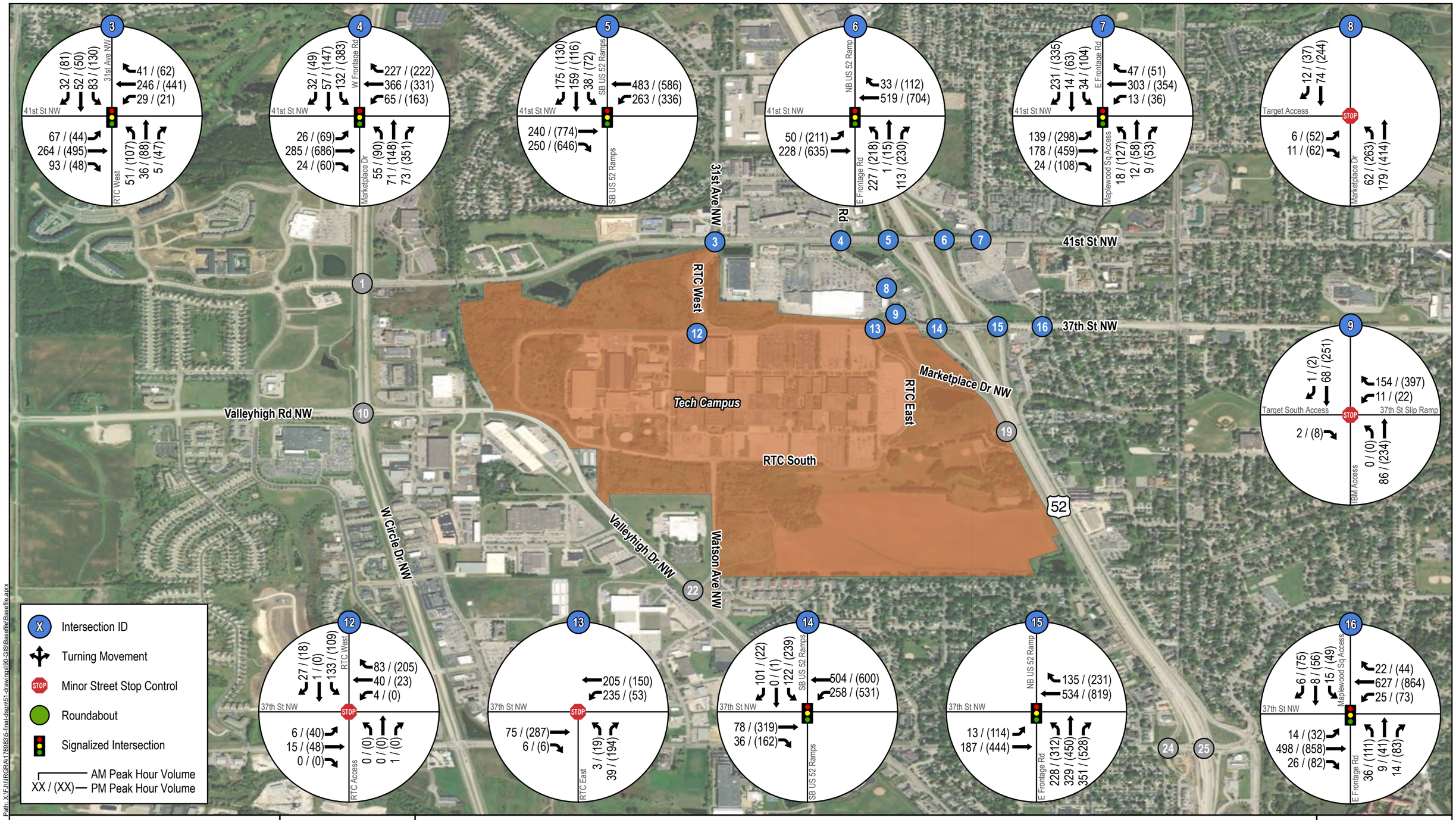
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Source:

2024 Existing Volumes

Rochester Tech Campus
Rochester, MN

Figure 3A

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X Intersection ID

Turning Movement

STOP Minor Street Stop Control

Roundabout

Signalized Intersection

AM Peak Hour Volume

XX / (XX) PM Peak Hour Volume

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2024 Existing Volumes

Rochester Tech Campus
Rochester, MN

Figure 3B

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2.3 Existing Traffic Operations

Traffic operations analysis was conducted to determine the level of service (LOS), delay, and queuing information for the existing AM and PM peak hour conditions.

LOS is a qualitative rating system used to describe the efficiency of traffic operations at an intersection. Six LOS are defined, designated by letters A through F. LOS A represents the best operating conditions (no congestion), and LOS F represents the worst operating conditions (severe congestion).

LOS for intersections is determined by the average control delay per vehicle. The range of control delay for each LOS is different for signalized and unsignalized intersections. The expectation is that a signalized intersection is designed to carry higher traffic volumes and will experience greater delays than an unsignalized intersection. Driver tolerance for delay is greater at a signal than at a stop sign; therefore, the LOS thresholds for each LOS category are lower for unsignalized intersections than for signalized intersections. **Table 2** shows the LOS thresholds for signalized and unsignalized intersections.

Table 2 – Level of Service Thresholds

Level of Service	Average Vehicle Delay (sec/veh)	
	Signalized Intersection	Unsignalized (Stop or Roundabout) Intersection
A	0 to 10	0 to 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

The City of Rochester's traffic service standards regarding Level of Service are as follows:

Traffic Service Standard #2: *"For corridors including mainline, merging areas and ramp junctions, a Level of Service C shall be maintained on any expressway, freeway, or arterial and a Level of Service D on any other designated non-local street on the Comprehensive Plan. At all intersections, a Level of Service C shall be maintained on any arterial or higher order street and a Level of Service D on any other non-residential street. Individual movements within any intersection shall be maintained at or above a Level of Service E. Where the existing Level of Service is below these standards, a traffic impact study shall identify those improvements needed to maintain the existing level of service, and what additional improvements would be needed to raise the level of service to the standards indicated."*

All traffic operations analysis for signalized and stop controlled intersections was performed using the Synchro/SimTraffic (Version 11) software package. The results reported in this analysis are an average of 10 runs in SimTraffic 11. Roundabout operations analysis was performed using Highway Capacity Software (HCS) Version 2024, which utilizes techniques from the Highway Capacity Manual (HCM), 7th Edition.

Table 3 shows the existing traffic operations for the study intersections. Under the existing conditions most study intersections meet the City of Rochester's Traffic Service Standards. However, some intersections do not meet the Vehicle Storage standard as they currently have 95th percentile queues that extend further than the available queue storage in either the Existing AM or PM peak hour. These turn lanes with existing queueing problems include:

- W Circle Dr at 41st St
  - Westbound left
- 41st St at W. Frontage Rd/Marketplace Dr
  - Eastbound right, southbound through, southbound Left
- 41st St at SB US 52 Ramp
  - Westbound left
- 41st St at E. Frontage Rd
  - Northbound left
- 19th St at W. Frontage Rd
  - Westbound left

Full traffic operation analysis result tables and reports for the existing conditions can be found in **Appendix B**.

There are 12 existing traffic signals within the study area:

- W. Circle Dr at 41st St
- 41st St at 31st Ave/RTC West
- 41st St at W. Frontage Rd/Marketplace Dr
- 41st St at SB US 52 Ramp
- 41st St at NB US 52 Ramp/E. Frontage Rd
- 41st St at E. Frontage Rd/Maplewood Sq Access
- W. Circle Dr at Valleyhigh Dr
- 37th St at SB US 52 Ramp
- 37th St at NB US 52 Ramp
- 37th St at 21st Ave/Maplewood Sq Access
- 19th St at W. Frontage Rd
- 19th St at US 52 Interchange (SPUI)

Table 4 provides the longest 95th percentile queue for each approach is reported. This queue could be a left turn, through, or right turn queue. Red highlighting for a 95th% queue signifies that the queue spills out of available queue storage. Orange highlighting signifies that a through queue extends beyond adjacent turn lane storage, potentially blocking access to one or both adjacent turn lanes. Footnotes are utilized for approaches with multiple turning movements that would be highlighted. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 3 – 2024 Existing Traffic Operations Analysis

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
W Circle Dr at 41st St	EB	EBT	53.2 / D	19.2 / B	EBT	54.6 / D	25.0 / C
	WB	WBL	41.6 / D		WBL	49.8 / D	
	NB	NBL	15.2 / B		NBL	24.2 / C	
	SB	SBT	16.4 / B		SBL	34.2 / C	
41st St at 31st Ave/RTC West	EB	EBL	11.4 / B	9.3 / A	EBL	14.9 / B	14.4 / B
	WB	WBL	11.3 / B		WBL	15.1 / B	
	NB	NBT	16.9 / B		NBT	20.2 / C	
	SB	SBT	17.4 / B		SBT	24.0 / C	
41st St at W Frontage Rd/Marketplace Dr	EB	EBL	16.0 / B	15.5 / B	EBT	31.7 / C	24.7 / C
	WB	WBL	9.3 / A		WBL	20.8 / C	
	NB	NBL	39.6 / D		NBT	47.7 / D	
	SB	SBT	44.1 / D		SBL	40.0 / D	
41st St at SB US 52 Ramp	EB	EBT	7.4 / A	12.3 / B	EBR	16.8 / B	22.2 / C
	WB	WBL	15.9 / B		WBL	**66.2 / E**	
	SB	SBL	43.3 / D		SBT	51.0 / D	
41st St at NB US 52 Ramp/E Frontage Rd	EB	EBL	9.7 / A	13.3 / B	EBL	23.9 / C	16.6 / B
	WB	WBT	7.7 / A		WBT	18.9 / B	
	NB	NBL	42.0 / D		NBL	36.5 / D	
41st St at E Frontage Rd/Maplewood Sq Access	EB	EBL	7.1 / A	6.5 / A	EBL	18.1 / B	15.4 / B
	WB	WBL	5.0 / A		WBL	13.2 / B	
	NB	NBL	44.4 / D		NBT	47.9 / D	
	SB	SBL	50.0 / D		SBT	53.3 / D	
Marketplace Dr at SE Target Access	EB	EBL	5.9 / A	0.7 / A	EBL	20.8 / C	2.6 / A
	NB	NBL	2.4 / A		NBL	4.5 / A	
	SB	SBT	0.2 / A		SBT	0.9 / A	
Marketplace Dr at Slip Ramp from 37th St	EB	EBR	3.7 / A	1.9 / A	EBR	3.8 / A	6.2 / A
	WB	WBL	5.6 / A		WBR	13.2 / B	
	NB	NBT	0.4 / A		NBT	1.3 / A	
	SB	SBT	0.2 / A		SBT	0.5 / A	
W. Circle Dr at Valleyhigh Rd	EB	EBL	**62.2 / E**	28.2 / C	EBL	**63.7 / E**	30.4 / C
	WB	WBL	**65.2 / E**		WBL	**57.1 / E**	
	NB	NBL	**62.4 / E**		NBL	**55.7 / E**	
	SB	SBL	**55.5 / E**		SBL	**56.0 / E**	
37th St at RTC West	EB	EBL	2.0 / A	2.8 / A	EBL	2.7 / A	3.1 / A
	WB	WBR	2.2 / A		WBR	2.7 / A	
	NB	NBR	1.9 / A		-	-	
	SB	SBL	6.0 / A		SBL	6.1 / A	

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
37th St at RTC East	EB	EBT	0.1 / A	1.8 / A	EBT	0.4 / A	1.4 / A
	WB	WBL	3.9 / A		WBL	3.4 / A	
	NB	NBL	7.1 / A		NBL	6.8 / A	
37th St at SB US 52 Ramp	EB	EBT	4.4 / A	12.9 / B	EBT	16.7 / B	17.1 / B
	WB	WBT	9.0 / A		WBL	13.4 / B	
	SB	SBL	53.2 / D		SBL	52.0 / D	
37th St at NB US 52 Ramp	EB	EBL	12.6 / B	16.4 / B	EBL	27.7 / C	19.7 / B
	WB	WBT	11.9 / B		WBT	14.0 / B	
	NB	NBT	33.2 / C		NBL	37.1 / D	
37th St at 21st Ave/Maplewood Sq Access	EB	EBL	7.2 / A	5.0 / A	EBL	13.2 / B	12.1 / B
	WB	WBL	7.1 / A		WBL	13.3 / B	
	NB	NBL	53.8 / D		NBL	49.8 / D	
	SB	SBL	42.1 / D		SBL	40.1 / D	
Marketplace Dr at E RTC Access[1]	EB	-	-	0.4 / A	EBL	8.1 / A	0.8 / A
	NB	NBT	0.5 / A		NBT	1.1 / A	
	SB	SBT	0.3 / A		SBT	0.5 / A	
Valleyhigh Dr at Watson Ave NW	WB	WBL	8.7 / A	1.3 / A	WBL	10.4 / B	1.5 / A
	NB	NBR	0.8 / A		NBR	0.6 / A	
	SB	SBL	3.8 / A		SBL	4.0 / A	
19th St at W Frontage Rd	EB	EBL	13.1 / B	11.7 / B	EBL	19.1 / B	16.4 / B
	WB	WBL	13.2 / B		WBL	17.2 / B	
	NB	NBT	**57.9 / E**		NBT	42.9 / D	
	SB	SBL	46.4 / D		SBL	47.8 / D	
19th St at US 52 Interchange	EB	EBL	47.0 / D	30.4 / C	EBL	48.0 / D	31.4 / C
	WB	WBL	36.4 / D		WBL	36.8 / D	
	NB	NBL	34.0 / C		NBL	38.7 / D	
	SB	SBL	32.9 / C		SBL	30.2 / C	

Notes:
1: E RTC Access is blocked by concrete barriers under existing conditions, a low number of vehicles turn into and out of E RTC Access to make U-Turns.

Table 4 – 2024 Existing Operations Analysis Queues

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
W Circle Dr at 41st St	EB	EBT	134	944	EBT	119	944
	WB	WBL	201	290	**WBL**	**372**	**290**
	NB	NBT	80	1200	NBL	138	330
	SB	SBT	177	922	SBT	215	922
41st St at 31st Ave/RTC West	EB	EBT	92	1212	EBT	146	1212
	WB	WBT	116	1336	WBT	169	1336
	NB	NBL	50	130	NBT	107	597
	SB	SBL	79	100	SBT	110	906
41st St at W Frontage Rd/Marketplace Dr	EB	EBT	120	1336	**EBR[1]**	**150**	**95**
	WB	WBT	112	434	WBT	142	434
	NB	NBT	99	272	NBT	174	272
	SB	SBL	128	270	**SBL[2]**	**282**	**270**
41st St at SB US 52 Ramp	EB	EBT	81	450	EBR	317	440
	WB	WBL	164	190	**WBL[1]**	**330**	**190**
	SB	SBT	193	953	SBT	214	953
41st St at NB US 52 Ramp/E Frontage Rd	EB	EBT	69	576	EBL	170	230
	WB	WBT	137	345	WBT	256	345
	NB	NBT	165	625	NBT	159	625
41st St at E Frontage Rd/Maplewood Sq Access	EB	EBL	86	320	EBL	196	320
	WB	WBT	98	457	WBT	201	457
	NB	NBT	54	830	**NBL[1]**	**138**	**95**
	SB	SBL	70	175	SBL	137	175
Marketplace Dr at SE Target Access	EB	EBR	32	60	EBL	62	410
	NB	NBL	29	200	NBL	79	200
	SB	SBT	-	573	SBT	20	573
Marketplace Dr at Slip Ramp from 37th St	EB	EBR	20	110	EBR	28	110
	WB	WBR	55	390	WBR	227	390
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
W. Circle Dr at Valleyhigh Rd	EB	EBT	164	1110	EBL	160	290
	WB	WBL	88	295	WBL	125	295
	NB	NBT	175	1129	NBT	282	1129
	SB	SBL	229	310	SBT	231	670
37th St at RTC West	EB	EBL	20	65	EBL	20	65
	WB	WBR	-	585	WBR	20	585
	NB	NBT	20	400	NBT	-	400
	SB	SBT	66	727	SBT	66	727

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
37th St at RTC East	EB	EBT	-	800	EBT	-	800
	WB	WBL	47	340	WBL	34	340
	NB	NBL	20	940	NBL	35	940
37th St at SB US 52 Ramp	EB	EBT	20	650	EBT	108	650
	WB	WBT	134	610	WBT	231	610
	SB	SBT	190	973	SBT	268	973
37th St at NB US 52 Ramp	EB	EBT	65	610	EBL	132	165
	WB	WBT	214	405	WBT	306	405
	NB	NBT	223	1443	NBT	294	1443
37th St at 21st Ave/Maplewood Sq Access	EB	EBT	57	397	EBT	145	397
	WB	WBT	87	960	WBT	189	960
	NB	NBL	65	150	NBL	136	150
	SB	SBT	66	686	SBT	142	686
Marketplace Dr at E RTC Access[1]	EB	EBL	-	970	EBL	20	970
	NB	NBL	-	130	NBL	-	130
	SB	SBR	-	170	SBR	-	170
Valleyhigh Dr at Watson Ave NW	WB	WBT	43	1199	WBT	59	1199
	NB	NBR	20	305	NBR	20	305
	SB	SBL	37	260	SBL	43	260
19th St at W Frontage Rd	EB	EBT	146	1122	EBT	239	1122
	WB	**WBL[1]**	**118**	**110**	WBT	248	265
	NB	NBR	77	445	NBR	113	445
	SB	SBL	113	250	SBL	186	250
19th St at US 52 Interchange	EB	EBT	162	284	EBT	190	284
	WB	WBL	232	555	WBL	230	555
	NB	NBL	316	860	NBL	334	860
	SB	SBL	315	865	SBL	176	865

XXX – 95th% queues exceed available storage

XXX – 95th% through queue exceeds adjacent turn lane storage

[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage

[2] 95th percentile queues extend past available storage for both SBL and SBT lanes

2.4 Crash Analysis

Crash data from January 1, 2019, through June 30, 2024 (5.5 years), was obtained from the MnDOT Crash Mapping Analysis Tool (MnCMAT2). The type and severity of the crashes were reviewed, and the crash rates and critical rates were calculated for the 18 original study intersections; the 7 added or internal development intersections were not included in the crash analysis.

The crash rate at each intersection is expressed as the number of crashes per million entering vehicles (MEV). The critical crash rate is a statistical value that is unique to each intersection and is based on vehicular exposure and the statewide average crash rate for similar intersections. An intersection with a crash rate higher than the critical rate can indicate that there is a high probability that the number of crashes is due to something other than randomness and the site should be reviewed further.

Crash severity is separated into five categories based on injuries sustained during the crash.

- Fatal – Crash that results in a death.
- Severity A – Crash that results in an incapacitating injury or serious injury.
- Severity B – Crash that results in a non-incapacitating injury or minor injury.
- Severity C – Crash that results in possible injury.
- Property Damage – Crash that results in property damage only, with no injuries.

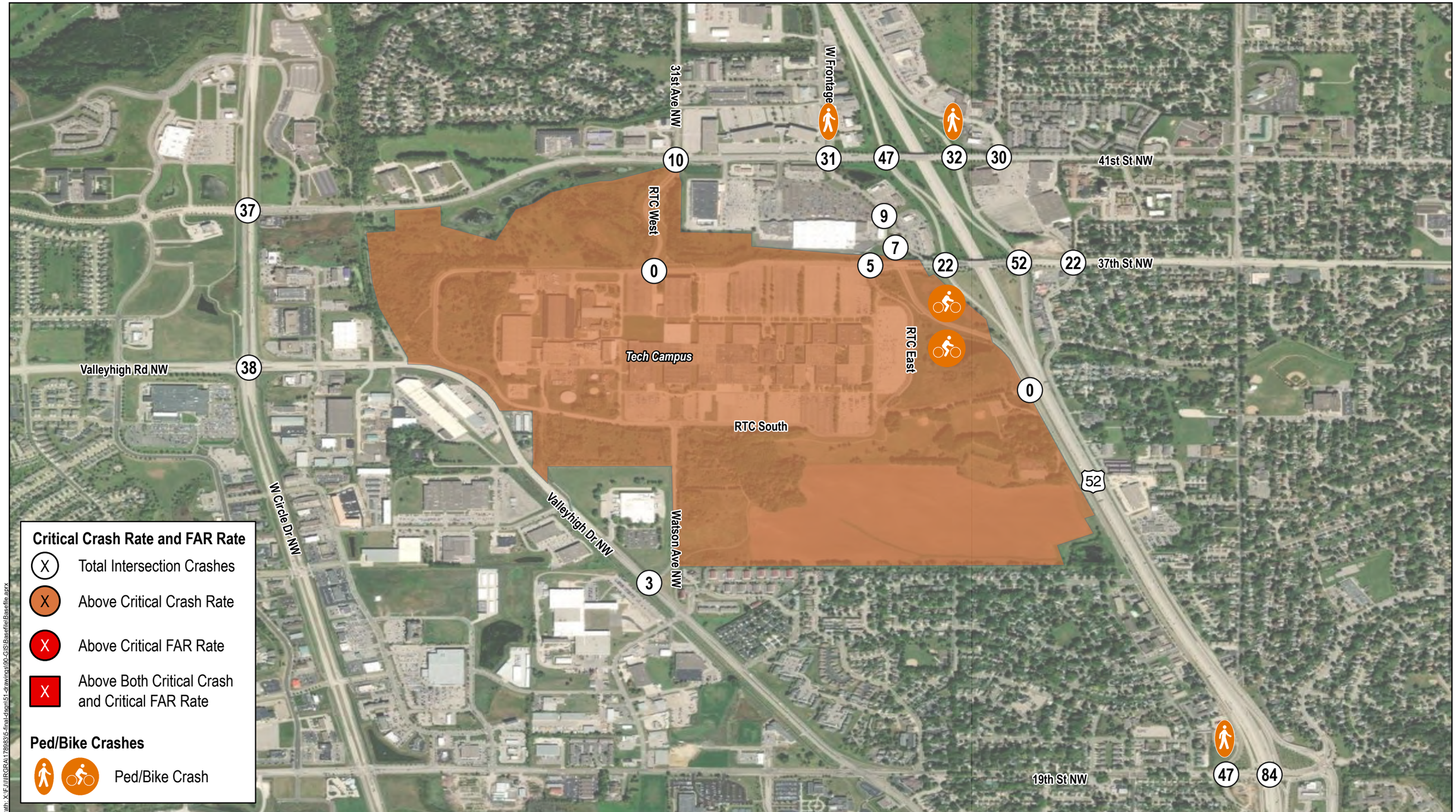
Intersection Crash Summary

- There was a total of 418 crashes that occurred in the 5.5-year timeframe at the 18 study intersections. added or internal intersections were not included in the safety analysis.
- There was one fatal crash and three severity A crashes in the 5.5-year time frame.
  - The fatal crash and one of the severity A crashes occurred at the intersection of W. Circle Drive at 41st Street NW.
- The intersections of West Circle Drive at Valleyhigh Road NW and 19th Street NW at the US 52 Single Point Urban Interchange (SPUI) each experienced one severity A crash.
- None of the study intersections exceeded the calculated critical crash rate for each individual intersection.
- The majority of the intersection crashes were rear end (39%) or right angle (36%) type crashes.
- There were three pedestrian and two bicycle crashes at the study intersections.

The intersection crash information is summarized in **Table 5**. **Figure 4** is a crash summary figure.

Table 5 – Intersection Crash Summary (January 2019 – June 2024)

Intersection	Crash Severity						Crash Rates	
	Fatal	A	B	C	Property Damage	Total	Int. Rate	Critical Rate
West Circle Drive NW at 41st Street	1	1	9	6	20	37	0.59	0.87
41st Street NW at 31st Avenue NW/RTC West	0	0	1	0	9	10	0.27	0.87
41st Street NW at W. Frontage Road/Marketplace Dr	0	0	1	5	29	35	0.55	0.87
41st Street NW at SB US 52 Ramp	0	0	1	6	37	44	0.72	0.88
41st Street NW at NB US 52 Ramp/E. Frontage Road	0	0	2	7	17	26	0.52	0.91
41st Street NW at E. Frontage Road/Maplewood Sq Access	0	0	3	8	20	31	0.70	0.85
Marketplace Drive NW at SE Target Access	0	0	0	1	6	7	0.29	0.36
Marketplace Drive NW at Slip Ramp from 37th Street	0	0	0	2	3	5	0.24	0.38
W. Circle Drive at Valleyhigh Rd	0	1	5	5	27	38	0.54	0.86
37th Street NW at RTC West	0	0	0	0	0	0	0.00	0.52
37th Street NW at RTC East	0	0	0	1	1	2	0.14	0.43
37th Street NW at SB US 52 Ramp	0	0	1	4	12	17	0.46	0.88
37th Street NW at NB US 52 Ramp	0	0	4	6	41	51	0.73	0.86
37th Street NW at 21st Avenue NW/Maplewood Sq Access	0	0	1	2	21	24	0.48	0.90
Marketplace Dr at East RTC Access	0	0	0	0	0	0	0.00	0.50
Valleyhigh Dr at Watson Ave NW	0	0	0	2	1	3	0.14	0.37
19th Street at W. Frontage Rd	0	0	1	7	29	37	0.68	0.89
19th Street at US 52 SPUI	0	1	2	8	40	51	0.66	0.85
Total	**1**	**3**	**31**	**70**	**313**	**418**		



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Crash Summary

Rochester Tech Campus
Rochester, MN

Figure 4

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3 Future Conditions

To determine the LOS, delay, and queuing information for the AM and PM peak hour conditions for the future year analysis phases, traffic forecasts were developed for the study intersections.

Future traffic volumes were developed for the three development phase years as well as a long-term forecast year. The forecast years include Phase 1 (2027), Phase 2 (2028), Phase 3 (2029), and Horizon Year (2045) volumes.

3.1 Traffic Forecasts and Future No Build Volumes

3.1.1 Background Traffic Growth

Future daily traffic volumes and growth rates were developed using the Rochester-Olmsted Council of Governments (ROCOG) Travel Demand Model (TDM). The TDM was used to capture background traffic growth from existing conditions to the future year 2045, as well as changes in travel patterns due to the roadway network modifications. The following assumptions and methodology were used to develop the traffic forecasts:

- The land use in the five Transportation Analysis Zones (TAZs) within the study area was set to existing year 2018 conditions. The study area TAZs include: 180, 598, 599, 600 and 601; a TAZ map is included in **Appendix D**. The remaining TAZs in the ROCOG TDM used the 2045 Long Range Transportation Plan (LRTP) land use assumptions provided by ROCOG.
- 37th Street connection: As part of this development project, 37th Street will be connected to Valleyhigh Drive through the north side of the RTC Campus. The existing 'International Business Machine' roadway on the north side of the existing campus will be reconstructed as an extension of 37th Street from the US 52 Interchange. The alignment of 37th Street extends west from the US 52 Interchange before proceeding south on the west side of the RTC Campus until it connects with Valleyhigh Drive. The new intersection of 37th Street NW at Valleyhigh Drive is proposed to be a roundabout intersection. The 37th Street connection is proposed to be made in Phase 2 of the Development. **Appendix E** contains the proposed roadway alignment of the 37th Street connection.
- To understand impacts to future travel patterns, in the TDM, the roadway network was updated to include the future 37th Street connection when developing the background traffic growth rates.
- To understand the shifts in background traffic due to the proposed 37th Street connection, scenarios in the TDM were compared with and without the 37th Street Connection and Traffic forecasts in scenarios with the connection were adjusted to incorporate the travel pattern shifts observed in the TDM.

The future 2045 daily traffic forecasts (**Figure 5**) and TDM growth were reviewed and used to develop growth rates for the approaches to all study intersections; the growth rates were applied to the existing turning movement count data to develop future background traffic turning movement forecasts.

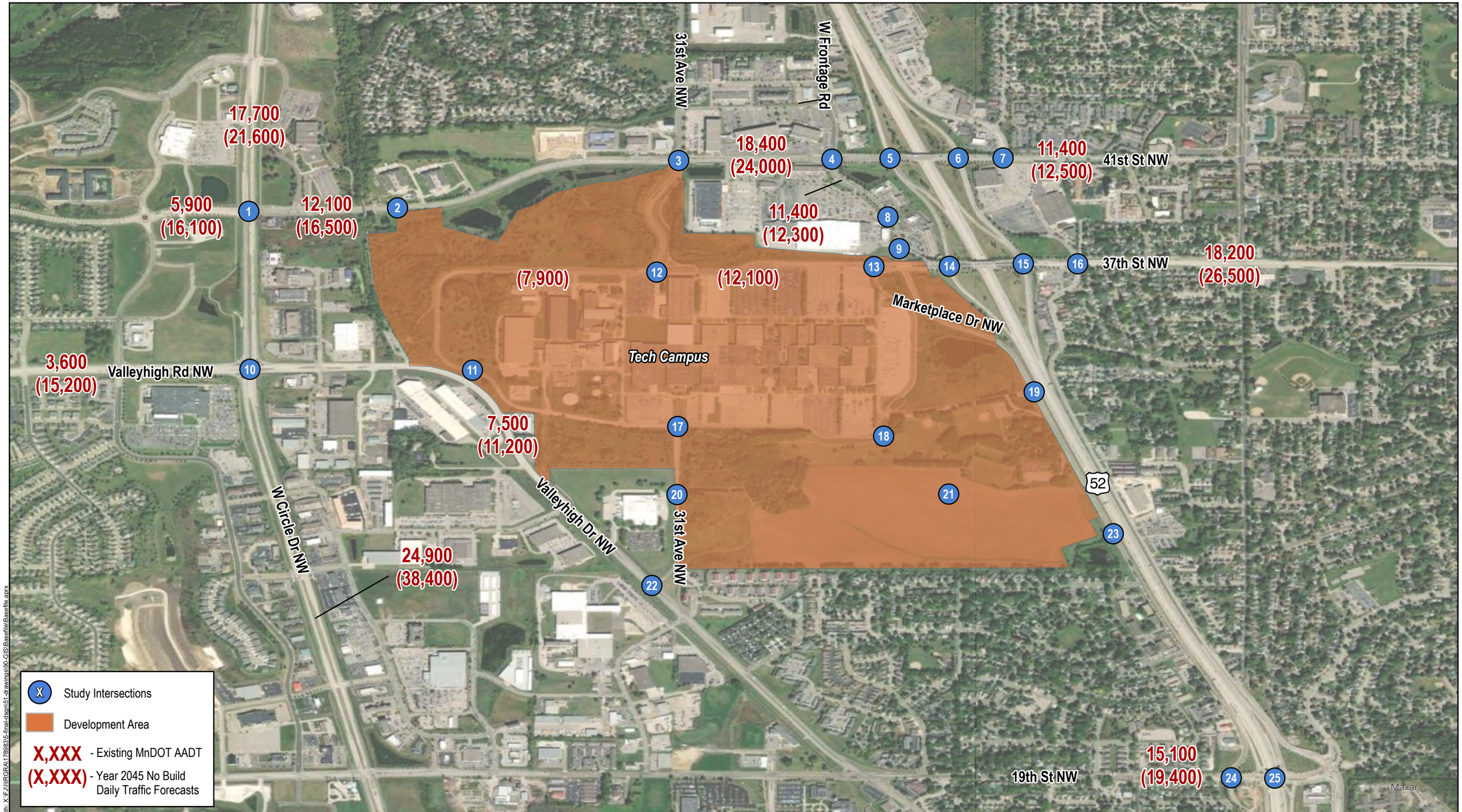
Typically, traffic analysis studies will compare No Build and Build scenarios to determine the impact of a proposed development on a traffic network. In this study, the addition of the proposed 37th Street connection complicates this comparison as the connection shifts background traffic

patterns significantly, making a comparison to a model without the connection not valuable. Since the City of Rochester has no plans to connect 37th Street to Valleyhigh Drive without the study development, No Build scenarios will not be analyzed for development Phase 2, Phase 3, and the Horizon Year, which all would include the 37th Street connection, As such the only No Build scenario analyzed in this study is in Phase 1 (2027) of the development.

The No Build 2027 scenario assumes that 37th Street is not connected to Valleyhigh Drive. As the existing tech campus is not operating at full capacity, trip generation was included for the entire existing site operating at full capacity. First, existing trips to and from the tech campus were removed. Background growth was applied to the network to bring background traffic from 2024 to 2027 levels based on growth rates derived from the TDM. Then, trips were added to the model based on trip generations and trip distributions for the existing tech campus under full operation.

No Build 2027 volumes are represented in **Figures 6A** and **6B**.

Forecasted background traffic for Phase 2 (2028), Phase 3 (2029), and Horizon Year (2045) scenarios were calculated similarly to the No Build 2027 scenario. As in the No Build 2027 scenario, to model the existing tech campus at full capacity, existing tech campus trips were removed, and trips generated for the existing tech campus operating at full capacity were added and routed through the traffic network. Background traffic was grown according to the developed background growth rates to each scenario's specified analysis year. An adjustment of background traffic volumes was made to reroute a portion of the background traffic from 41st Street to the new 37th Street connection according to expected volumes found from the TDM.



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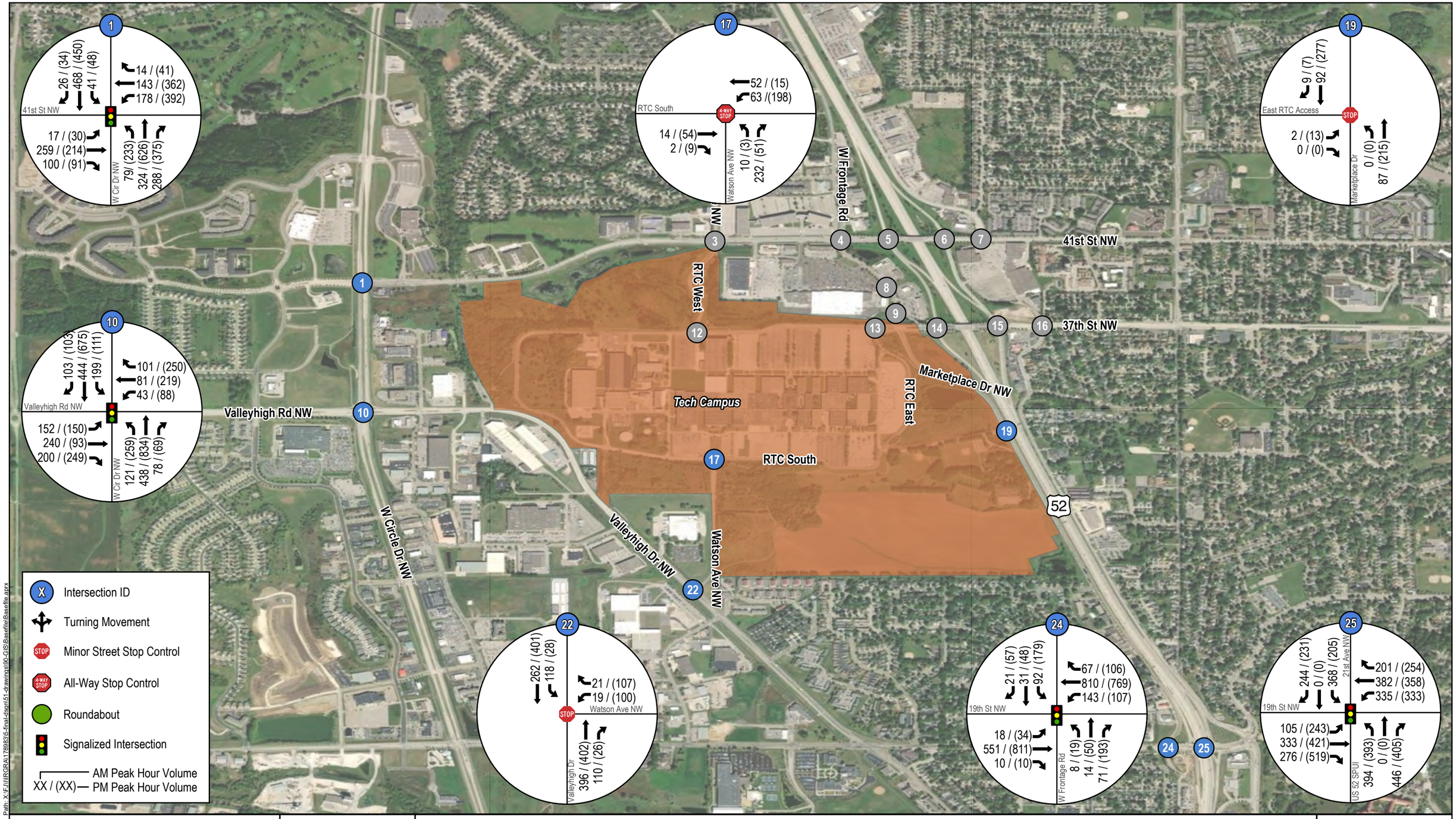
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Year 2045 No Build Daily Traffic Forecasts

Rochester Tech Campus
Rochester, MN

Figure 5

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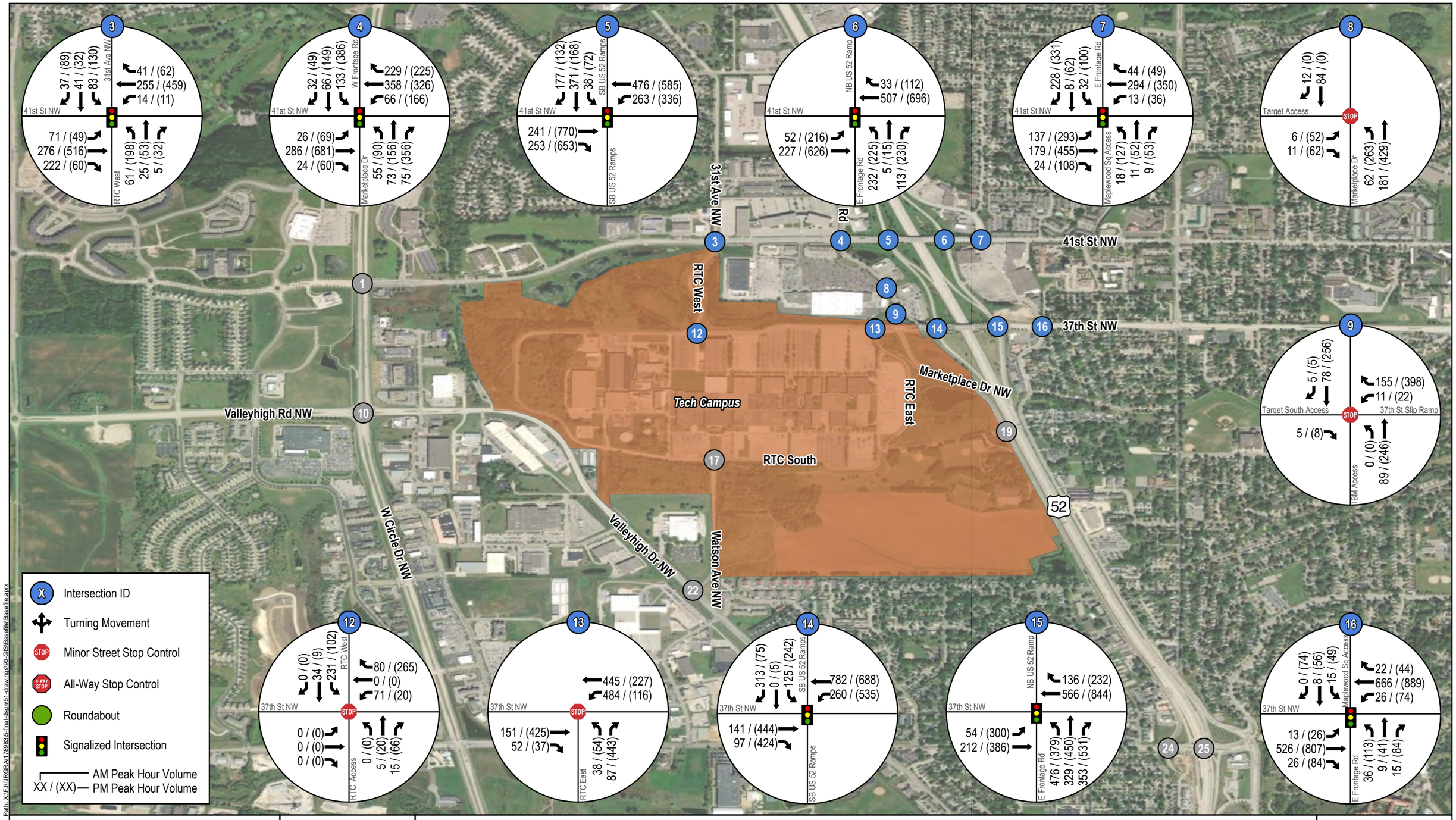
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2027 No Build Volumes

Rochester Tech Campus
Rochester, MN

Figure 6A

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Project: IRGRA 178983
Print Date: 5/5/2025

User Name: ljohnson
Projection: Olmsted Co Coord
Source:

2027 No Build Volumes

Rochester Tech Campus
Rochester, MN

Figure 6B

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3.2 Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition, was used to estimate trip generation for the AM and PM peak hours for each parcel in the proposed Rochester Technology Campus development. Internal trip capture rates were applied to reduce the total trips entering the development study area using methodology from NCHRP Report 684.

Trip generation estimates were developed for the three phases proposed as part of the RTC project.

Definitions of key terms related to this study's trip generation analysis are provided below for reference:

- **Trip Generation:** The estimated number of trips generated to and from a site based on activity for that land use type.
- **Internally Linked Trip:** A trip where a user visits multiple land uses within a development while making only one trip in and out of the public roadway network. Internally linked trips reduce the total trips entering and exiting the development study area and reduce the total driveway trips to the site.
- **External Driveway Trip:** A trip that enters or exits a development from a driveway on the public roadway network. Driveway trips are key metrics in analyzing the operational impact a development has on the local traffic.
- **Pass-by Trip:** Pass-by trips are existing background traffic vehicles that are already traveling between an origin and destination. As the vehicles are passing a new development retail access point, they decide to take an intermediate stop at the retail businesses before continuing onto their final destination. These trips alter vehicle volumes at the retail access driveways but do not add trips to the greater traffic network.
- **Diverted Trip:** Diverted trips are similar to pass-by trips, these are existing background traffic vehicles that are within the traffic network on their way to a final destination outside the development. The vehicle decides to make a stop at the development before continuing onto their final destination. However, unlike a pass-by trip, the vehicles are not directly passing by a retail development access point and are required to divert their trip through a number of intersections to get to their intermediate stop at the development. These trips alter vehicle volumes at a number of intersections within the traffic network but come from background traffic vehicles and do not generally add vehicle traffic to the interchanges or outer intersections of the modeled traffic network.

The total proposed mixed use development site is expected to generate approximately 41,135 trips per day under the full build conditions, with approximately 1,593 AM peak hour total trips and 3,335 PM peak hour total trips.

Based on the National Cooperative Highway Research Program (NCHRP) Report 684's methodology, reasonable internally linked trip reduction percentages range from 6.7% to 22.3% in the AM and PM peak hours, based on the phase of development. These internal linked trip reductions were applied to the trip generation values. For retail land uses, pass-by and diverted trips were calculated and assigned to the roadway network.

With all of the internal link trips, pass-by trips, and diverted trips calculations applied, the total new external driveway trips expected to enter and exit the site are 1,122 AM peak hour external driveway trips and 1,614 PM peak hour external driveway trips. These new external driveway

trips were then distributed among the study intersections for analysis. Pass-by and diverted trips were distributed through the model where applicable.

For the shopping center and shopping plaza land uses, the following pass-by trip and diverted trip rates were used based on data provided by ITE.

- For Shopping Centers (ITE Land use 820), ITE suggests rates of 22% for pass-by trips and 26% for diverted trips based on data from 24 case studies.
- For Shopping Plaza (ITE Land use 821), ITE suggests rates of 40% for pass-by trips and 23% for diverted trips based on data from 15 case studies.

The three development phase years are as follows:

- Phase 1 (2027)
- Phase 2 (2028)
- Phase 3 (2029)

Tables 6, 7, and 8 summarize the proposed trip generation for the Rochester Technology Campus development site in each of the three development phases. **Table 9** summarizes the combined trip generation under full build out conditions. The site plan and trip generation areas are shown in **Figure 7A**. Development Phasing is shown in **Figure 7B**. Lot C, in the northern area of the site, was excluded from the trip generation review as no development is planned for this area of the site.

ROCHESTER TECHNOLOGY CAMPUS CONCEPTUAL SITE PLAN

FINAL DRAFT
02.29.24

SEH

41st Street
8.3 ac
B1
11.2 ac
B2
B3
14.9 ac
13 ac
B4
13.6 ac
C
37th STREET
Convert to 120' ROW
100' Wide Trail Easement
37th Street
4.6 ac
D
A
20.6 ac
40th Avenue
4.3 ac
E
5.8 ac
E Frontage Road
33rd Street
7.3 ac
ROCHESTER TECHNOLOGY
CAMPUS-WEST
Valleyhigh Drive
New Roundabout
Intersection
3-way Roundabout
F
5.5 ac
G
10.8 ac
Makeplace Drive
US 52 / US 63
E Frontage Road
2.2 ac
4.9 ac
P
15.2 ac
J
7 ac
5.2 ac
O
I
H
L
14.5 ac
K
4.5 ac
5.5 ac
31st Avenue NW
Technology Drive
Valleyhigh Drive
53.4 ac
N
M
7 ac
25th Street
26th Street

LEGEND

- 4-PLEX TOWNHOMES
- MULTIFAMILY HOUSING
- HOTEL
- COMMERCIAL / RETAIL
- COMMERCIAL
- LIGHT INDUSTRIAL
- RTC CORE CAMPUS BUILDINGS
- ROADWAYS
- PARKING / PRIVATE DRIVEWAYS
- WETLAND
- STORMWATER POND (Proposed)
- STORMWATER POND (Existing)

Figure
7A

ROCHESTER TECHNOLOGY CAMPUS CONCEPTUAL SITE PLAN

FINAL DRAFT
02.29.24

SEH

41st Street
8.3 ac
B1
11.2 ac
B2
B3
14.9 ac
13 ac
B4
13.6 ac
C
37th STREET
Convert to 120' ROW
100' Wide Trail Easement
37th Street
4.6 ac
D
A
20.6 ac
40th Avenue
4.3 ac
E
5.8 ac
7.3 ac
33rd Street
E Frontage Road
ROCHESTER TECHNOLOGY
CAMPUS-WEST
New Roundabout
Intersection
Valleyhigh Drive
F
5.5 ac
G
10.8 ac
US 52 / US 63
Marketplace Drive
2.2 ac
P
15.2 ac
J
ac
4.9 ac
5.2 ac
7 ac
I
O
L
14.5 ac
K
H
4.5 ac
5.5 ac
31st Avenue NW
Valleyhigh Drive
53.4 ac
N
M
7 ac
25th Street
26th Street

LEGEND

- 4-PLEX TOWNHOMES
- MULTIFAMILY HOUSING
- HOTEL
- COMMERCIAL / RETAIL
- COMMERCIAL
- LIGHT INDUSTRIAL
- RTC CORE CAMPUS BUILDINGS
- ROADWAYS
- PARKING / PRIVATE DRIVEWAYS
- WETLAND
- STORMWATER POND (Proposed)
- STORMWATER POND (Existing)

Development Phases

- Phase 1
- Phase 2
- Phase 3

Figure 7B

Table 6 – Proposed Phase 1 Development Trip Generation

Area	Description	Land Use	ITE Land Use	Size	Units	Weekday Daily Trips	AM Trips			PM Trips		
							Total	Enter	Exit	Total	Enter	Exit
Northwest	B1	Multifamily Housing (Low-Rise)	220	149	Units	1,004	60	14	46	76	48	28
	B2			202	Units	1,361	81	19	62	103	65	38
	B3			224	Units	1,510	90	22	68	114	72	42
	B4	Senior Adult Housing - Multifamily	252	130	Units	421	26	9	17	33	18	15
					Subtotal Trips		257	64	193	326	203	123
					Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)		(17)	(4)	(13)	(72)	(45)	(27)
					External Driveway Trips		**240**	**60**	**180**	**254**	**158**	**96**
West	A	Data Center	160	300	KSF	297	33	18	15	27	8	19
	P			330	KSF	327	36	20	16	30	9	21
					Sub-Total Trips		69	38	31	57	17	40
					Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)		(4)	(2)	(2)	(13)	(4)	(9)
					External Driveway Trips		**65**	**36**	**29**	**44**	**13**	**31**
East	F	Shopping Center	820	200	KSF	7,402	168	104	64	680	326	354
					Pass-by Trips (22%)		37	23	14	150	72	78
					Diverted Trips (26%)		44	27	17	177	85	92
					New Trips (52%)		87	54	33	353	169	184
	E	Fine Dining Restaurant	931	15.00	KSF	1,258	11	9	2	117	78	39
	D	Shopping Plaza (No Supermarket)	821	50.00	KSF	3,376	87	54	33	260	127	133
					Pass-by Trips (40%)		35	22	13	104	51	53
					Diverted Trips (23%)		20	12	8	60	29	31
					New Trips (37%)		32	20	12	96	47	49
					Sub-Total New Trips		130	83	47	566	294	272
					Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)		(9)	(6)	(3)	(126)	(65)	(61)
					External Driveway Trips		**121**	**77**	**44**	**440**	**229**	**211**
					Phase 1 Total Trips	**16,956**	**592**	**269**	**323**	**1,440**	**751**	**689**
					Phase 1 External Driveway Trips Total		**426**	**173**	**253**	**738**	**400**	**338**

Table 7 – Proposed Phase 2 Development Trip Generation

Area	Description	Land Use	ITE Land Use	Size	Units	Weekday Daily Trips	AM Trips			PM Trips		
							Total	Enter	Exit	Total	Enter	Exit
South	N	Single-family Attached Housing	215	212	Units	1,526	102	32	70	121	69	52
	M			212	Units	1,526	102	32	70	121	69	52
	Subtotal Trips						204	64	140	242	138	104
	Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)						(14)	(4)	(10)	(54)	(30)	(24)
	External Driveway Trips						**190**	**60**	**130**	**188**	**108**	**80**
Southeast	H	Shopping Plaza (No Supermarket)	821	105.00	KSF	8,778	225	140	85	675	331	344
		Pass-by Trips (40%)					90	56	34	270	132	138
		Diverted Trips (23%)					52	32	20	155	76	79
		New Trips (37%)					83	52	31	250	123	127
	Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)						(6)	(3)	(3)	(56)	(27)	(29)
	External Driveway Trips						**77**	**49**	**28**	**194**	**96**	**98**
Phase 2 Total Trips						**11,830**	**429**	**204**	**225**	**917**	**469**	**448**
Phase 2 External Driveway Trips Total							**267**	**109**	**158**	**382**	**204**	**178**

Table 8 – Proposed Phase 3 Development Trip Generation

Area	Description	Land Use	ITE Land Use	Size	Units	Weekday Daily Trips	AM Trips			PM Trips		
							Total	Enter	Exit	Total	Enter	Exit
South	O1	Business Park	770	60.5	KSF	752	82	70	12	74	19	55
	O2		770	66.5	KSF	827	90	77	13	81	21	60
	J	Multifamily Housing (Low-Rise)	220	200.0	Units	1,348	80	19	61	102	64	38
	K		220	53.0	Units	357	21	5	16	27	17	10
	L		220	53.0	Units	357	21	5	16	27	17	10
					Subtotal Trips		294	176	118	311	138	173
	Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)						(18)	(11)	(7)	(69)	(31)	(38)
	External Driveway Trips						**276**	**165**	**111**	**242**	**107**	**135**
Southeast	I	Multifamily Housing (Low-Rise)	220	240	Units	1,618	96	23	73	122	77	45
					Subtotal Trips		96	23	73	122	77	45
	Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)						(6)	(2)	(4)	(27)	(17)	(10)
	External Driveway Trips						**90**	**21**	**69**	**95**	**60**	**35**
East	G	Shopping Plaza (No Supermarket)	821	105	KSF	7,090	182	113	69	545	267	278
		Pass-by Trips (40%)					73	45	28	218	107	111
		Diverted Trips (23%)					42	26	16	125	61	64
		New Trips (37%)					67	42	25	202	99	103
	Internal Linked Trip Reduction: 6.7% (AM) & 22.3% (PM)						(4)	(3)	(1)	(45)	(22)	(23)
	External Driveway Trips						**63**	**39**	**24**	**157**	**77**	**80**
Phase 3 Total Trips						**12,349**	**572**	**312**	**260**	**978**	**482**	**496**
Phase 3 External Driveway Trips Total							**429**	**225**	**204**	**494**	**244**	**250**

Table 9 – Proposed Development Trip Generation Summary

Description	Weekday Daily Trips	AM Trips			PM Trips		
		Total	Enter	Exit	Total	Enter	Exit
Phase 1 Total Trips	16,956	592	269	323	1,440	751	689
Phase 1 External Driveway Trips Total		426	173	253	738	400	338
Phase 2 Total Trips	11,830	429	204	225	917	469	448
Phase 2 External Driveway Trips Total		267	109	158	382	204	178
Phase 3 Total Trips	12,349	572	312	260	978	482	496
Phase 3 External Driveway Trips Total		429	225	204	494	244	250
Full Build Out Summary							
Total Trips	**41,135**	**1,593**	**785**	**808**	**3,335**	**1,702**	**1,633**
Total Pass-by Trips		235	146	89	742	362	380
Total Diverted Trips		158	97	61	517	251	266
Total New Trips		1,200	542	658	2,076	1,089	987
Total Linked Trip Reduction		(78)	(35)	(43)	(462)	(241)	(221)
Total External Driveway Trips		**1,122**	**507**	**615**	**1,614**	**848**	**766**

3.3 Trip Distribution

Trips from the proposed Rochester Technology Campus development were distributed to the roadway network based on travel patterns developed from the ROCOG Travel Demand Model.

3.3.1 ROCOG Travel Demand Model Trip Distribution

To understand the distribution of trips to and from the development site, the ROCOG TDM was used. The five TAZs in the study area were updated to reflect the proposed RTC development; the land use in all other TAZs remain consistent with the ROCOG 2045 Long Range Transportation Plan (LRTP). Trips originating in and destined to the development were isolated and the magnitudes of the model volumes were used to develop the following distribution of trips to and from the RTC development:

- 1% to/from the north on W. Circle Dr
- 2% to/from the north on 31st Ave
- 19% to/from the north on US 52
- 16% to/from the east on 37th St
- 29% to/from the south on US 52
- 6% to/from the southeast on Valleyhigh Dr
- 4% to/from the south on W. Circle Dr
- 3% to/from the west on US 14
- 10% to/from the west on 41st St/Badger Hills Dr
- 10% to/from the west on Valley High Dr

The trip distribution routing to/from each individual development parcel was based on each parcel's location within the overall development area and the ease of access to and from the surrounding roadway network. Parcels within the development that have more immediate access to 41st Street or Marketplace Drive will have some variation to their trip distribution percentages and routing, but the overall directionality of the trip distributions will remain the same.

Phase 1 of the development assumed that 37th Street would not be connected to Valleyhigh Drive, and trips were routed accordingly. Phase 2 and 3 of the development assumed that 37th is connected to Valleyhigh Drive, with vehicles routed through the new connection accordingly.

Figure 8 shows the overall traffic distribution to the surrounding roadway network.



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Trip Distributions

Rochester Tech Campus
Rochester, MN

Figure 8

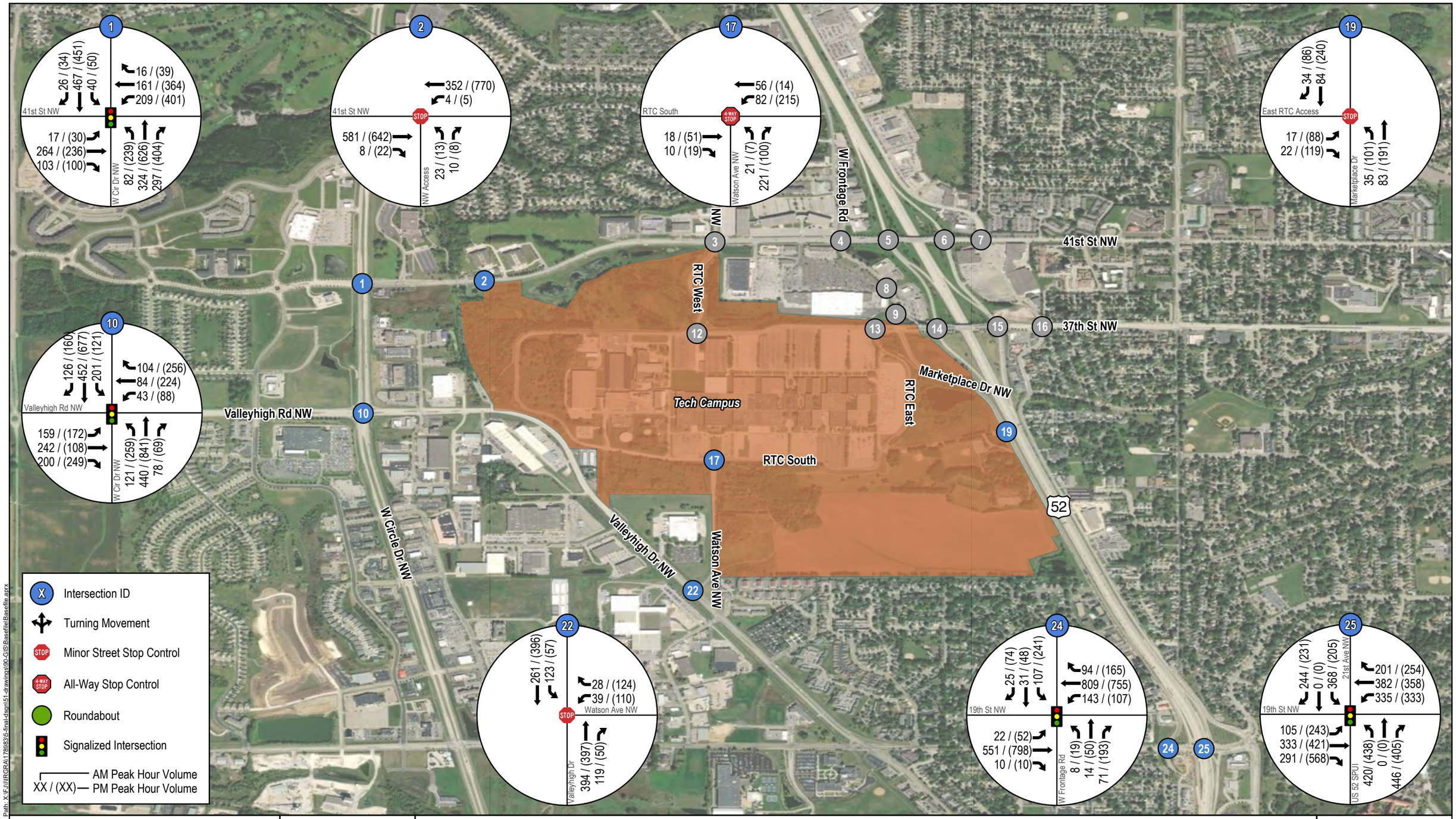
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4 Build Conditions

Future Phase 1 (2027), Phase 2 (2028), Phase 3 (2029), and Horizon Year (2045) Build volumes were created by combining the estimated development trips with background traffic grown to the development phase year as described in section 3.1.

Development trips were routed through the network according to the build distribution found from the ROCOG Travel Demand Model. In Phase 2, Phase 3 and the Horizon Year scenario, 37th Street is assumed to be connected to Valleyhigh Drive. The proposed development traffic is routed through this connection as applicable. Background traffic is rerouted through the new connection according to findings from the Travel Demand Model when the new connection makes for a shorter trip between origin and destination pairs within the Travel Demand Model.The following figures show the Build Volumes at each phase of the development:

- The Phase 1 (2027) Build volumes are represented in **Figures 9A and 9B**.
- The Phase 2 (2028) Build volumes are represented in **Figures 10A and 10B**.
- The Phase 3 (2029) Build volumes are represented in **Figures 11A and 11B**.
- The Horizon Year (2045) Build volumes are represented in **Figures 12A and 12B**.



X Intersection ID

Turning Movement

STOP Minor Street Stop Control

4-WAY STOP All-Way Stop Control

Roundabout

Signalized Intersection

AM Peak Hour Volume
XX / (XX) PM Peak Hour Volume

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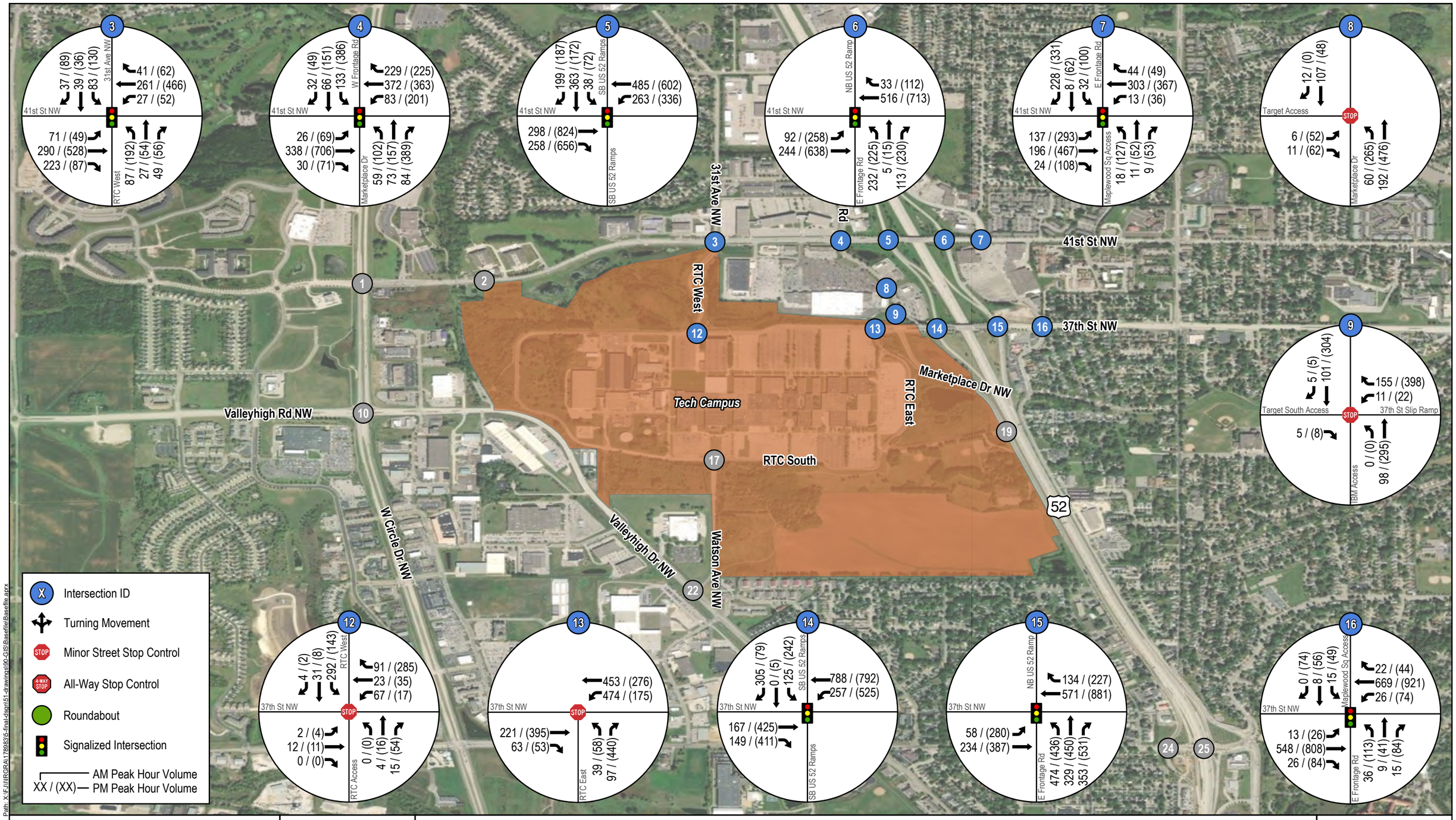
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2027 Build Volumes - Phase 1

Rochester Tech Campus
Rochester, MN

Figure 9A

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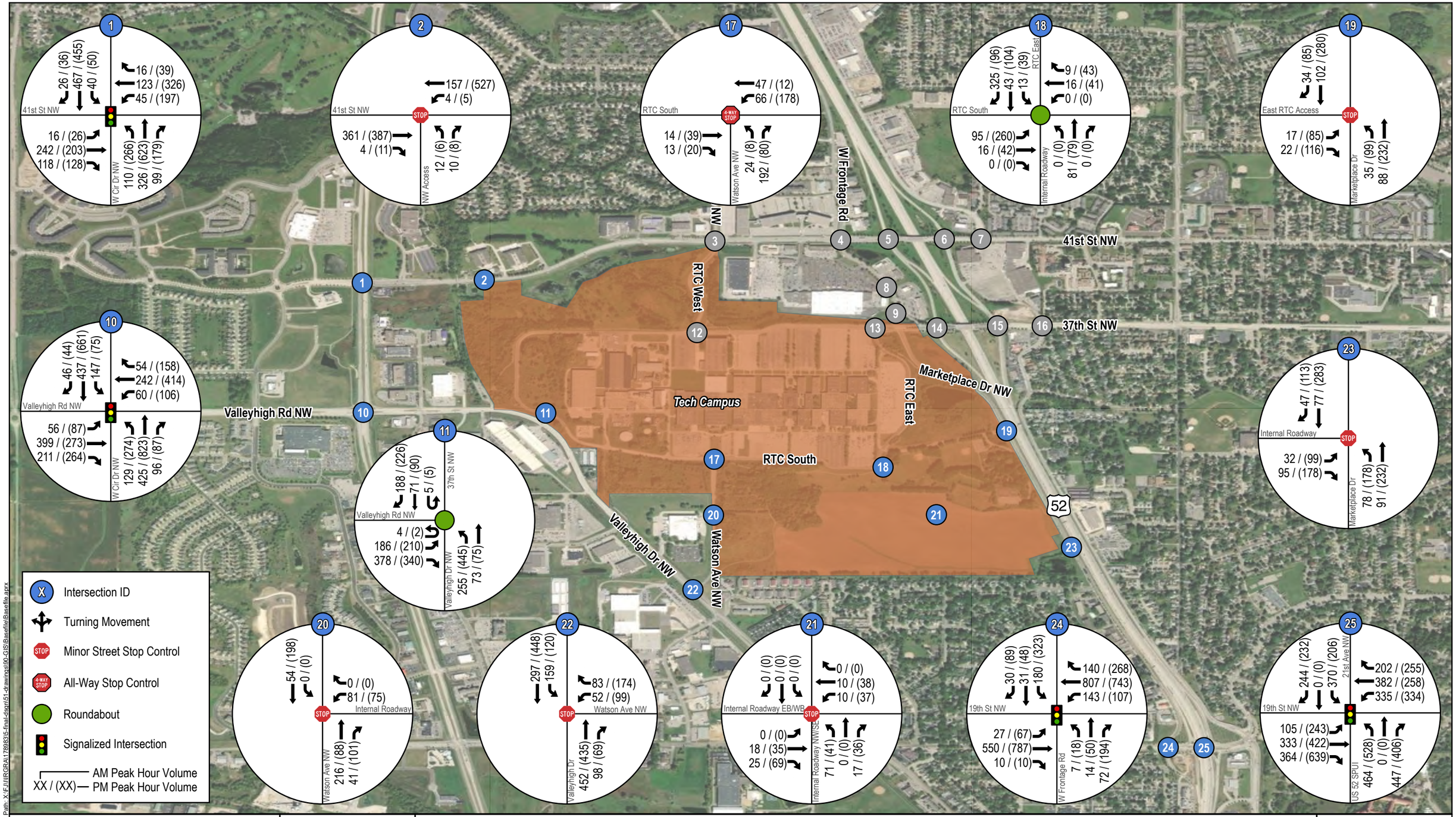
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2027 Build Volumes - Phase 1

Rochester Tech Campus
Rochester, MN

Figure 9B

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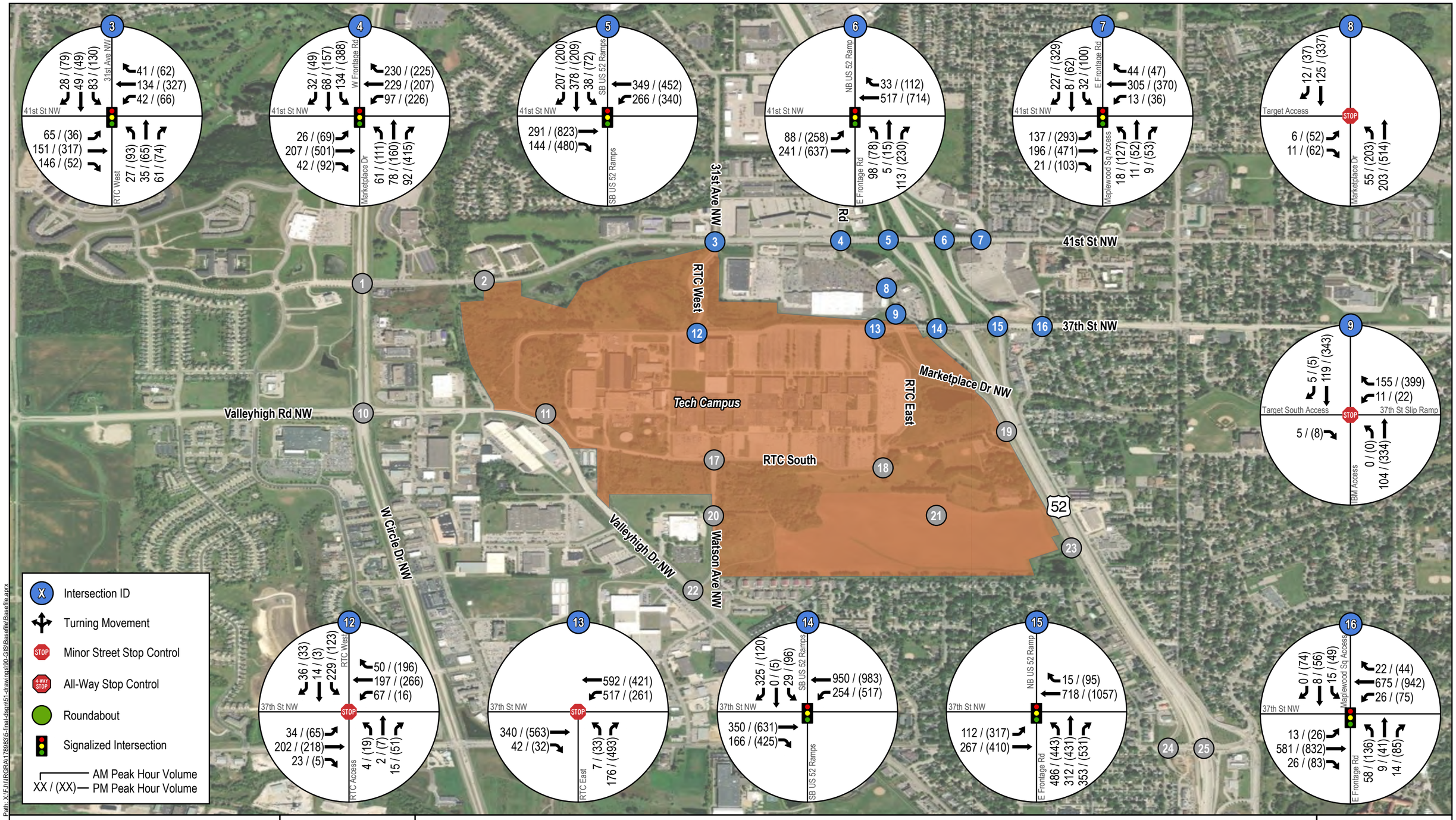
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2028 Build Volumes - Phase 2

Rochester Tech Campus
Rochester, MN

Figure
10A

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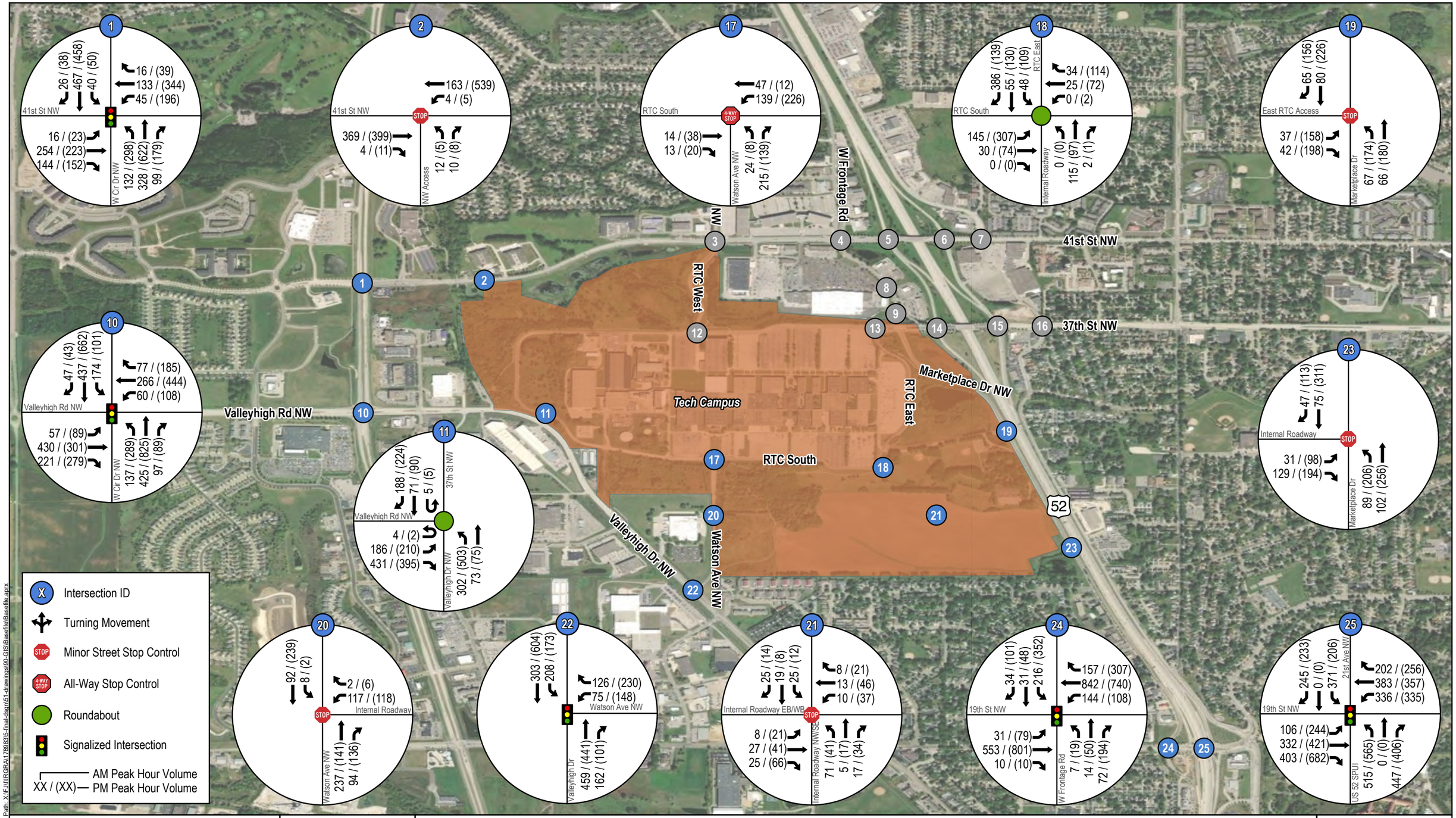
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2028 Build Volumes - Phase 2

Rochester Tech Campus
Rochester, MN

Figure 10B

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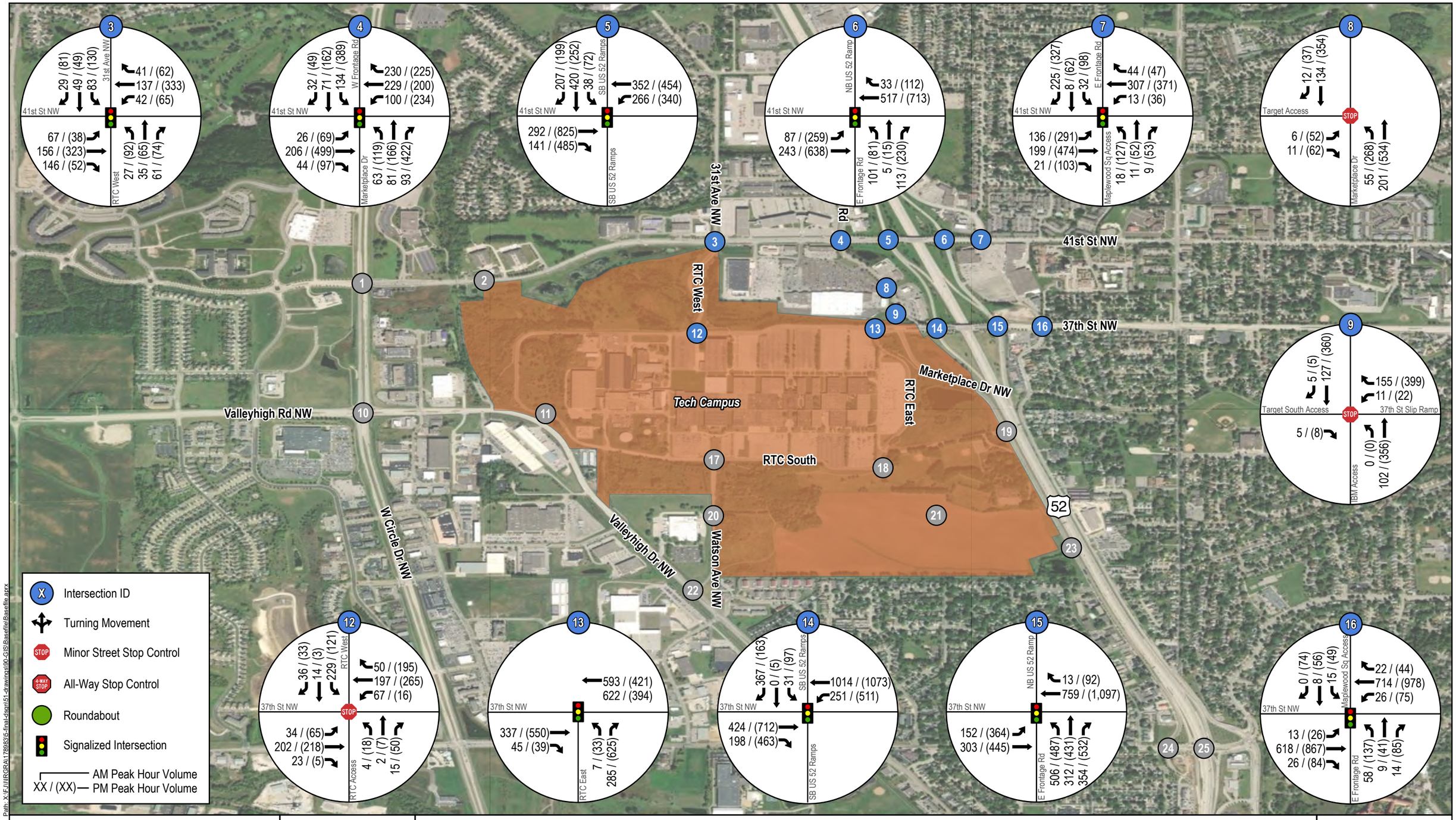
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2029 Build Volumes - Phase 3

Rochester Tech Campus
Rochester, MN

Figure
11A

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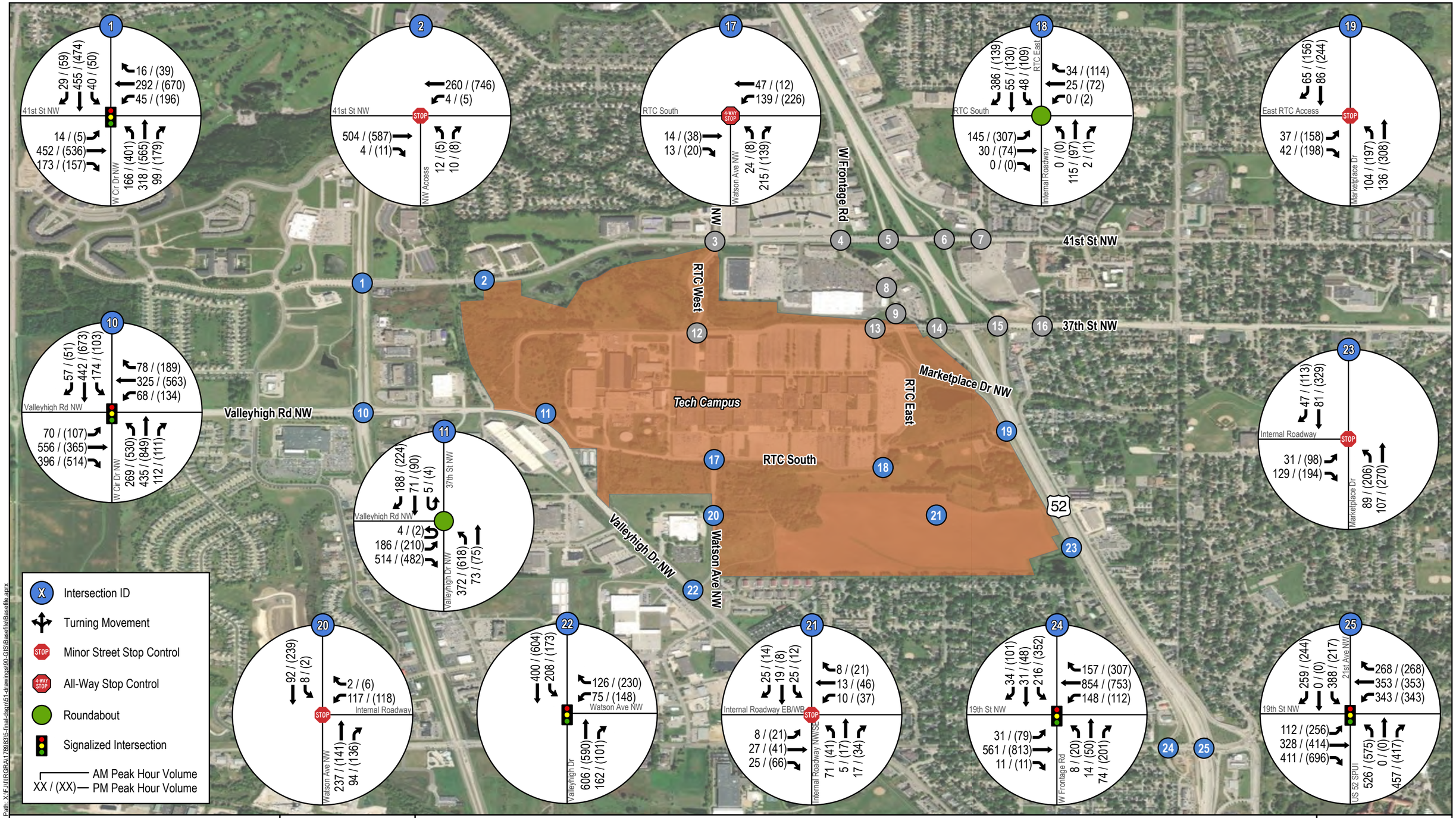
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2029 Build Volumes - Phase 3

Rochester Tech Campus
Rochester, MN

Figure
11B

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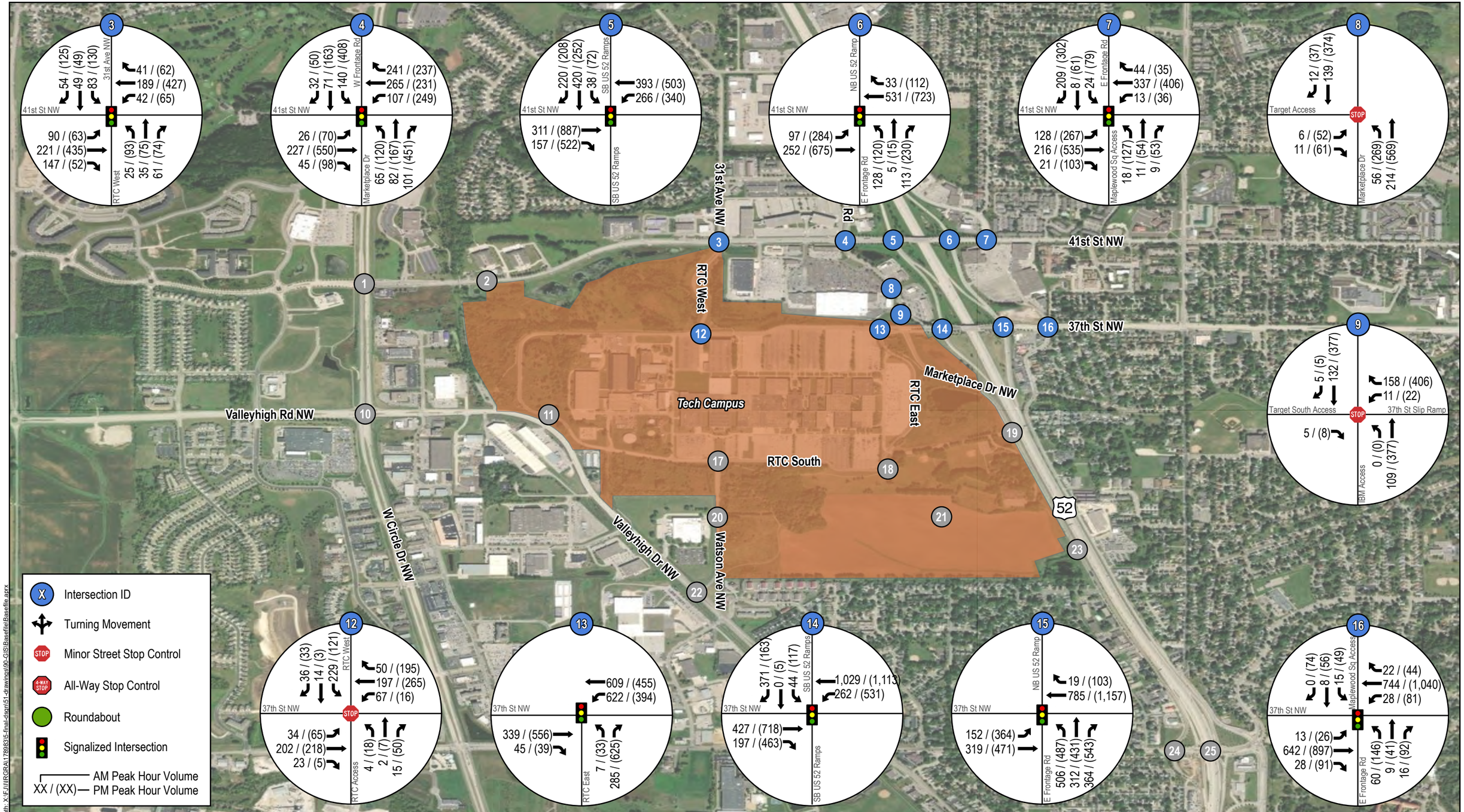
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2045 Build Volumes - Horizon Year

Rochester Tech Campus
Rochester, MN

Figure
12A

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2045 Build Volumes - Horizon Year

Rochester Tech Campus
Rochester, MN

Figure 12B

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5 Warrant Analysis

The Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) provides guidance on when it may be appropriate to use all-way stop or signal control at an intersection. This MnMUTCD guidance is provided in the form of "warrants", or criteria, for when all-way stop or signal control may be justified. Though all-way stop or signal control typically should not be installed at an intersection unless a MnMUTCD warrant is met, meeting a warrant at an intersection does not in itself require the installation of that control. An engineering study that considers factors, including warrants, should be performed to determine the "best" type of control at an intersection. MnDOT guidance suggests that roundabouts are warranted if traffic volumes meet the criteria for either all-way stops or traffic signals, or to address specific safety concerns at the intersection.

5.1.1 Requirements for Installation of an All-Way Stop

For all-way stop control installation, the study reviewed the minimum volume criteria outlined in the MnMUTCD (Chapter 2B.7). This criteria states that for any 8 hours of the day, the combined major approach volumes and combined minor approach volumes should be at or greater than the volume thresholds.

5.1.2 Requirements for Installation of a Traffic Signal

For traffic signal installation, many agencies typically require volume thresholds for Warrant #1 to be satisfied, which requires 8-hours of combined major approach volumes and the highest minor street approach volume to meet MnMUTCD thresholds. These thresholds vary with the number of approach lanes on the major and minor street. Other warrants may be used as indicators of a need to consider traffic control change; an engineering study that considers factors, including warrants, should be performed to determine the optimum type of control at an intersection. Warrant #2 (four hour) and Warrant #3 (peak hour) were also included in the analysis for the study intersection.

5.1.3 Warrant Analysis Assumptions

MnMUTCD guidelines suggest that for the purpose of warrant analysis, 100% of right turning traffic from the minor leg should be removed because right turning vehicles are typically able to enter the traffic stream with minimal delay or conflict; the right turning traffic would not require a traffic signal to reduce delay or improve safety. In certain circumstances (i.e. high right turn volume, minimal mainline gaps, etc.), MnDOT procedures allow for the inclusion of 50% of the minor street right turning traffic in the analysis. The MnDOT guidance states "if right turning volume exceeds 70% of its potential capacity for any hour for each approach, 50% of the right turning volume for all hours should be added back in."

MnMUTCD guidelines suggest that the warrant thresholds may be reduced based on the roadway speeds and population of the city the intersection is within. If either major approach to the intersection has a posted speed, or 85th percentile speed, that exceeds 40 mph, then a reduction to 70% threshold volumes is allowed in both the all-way stop warrant and traffic signal warrant. If the population of the city is less than 10,000 people, a reduction to 70% threshold volumes is allowed in the traffic signal warrant, but not in the all-way stop warrant.

5.1.4 Warrant Results Summary

Warrant analysis was performed for following five intersections to determine appropriate intersection control types and under which development phase any intersection control changes should occur:

- 37th Street at Valleyhigh Drive
- 37th Street at RTC West
- 37th Street at RTC East
- RTC South at RTC East
- Valleyhigh Drive at Watson Avenue

Warrant analysis was not performed at the remaining 20 intersections, for the following reasons:

- 12 intersections already operate under traffic signal control
- The 8 remaining intersections all operate at LOS A overall in the AM and PM peak hours through all future scenarios while remaining under stop control. These intersections are not expected to have high enough volumes to meet warrant thresholds.

The full all-way stop warrant and traffic signal warrant analysis for each intersection and development phase can be found in **Appendix C**.

5.1.4.1 37th Street at Valleyhigh Drive

During Phase 1 of the development, there is no planned connection of 37th Street to Valleyhigh Drive. Therefore, this intersection would not yet exist and no warrant analysis for Phase 1 was performed.

During Phase 2, 37th Street is expected to be connected to Valleyhigh Drive. The warrant analysis for Phase 2 tests whether a minor-street stop-controlled intersection would be adequate for Phase 2 or if a different control type would be warranted. The analysis assumed that Valleyhigh Drive maintains 4 lanes of traffic free from control and 37th Street connects as the minor approach of a T intersection. Phase 2 warrants found that the intersection meets all-way stop and traffic signal warrants. Due to high volumes on Valleyhigh Drive, an all-way stop is not preferred at the study intersection. Therefore, either a traffic signal or roundabout would be warranted and should be evaluated when the connection of 37th Street to Valleyhigh Drive is made in Phase 2 of the development.

A Phase 3 warrant analysis was performed. This analysis tests the proposed layout of squaring up the intersection. Under the proposed layout, the eastbound and northbound approaches are squared up such that the intersection no longer occurs on a curve. The eastbound approach was considered the minor approach with the northbound and southbound approaches being the major approaches. All-way stop and traffic signal warrants were met for Phase 3 under the new orientation.

Based on the MnMUTCD guidance, the Phase 2 warrant analysis of 37th Street at Valleyhigh Drive included removal of 100% of right turning vehicles from the minor approach. Based on the MnMUTCD guidance, the analysis of Valleyhigh Drive at Watson Avenue includes the reduction to 70% of the volume thresholds because the posted speed limit on Valleyhigh Drive is 45 mph.

Table 10 provides the 37th Street at Valleyhigh Drive all-way stop and traffic signal warrant summaries for Phase 2 and Phase 3 Build conditions.

Table 10 – 37th St at Valleyhigh Dr, Warrant Analysis Results Summary

Year	All-Way Stop Warrant	Traffic Signal Warrants		
		Warrant #1 8 Hour	Warrant #2 4 Hour	Warrant #3 Peak Hour
Phase 1 (Year 2027)	*Intersection does not exist in this phase of development.*			
Phase 2 (Year 2028)	**MET**	**MET**	**MET**	Not Met
	13 of 8 hours	**9 of 8 hours**	**4 of 4 hours**	0 of 1 hour
Phase 3 (Year 2029)	**MET**	**MET**	**MET**	**MET**
	13 of 8 hours	**12 of 8 hours**	**9 of 4 hours**	**3 of 1 hour**

5.1.4.2 37th Street at RTC West

Based on warrant evaluation using Phase 1, Phase 2, and Phase 3 Build conditions, the 37th Street at RTC West intersection does not meet all-way stop warrant or signal warrant volume thresholds in any development phase. Therefore, the intersection should remain minor-street stop-controlled with stop control on the northbound and southbound approaches of the intersection. It should be noted that the intersection does not experience background traffic growth as the intersection is internal to the development. The volumes in the Horizon Year scenario are therefore the same at Phase 3 volumes and the intersection is not expected to meet warrants under Horizon Year conditions as well.

Based on the MnMUTCD guidance, the analysis of 37th Street at RTC West includes removal of 100% of the right turning traffic on the minor approaches.

Table 11 provides the 37th Street at RTC West all-way stop and traffic signal warrant summaries for development Phase 1, Phase 2, and Phase 3.

Table 11 – 37th St at RTC West, Warrant Analysis Results Summary

Year	All-Way Stop Warrant	Traffic Signal Warrants		
		Warrant #1 8 Hour	Warrant #2 4 Hour	Warrant #3 Peak Hour
Phase 1 (Year 2027)	Not Met	Not Met	Not Met	Not Met
	0 of 8 hours	0 of 8 hours	0 of 4 hours	0 of 1 hour
Phase 2 (Year 2028)	Not Met	Not Met	Not Met	Not Met
	4 of 8 hours	0 of 8 hours	0 of 4 hours	0 of 1 hour
Phase 3 (Year 2029)	Not Met	Not Met	Not Met	Not Met
	4 of 8 hours	1 of 8 hours	0 of 4 hours	0 of 1 hour

5.1.4.3 37th Street at RTC East

The 37th Street at RTC East intersection does not meet all-way stop warrant or signal warrant volume thresholds under Phase 1 or Phase 2 conditions. During Phase 3 of the development, the intersection meets all-way stop and signal warrant volume thresholds. Therefore, the intersection should be considered for conversion to a signalized intersection in Phase 3 of the development.

Based on the MnMUTCD guidance, the warrant analysis of the 37th Street at RTC East intersection includes removal of 50% of the right turning traffic on the northbound minor approach. This is due to the high of minor street right turn and major street through volumes.

Table 12 provides the 37th Street at RTC East all-way stop and traffic signal warrant summaries for development Phase 1, Phase 2, and Phase 3.

Table 12 – 37th St at RTC East, Warrant Analysis Results Summary

Year	All-Way Stop Warrant	Traffic Signal Warrants		
		Warrant #1 8 Hour	Warrant #2 4 Hour	Warrant #3 Peak Hour
Phase 1 (Year 2027)	Not Met	Not Met	Not Met	Not Met
	6 of 8 hours	2 of 8 hours	0 of 4 hours	0 of 1 hour
Phase 2 (Year 2028)	Not Met	Not Met	Not Met	Not Met
	7 of 8 hours	5 of 8 hours	3 of 4 hours	0 of 1 hour
Phase 3 (Year 2029)	**MET**	**MET**	**MET**	**MET**
	12 of 8 hours	**9 of 8 hours**	**8 of 4 hours**	**2 of 1 hour**

5.1.4.4 RTC South at RTC East

The RTC South at RTC East intersection does not meet all-way stop warrant or signal warrant volume thresholds under Phase 1 or Phase 2 conditions. During Phase 3 of the development the intersection meets all-way stop warrant volume thresholds but does not meet signal warrants volume thresholds. Therefore, the intersection should be considered for either an all-way stop or roundabout intersection in Phase 3 of the development. A mini-roundabout design is expected to operate with a lower delay than all-way stop control and is the preferred alternative.

Based on the MnMUTCD guidance, the analysis of RTC South at RTC East includes removal of 100% of the right turning traffic on the minor approaches.

Table 13 provides the RTC South at RTC East all-way stop and traffic signal warrant summaries for development Phase 1, Phase 2, and Phase 3.

Table 13 – RTC South at RTC East, Warrant Analysis Results Summary

Year	All-Way Stop Warrant	Traffic Signal Warrants		
		Warrant #1 8 Hour	Warrant #2 4 Hour	Warrant #3 Peak Hour
Phase 1 (Year 2027)	Not Met	Not Met	Not Met	Not Met
	0 of 8 hours	0 of 8 hours	0 of 4 hours	0 of 1 hour
Phase 2 (Year 2028)	Not Met	Not Met	Not Met	Not Met
	0 of 8 hours	0 of 8 hours	0 of 4 hours	0 of 1 hour
Phase 3 (Year 2029)	**MET**	Not Met	Not Met	Not Met
	11 of 8 hours	1 of 8 hours	2 of 4 hours	0 of 1 hour

5.1.4.5 Valleyhigh Drive at Watson Avenue

The Valleyhigh Drive at Watson Avenue intersection does not meet all-way stop warrant or signal warrant volume thresholds under Phase 1 conditions. During Phase 2 of the development, the

intersection meets all-way stop warrant volumes thresholds but does not meet signal warrants volume thresholds. Given the existing lane configuration, presence of a median, traffic volumes and vehicle speeds, it is not recommended to convert the intersection to all-way stop control during Phase 2 of the development. During Phase 3 of the development, the intersection meets all-way stop and signal warrants volume thresholds. The intersection should be considered for conversion to a traffic signal in Phase 3 of the development.

Based on the MnMUTCD guidance, the analysis of Valleyhigh Drive at Watson Avenue includes the reduction to 70% of the volume thresholds because the posted speed limit on Valleyhigh Drive is 45 mph. Based on the MnMUTCD guidance, the analysis of Valleyhigh Drive at Watson Avenue includes removal of 100% of the right turning traffic on the minor approaches.

Table 14 provides the Valleyhigh Drive at Watson Avenue all-way stop and traffic signal warrant summaries for development Phase 1, Phase 2, and Phase 3.

Table 14 – Valleyhigh Drive at Watson Avenue, Warrant Analysis Results Summary

Year	All-Way Stop Warrant	Traffic Signal Warrants		
		Warrant #1 8 Hour	Warrant #2 4 Hour	Warrant #3 Peak Hour
Phase 1 (Year 2027)	Not Met	Not Met	Not Met	Not Met
	4 of 8 hours	5 of 8 hours	2 of 4 hours	0 of 1 hour
Phase 2 (Year 2028)	**MET**	Not Met	Not Met	Not Met
	8 of 8 hours	7 of 8 hours	3 of 4 hours	0 of 1 hour
Phase 3 (Year 2029)	**MET**	**MET**	**MET**	**MET**
	12 of 8 hours	**11 of 8 hours**	**9 of 4 hours**	**2 of 1 hour**

6 Traffic Operational Analysis

Traffic operational analyses were conducted to determine the delay, level of service (LOS), and queuing information for the AM and PM peak hours for scenarios analyzing Existing (2024), Phase 1 (Year 2027), Phase 2 (Year 2028), Phase 3 (Year 2029), and Horizon year (Year 2045) conditions.

Phase 1 (Year 2027) is the only analysis year that has No Build scenarios. As described in section 3.1.1, as the city has no plans to connect 37th Street to Valleyhigh Drive without this project, No Build conditions are not valuable to analyze for scenarios with the 37th Street connection. Phase 1 is the only phase where 37th Street is not connected to Valleyhigh Drive. The two No Build scenarios evaluated for this forecast year are described as follows:

- No Build 2027 – This scenario assumes that 37th Street is not connected to Valleyhigh Drive. As the existing tech campus is not operating at full capacity, first, existing trips to and from the Tech Campus were removed. Background growth was applied to the network to bring background traffic from 2024 to 2027 levels based on growth rates derived from the Travel Demand Model. Then, trips were added to the model based on trip generations and trip distributions for the existing tech campus under full operation.
- Mitigated No Build 2027 – This scenario makes provides mitigations to the No Build 2027 network to mitigate LOS, volume to capacity ratio, or queueing problems that violate Rochester's Traffic Service Standards. These are mitigations that are expected to be necessary based on background growth only, and not the proposed development.

Phase 1 (Year 2027), Phase 2 (Year 2028), Phase 3 (Year 2029), and the Horizon year (Year 2045) each have Build and Mitigated Build scenarios, detailed below:

- Build – These scenarios add development traffic volumes to the network based on trip generation and trip distributions for the development phase and corresponding build year. Background growth was applied to the network to bring background traffic from 2024 to the corresponding analysis year based on growth rates derived from the Travel Demand Model. In Phase 2, Phase 3, and Horizon Year scenarios, background traffic was shifted to utilize the 37th Street connection according to observations from the TDM.
  - For Phase 1, the Build scenario uses the same geometrics, mitigations, and signal timings as the 2027 Mitigated No Build scenario.
  - For Phase 2, Phase3, and the Horizon Year scenarios, the Build scenario utilizes the same geometrics, mitigations, and signal timing changes as the previous phase's Mitigated Build scenario without any additional mitigations or signal timing changes.
- Mitigated Build – The Mitigated Build scenarios have geometric changes and signal timing changes needed to bring the network into compliance with Rochester's traffic Service Standards.

The microsimulation analysis was conducted in Synchro/SimTraffic 11 to determine operating characteristics and maximum vehicle queuing for each peak hour. To evaluate any proposed roundabouts, the Highway Capacity Software (HCS) Version 2023, which utilizes techniques from the Highway Capacity Manual (HCM), was used to report delay and LOS results.

In the following Traffic Operations Analysis tables, the highest 95th percentile queue for each approach is reported. This queue could be a left turn, through, or right turn queue. Red

highlighting for a 95th% queue signifies that the queue spills out of available queue storage. Orange highlighting signifies that a through queue extends beyond adjacent turn lane storage, potentially blocking access to one or both adjacent turn lanes. In cases where multiple lanes have queueing concerns, footnotes are utilized. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

The following sections provide the operational results for each study intersection evaluated as part of this evaluation. Each intersection section covers the future No Build and Build scenarios, including any mitigations necessary for each scenario.

6.1 W. Circle Dr at 41st St

The intersection of W. Circle Drive at 41st Street is identified as intersection 1 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under Existing and No build 2027 conditions the intersection does not meet the Rochester Traffic Service Standards for queueing or volume to capacity ratios (V/C).

- Under existing conditions, PM 95th percentile westbound left queues spill out of the storage lane, extending to 372 feet out of an available 290 feet of storage. This would result in westbound left vehicles blocking westbound through vehicles in the adjacent through lane, causing inefficiencies. Under existing PM conditions, the westbound left turn volume is 363 vehicles, this is generally considered high for a single lane left turn, with a V/C ratio of 0.88 under existing signal timings.
- Under No Build 2027 conditions, the PM 95th percentile westbound left queue spills out of the lane, extending to 456 feet out of an available 290 feet, blocking through vehicles in the adjacent lane. Westbound 95th percentile through queues extend to 550 feet, this would block access to the left turn lane, causing inefficiencies. Under No Build 2027 PM conditions, the west left turn volume is 392 vehicles, this is high for a single lane left turn with a V/C ratio of 0.99 under existing signal timings.

To mitigate the queueing and V/C ratio concerns in the No Build 2027 model, dual westbound left lanes were included at the intersection. The dual westbound left lane was modeled in all future scenarios after the No Build 2027 Mitigated scenario. It should be noted that with the plan to connect 37th Street to Valleyhigh Drive in Phase 2 of the development, westbound left volumes are expected to be reduced as some vehicles choose routes utilizing the new connection on 37th Street instead of 41st Street. In the Phase 2 Build Scenario, the PM westbound left volume is reduced to 197 vehicles, which could be serviced by a single left turn lane.

Under Phase 1 and Phase 2, the intersection operates acceptably with no further mitigations required to keep the intersection in compliance with Rochester's Traffic Service Standards.

Under Phase 3 conditions northbound left volumes are forecasted to be 298 vehicles in the PM peak hour. This is considered relatively high for a single lane left turn lane. As background volumes continue to grow, in the Horizon Year scenario northbound left volumes are forecasted to be 401 vehicles in the PM peak hour, which is considered high for a single left turn lane. Under 2045 Build conditions it is not possible to keep the northbound left movement V/C ratio at 0.8 or lower without dual northbound left lanes. As any geometric mitigations needed in the Horizon Year are required at full build out (Phase 3), dual northbound left turn lanes were included in the Mitigated Phase 3 scenario.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C or better in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 15, 16, 17, and 18 detail the traffic operations and queueing results for W. Circle Drive at 41st Street through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 15 – W. Circle Dr at 41st St – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBT	53.2 / D	19.2 / B	EBT	54.6 / D	25.0 / C
	WB	WBL	41.6 / D		WBL	49.8 / D	
	NB	NBL	15.2 / B		NBL	24.2 / C	
	SB	SBT	16.4 / B		SBL	34.2 / C	
No Build (Year 2027)	EB	EBT	54.2 / D	22.5 / C	EBT	**57.2 / E**	31.7 / C
	WB	WBL	42.4 / D		WBL	**77.0 / E**	
	NB	NBL	18.6 / B		NBL	28.9 / C	
	SB	SBT	19.3 / B		SBL	35.2 / D	
Mitigated No Build (Year 2027)	EB	EBT	51.1 / D	19.4 / B	EBT	**55.4 / E**	24.1 / C
	WB	WBL	38.3 / D		WBL	43.4 / D	
	NB	NBL	13.0 / B		NBL	20.6 / C	
	SB	SBL	18.3 / B		SBL	31.0 / C	
Build (Year 2027)	EB	EBT	53.6 / D	20.3 / C	EBT	**55.3 / E**	24.2 / C
	WB	WBL	38.4 / D		WBL	43.6 / D	
	NB	NBL	14.5 / B		NBL	22.1 / C	
	SB	SBL	17.1 / B		SBL	33.2 / C	
Mitigated Build (Year 2027)	EB	EBT	53.6 / D	19.7 / B	EBT	**56.5 / E**	24.5 / C
	WB	WBL	37.4 / D		WBL	43.7 / D	
	NB	NBL	13.4 / B		NBL	21.1 / C	
	SB	SBL	18.6 / B		SBL	33.2 / C	

Table 16 – W. Circle Dr at 41st St – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	134	944	EBT	119	944
	WB	WBL	201	290	**WBL**	**372**	**290**
	NB	NBT	80	1200	NBL	138	330
	SB	SBT	177	922	SBT	215	922
No Build (Year 2027)	EB	EBT	176	944	EBT	170	944
	WB	WBL	200	290	**WBL[1]**	**456**	**290**
	NB	NBT	88	1200	NBL	174	330
	SB	SBT	189	922	SBT	216	922
Mitigated No Build (Year 2027)	EB	EBT	185	944	EBT	157	944
	WB	WBL	113	290	WBL	205	290
	NB	NBR	71	325	NBL	153	330
	SB	SBT	185	922	SBT	200	922
Phase 1 Build (Year 2027)	EB	EBT	173	944	EBT	166	944
	WB	WBL	123	290	WBL	217	290
	NB	NBR	82	325	NBL	160	330
	SB	SBT	188	922	SBT	207	922
Phase 1 Mitigated Build (Year 2027)	EB	EBT	176	944	EBT	164	944
	WB	WBL	116	290	WBL	219	290
	NB	NBR	80	325	NBL	161	330
	SB	SBT	178	922	SBT	207	922

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage.

Table 17 – W. Circle Dr at 41st St – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	51.2 / D	17.9 / B	EBT	51.5 / D	21.7 / C
	WB	WBL	42.0 / D		WBL	39.8 / D	
	NB	NBL	12.2 / B		NBL	20.0 / C	
	SB	SBL	13.2 / B		SBL	28.2 / C	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	43.1 / D	23.3 / C	EBL	54.5 / D	29.7 / C
	WB	WBL	37.6 / D		WBL	**59.7 / E**	
	NB	NBL	**63.5 / E**		NBL	**61.5 / E**	
	SB	SBL	**57.3 / E**		SBT	31.7 / C	
Phase 3 Build (Year 2029)	EB	EBT	43.3 / D	23.8 / C	EBL	53.2 / D	29.3 / C
	WB	WBL	35.5 / D		WBL	**60.4 / E**	
	NB	NBL	**64.0 / E**		NBL	**57.9 / E**	
	SB	SBL	54.8 / D		SBT	32.2 / C	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	44.6 / D	23.3 / C	EBL	53.9 / D	25.8 / C
	WB	WBL	52.7 / D		WBL	58.9 / E	
	NB	NBL	53.2 / D		NBL	29.0 / C	
	SB	SBL	**59.2 / E**		SBT	30.1 / C	
Horizon Build (Year 2045)	EB	EBL	54.6 / D	27.1 / C	EBL	**57.9 / E**	31.7 / C
	WB	WBL	50.0 / D		WBL	**56.5 / E**	
	NB	NBL	53.5 / D		NBL	35.1 / D	
	SB	SBL	**60.2 / E**		SBT	36.2 / D	
Horizon Mitigated Build (Year 2045)	EB	EBT	38.6 / D	26.6 / C	EBL	51.3 / D	31.5 / C
	WB	WBL	33.3 / C		WBL	**58.5 / E**	
	NB	NBL	**64.9 / E**		NBL	47.2 / D	
	SB	SBL	**62.1 / E**		SBT	38.2 / D	

Table 18 – W. Circle Dr at 41st St – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	166	944	EBT	151	944
	WB	WBT	90	1236	WBT	175	1236
	NB	NBL	82	330	NBL	185	330
	SB	SBT	163	922	SBT	209	922
Phase 2 Mitigated Build (Year 2028)	EB	EBT	158	944	EBT	152	944
	WB	WBT	78	1236	WBT	179	1236
	NB	NBL	157	330	NBL	313	330
	SB	SBT	189	922	SBT	224	922
Phase 3 Build (Year 2029)	EB	EBT	163	944	EBT	152	944
	WB	WBT	81	1236	WBT	184	1236
	NB	NBL	173	330	NBL	297	330
	SB	SBT	208	922	SBT	240	922
Phase 3 Mitigated Build (Year 2029)	EB	EBT	150	944	EBT	167	944
	WB	WBT	76	1236	WBT	192	1236
	NB	NBL	112	330	NBL	160	330
	SB	SBT	179	922	SBT	224	922
Horizon Build (Year 2045)	EB	EBT	231	944	EBT	307	944
	WB	WBT	134	1236	WBT	305	1236
	NB	NBL	129	330	NBL	216	330
	SB	SBT	210	922	SBT	245	922
Horizon Mitigated Build (Year 2045)	EB	EBT	222	944	EBT	288	944
	WB	WBT	128	1236	WBT	264	1236
	NB	NBL	132	330	NBL	197	330
	SB	SBT	223	922	SBT	233	922

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – W Circle Dr at 41st St

The following mitigation should be made regardless of development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- Install dual westbound left turn lane

Development Phase 1 and Phase 2 do not require additional mitigations. The following mitigations should be made with Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- Install dual northbound left lane

See **Appendix E** for the proposed intersection layout of W Circle Drive at 41st Street.

6.2 41st St at NW Multi-Family Access

The intersection of 41st Street at the NW Multi-Family Access is identified as intersection 2 in **Figure 1**. This intersection does not currently exist and is proposed to be constructed in Build Phase 1. It is proposed as a minor-street stop-controlled intersection with stop control on the northbound approach.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS C or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 19, 20 21, and 22 detail the traffic operations and queueing results for 41st Street at NW Multi-Family Access through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 19 – 41st St at NW Multi-Family Access – Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Build (Year 2027)	EB	EBR	2.4 / A	1.8 / A	EBT	1.9 / A	1.8 / A
	WB	WBL	5.5 / A		WBL	5.9 / A	
	NB	NBL	11.1 / B		NBL	16.5 / C	
Mitigated Build (Year 2027)	EB	EBR	2.5 / A	1.7 / A	EBT	2.0 / A	1.8 / A
	WB	WBL	4.2 / A		WBL	6.4 / A	
	NB	NBL	10.1 / B		NBL	19.0 / C	

Table 20 – 41st St at NW Multi-Family Access – Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 1 Build (Year 2027)	EB	EBT	0	1344	EBT	0	1344
	WB	WBT	20	721	WBT	40	721
	NB	NBT	46	501	NBT	41	501
Phase 1 Mitigated Build (Year 2027)	EB	EBT	0	1000	EBT	0	1000
	WB	WBT	20	721	WBT	37	721
	NB	NBT	46	501	NBT	44	501

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 21 – 41st St at NW Multi-Family Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	2.5 / A	2.0 / A	EBR	2.1 / A	1.4 / A
	WB	WBL	3.8 / A		WBL	4.7 / A	
	NB	NBL	8.0 / A		NBL	10.6 / B	
Phase 2 Mitigated Build (Year 2028)	EB	EBR	3.4 / A	1.9 / A	EBT	2.0 / A	1.4 / A
	WB	WBL	3.6 / A		WBL	4.5 / A	
	NB	NBL	7.3 / A		NBL	9.8 / A	
Phase 3 Build (Year 2029)	EB	EBR	2.7 / A	1.9 / A	EBT	1.9 / A	1.4 / A
	WB	WBL	3.0 / A		WBL	3.8 / A	
	NB	NBL	7.9 / A		NBL	8.3 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	2.5 / A	2.0 / A	EBT	2.1 / A	1.5 / A
	WB	WBL	3.3 / A		WBL	4.2 / A	
	NB	NBL	7.6 / A		NBL	10.6 / B	
Horizon Build (Year 2045)	EB	EBR	3.5 / A	2.4 / A	EBR	3.5 / A	2.4 / A
	WB	WBL	6.2 / A		WBL	4.8 / A	
	NB	NBL	8.7 / A		NBL	14.9 / B	
Horizon Mitigated Build (Year 2045)	EB	EBT	3.1 / A	2.4 / A	EBT	3.3 / A	2.3 / A
	WB	WBL	5.0 / A		WBL	4.9 / A	
	NB	NBL	9.0 / A		NBL	12.7 / B	

Table 22 – 41st St at NW Multi-Family Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	20	1236	EBT	20	1236
	WB	WBT	20	721	WBT	20	721
	NB	NBT	41	501	NBT	33	501
Phase 2 Mitigated Build (Year 2028)	EB	EBT	20	1236	EBT	-	1236
	WB	WBT	20	721	WBT	20	721
	NB	NBT	42	501	NBT	34	501
Phase 3 Build (Year 2029)	EB	EBT	-	1236	EBT	-	1236
	WB	WBT	20	721	WBT	21	721
	NB	NBT	41	501	NBT	33	501
Phase 3 Mitigated Build (Year 2029)	EB	EBT	-	1236	EBT	-	1236
	WB	WBT	20	721	WBT	24	721
	NB	NBT	39	501	NBT	33	501
Horizon Build (Year 2045)	EB	EBT	20	1236	EBT	20	1236
	WB	WBT	20	721	WBT	38	721
	NB	NBT	41	501	NBT	36	501
Horizon Mitigated Build (Year 2045)	EB	EBT	-	1236	EBT	-	1236
	WB	WBT	20	721	WBT	24	721
	NB	NBT	42	501	NBT	35	501

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 41st St at NW Multi-Family Access

In Phase 1, the intersection should be constructed as a new minor-street stop-controlled intersection. The northbound approach would have a single shared left/right lane operating under stop control. The eastbound approach would have a through lane and a shared through-right lane. The westbound approach would be a shared through-left lane. No mitigations beyond the initial construction are necessary in any future phase.

6.3 41st St at 31st Ave/RTC West

The intersection of 41st Street at 31st Avenue/RTC West is identified as intersection 3 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under No Build 2027, Phase 1, and Phase 2 conditions the intersection operates acceptably and within Rochester's Traffic Service Standards without any need for further mitigations.

During Phase 3, the southbound left lane is restriped to extend the lane storage from 100 feet to 150 feet. While southbound left 95th percentile queues do not exceed available storage in the

Build 2029 scenario, the lane is extended in the Phase 3 Mitigated Build scenario to ensure that there is enough storage through the 2045 Horizon Year scenario.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B or better in each scenario and all turning movements operate at LOS C or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 23, 24, 25, and 26 detail the traffic operations and queueing results for 41st Street at 31st Avenue/RTC West through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 23 – 41st St at 31st Ave/RTC West – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	11.4 / B	9.3 / A	EBL	14.9 / B	14.4 / B
	WB	WBL	11.3 / B		WBL	15.1 / B	
	NB	NBT	16.9 / B		NBT	20.2 / C	
	SB	SBT	17.4 / B		SBT	24.0 / C	
No Build (Year 2027)	EB	EBL	10.4 / B	8.5 / A	EBL	14.0 / B	14.1 / B
	WB	WBL	11.7 / B		WBT	15.5 / B	
	NB	NBT	18.6 / B		NBT	19.9 / B	
	SB	SBT	20.0 / C		SBT	30.4 / C	
Mitigated No Build (Year 2027)	EB	EBL	10.7 / B	8.5 / A	EBL	20.2 / C	13.0 / B
	WB	WBL	11.9 / B		WBL	22.3 / C	
	NB	NBT	19.1 / B		NBT	17.5 / B	
	SB	SBT	19.2 / B		SBT	27.7 / C	
Phase 1 Build (Year 2027)	EB	EBL	12.3 / B	9.6 / A	EBL	21.1 / C	13.4 / B
	WB	WBL	13.0 / B		WBL	20.6 / C	
	NB	NBT	21.0 / C		NBT	17.4 / B	
	SB	SBT	23.0 / C		SBT	27.7 / C	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	12.0 / B	9.5 / A	EBL	21.2 / C	13.9 / B
	WB	WBL	12.5 / B		WBL	21.2 / C	
	NB	NBT	22.5 / C		NBT	18.5 / B	
	SB	SBT	22.0 / C		SBT	28.3 / C	

Table 24 – 41st St at 31st Ave/RTC West – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	92	1212	EBT	146	1212
	WB	WBT	116	1336	WBT	169	1336
	NB	NBL	50	130	NBT	107	597
	SB	SBL	79	100	SBT	110	906
No Build (Year 2027)	EB	EBT	94	1212	EBT	148	1212
	WB	WBT	117	1336	WBT	190	1336
	NB	NBL	60	130	NBL	124	130
	SB	SBL	74	100	SBT	102	906
Mitigated No Build (Year 2027)	EB	EBT	92	1212	EBT	146	1212
	WB	WBT	102	1336	WBT	180	1336
	NB	NBL	54	130	NBL	128	130
	SB	SBL	77	100	SBT	98	906
Phase 1 Build (Year 2027)	EB	EBT	101	1212	EBT	150	1212
	WB	WBT	112	1336	WBT	182	1336
	NB	NBL	67	130	NBL	124	130
	SB	SBL	75	100	SBT	102	906
Phase 1 Mitigated Build (Year 2027)	EB	EBT	100	1212	EBT	159	1212
	WB	WBT	115	1336	WBT	189	1336
	NB	NBL	69	130	NBL	124	130
	SB	SBT	81	906	SBT	112	906

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 25 – 41st St at 31st Ave/RTC West – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	10.9 / B	8.6 / A	EBL	16.9 / B	11.6 / B
	WB	WBL	11.5 / B		WBL	17.2 / B	
	NB	NBT	19.1 / B		NBT	12.8 / B	
	SB	SBT	16.0 / B		SBT	19.4 / B	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	11.5 / B	8.8 / A	EBT	14.1 / B	13.5 / B
	WB	WBL	12.7 / B		WBL	14.0 / B	
	NB	NBT	20.3 / C		NBT	14.8 / B	
	SB	SBT	15.6 / B		SBT	23.6 / C	
Phase 3 Build (Year 2029)	EB	EBL	10.9 / B	8.5 / A	EBL	14.0 / B	13.1 / B
	WB	WBL	11.2 / B		WBL	15.2 / B	
	NB	NBT	18.9 / B		NBL	14.6 / B	
	SB	SBT	16.6 / B		SBT	21.3 / C	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	10.2 / B	8.4 / A	EBT	13.9 / B	13.4 / B
	WB	WBL	11.6 / B		WBL	15.3 / B	
	NB	NBT	18.5 / B		NBT	15.5 / B	
	SB	SBT	15.0 / B		SBT	22.9 / C	
Horizon Build (Year 2045)	EB	EBL	11.3 / B	9.2 / A	EBL	15.7 / B	15.1 / B
	WB	WBL	12.8 / B		WBT	17.4 / B	
	NB	NBT	20.8 / C		NBT	16.4 / B	
	SB	SBL	15.3 / B		SBT	26.4 / C	
Horizon Mitigated Build (Year 2045)	EB	EBL	11.2 / B	9.0 / A	EBL	15.0 / B	14.5 / B
	WB	WBL	12.7 / B		WBT	16.5 / B	
	NB	NBT	19.5 / B		NBT	16.2 / B	
	SB	SBT	16.5 / B		SBT	23.9 / C	

Table 26 – 41st St at 31st Ave/RTC West – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBR	90	135	EBT	108	1212
	WB	WBT	74	1336	WBT	131	1336
	NB	NBT	66	597	NBT	94	597
	SB	SBL	76	100	SBT	94	906
Phase 2 Mitigated Build (Year 2028)	EB	EBR	82	135	EBT	113	1212
	WB	WBT	73	1336	WBT	140	1336
	NB	NBT	63	597	NBT	105	597
	SB	SBL	77	100	SBT	103	906
Phase 3 Build (Year 2029)	EB	EBR	82	135	EBT	115	1212
	WB	WBT	76	1336	WBT	133	1336
	NB	NBT	59	597	NBT	96	597
	SB	SBT	74	906	SBT	103	906
Phase 3 Mitigated Build (Year 2029)	EB	EBR	83	135	EBT	123	1212
	WB	WBT	71	1336	WBT	138	1336
	NB	NBT	60	597	NBT	105	597
	SB	SBL	73	150	SBT	107	906
Horizon Build (Year 2045)	EB	EBT	100	1212	EBT	178	1212
	WB	WBT	88	1336	WBT	179	1336
	NB	NBT	70	597	NBT	112	597
	SB	SBT	88	906	SBL	110	150
Horizon Mitigated Build (Year 2045)	EB	EBT	90	1212	EBT	173	1212
	WB	WBT	88	1336	WBT	181	1336
	NB	NBT	67	597	NBT	105	597
	SB	SBT	85	906	SBT	123	906

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 41st St at 31st Ave/RTC West

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 and Phase 2 do not require any mitigations. The following mitigation should be made with Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- Restripe SB approach to extend turn lane storage to 150 ft.

6.4 41st St at W. Frontage Rd/Marketplace Dr

The intersection of 41st Street at W. Frontage Road/Marketplace Drive is identified as intersection 4 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Queueing concerns are present for the eastbound right turning movement under existing conditions and throughout all future scenarios. Under existing conditions, in the PM peak hour, the eastbound right turn lane 95th percentile queue extends to 150 feet out of an available 95 feet of storage. Eastbound right turning vehicles are blocked approximately 35% of the time by eastbound through vehicles, leading to eastbound right queues that spill out past the available queue storage as the turning vehicles are mixed with through vehicles. This is primarily due to the relatively short eastbound right storage length of approximately 95 feet. This existing eastbound right turn lane is difficult to extend due to existing utility poles and challenging topographic slopes. This existing queuing problem for eastbound right turn lane continues through all future modeled scenarios, staying relatively the same throughout the scenarios with 95th percentile queues ranging between 133 and 171 feet out.

Southbound queues also see issues under existing conditions and throughout all future scenarios. Under existing conditions in the PM peak hour. Southbound left queues extend to 282 out of an available 270 feet. This backs up to and spills into the Mayo Clinic 41st Street Professional Building parking lot access. Southbound through and right vehicles use a shared turn lane with 140 feet of storage. This shared lane is often blocked by southbound left turning vehicles, which causes through and left vehicles to mix together, causing some inefficiencies on the approach.

In Phase 2 and beyond, the addition of the 37th Street connection is expected to reduce eastbound and westbound volumes on 41st Street, this frees up signal capacity for the southbound approach. Under Mitigated Phase 2, Phase 3, and Horizon Year scenarios the 95th percentile Southbound queue stays within available queue storage. Southbound through and right vehicles continue to experience some queue blocking from southbound left vehicles. No changes to the southbound approach of the intersection are proposed as no development trips are added to the southbound approach of the intersection, and the connection of 37th Street to Valleyhigh Drive reduces queueing problems compared to the existing scenario.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, and volume to capacity ratios. The overall intersection performs at LOS C or better in each scenario and all turning movements operate at LOS D or better. Volume to Capacity (V/C) ratios are acceptable (0.8 or lower). As discussed above, 95th percentile queueing issues remain similar to or improve upon existing queueing issues.

Tables 27, 28, 29, and 30 detail the traffic operations and queueing results for 41st Street at W. Frontage Road/Marketplace Drive through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 27 – 41st St at W. Frontage Rd/Marketplace Dr – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	16.0 / B	15.5 / B	EBT	31.7 / C	24.7 / C
	WB	WBL	9.3 / A		WBL	20.8 / C	
	NB	NBL	39.6 / D		NBT	47.7 / D	
	SB	SBT	44.1 / D		SBL	40.0 / D	
No Build (Year 2027)	EB	EBL	15.5 / B	15.2 / B	EBT	32.7 / C	25.6 / C
	WB	WBL	9.3 / A		WBL	23.3 / C	
	NB	NBL	41.9 / D		NBT	48.8 / D	
	SB	SBL	44.0 / D		SBL	40.5 / D	
Mitigated No Build (Year 2027)	EB	EBL	16.4 / B	14.9 / B	EBT	31.0 / C	27.6 / C
	WB	WBL	9.0 / A		WBL	27.2 / C	
	NB	NBL	42.5 / D		NBT	46.0 / D	
	SB	SBT	44.0 / D		SBL	46.1 / D	
Phase 1 Build (Year 2027)	EB	EBL	15.4 / B	14.9 / B	EBT	32.4 / C	27.8 / C
	WB	WBL	9.8 / A		WBL	29.3 / C	
	NB	NBT	41.7 / D		NBL	45.7 / D	
	SB	SBL	42.1 / D		SBL	45.7 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	15.6 / B	15.0 / B	EBT	35.5 / D	28.7 / C
	WB	WBL	9.7 / A		WBL	29.4 / C	
	NB	NBL	42.6 / D		NBT	47.9 / D	
	SB	SBT	43.7 / D		SBL	45.2 / D	

Table 28 – 41st St at W. Frontage Rd/Marketplace Dr – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	120	1336	**EBR[1]**	**150**	**95**
	WB	WBT	112	434	WBT	142	434
	NB	NBT	99	272	NBT	174	272
	SB	SBL	128	270	**SBL[2]**	**282**	**270**
No Build (Year 2027)	EB	EBT	119	1336	**EBR[1]**	**155**	**95**
	WB	WBT	87	434	WBL	139	435
	NB	NBT	97	272	NBT	183	272
	SB	SBL	122	270	**SBT[2]**	**202**	**140**
Mitigated No Build (Year 2027)	EB	EBT	121	1336	**EBR[1]**	**143**	**95**
	WB	WBT	83	433	WBT	144	433
	NB	NBT	104	272	NBT	170	272
	SB	SBL	113	270	**SBL[2]**	**297**	**270**
Phase 1 Build (Year 2027)	EB	EBT	126	1336	**EBR[1]**	**149**	**95**
	WB	WBT	95	433	WBL	163	435
	NB	NBT	107	272	NBT	175	272
	SB	SBL	111	270	**SBL[2]**	**274**	**270**
Phase 1 Mitigated Build (Year 2027)	EB	EBT	132	1336	**EBR[1]**	**171**	**95**
	WB	WBT	86	433	WBL	155	435
	NB	NBT	101	272	NBT	194	272
	SB	SBL	105	270	**SBL[2]**	**282**	**270**

XXX – 95th% queues exceed available storage

XXX – 95th% through queue exceeds adjacent turn lane storage

[1] EBT 95th percentile queues also extend past EBR storage

[2] 95th percentile queues extend past available storage for both SBL and SBT lanes

Table 29 – 41st St at W. Frontage Rd/Marketplace Dr – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	16.5 / B	16.3 / B	EBT	28.9 / C	25.5 / C
	WB	WBL	10.5 / B		WBL	24.0 / C	
	NB	NBL	40.7 / D		NBL	47.8 / D	
	SB	SBT	43.6 / D		SBT	47.4 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	13.9 / B	15.3 / B	EBT	34.5 / C	25.9 / C
	WB	WBL	10.9 / B		WBL	21.8 / C	
	NB	NBL	43.3 / D		NBT	49.1 / D	
	SB	SBT	39.3 / D		SBT	42.5 / D	
Phase 3 Build (Year 2029)	EB	EBL	15.8 / B	15.6 / B	EBT	32.8 / C	25.6 / C
	WB	WBL	11.4 / B		WBL	22.4 / C	
	NB	NBL	42.1 / D		NBL	46.7 / D	
	SB	SBT	38.9 / D		SBL	42.4 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	16.1 / B	15.5 / B	EBT	33.6 / C	25.4 / C
	WB	WBL	10.8 / B		WBL	22.4 / C	
	NB	NBL	41.1 / D		NBT	48.4 / D	
	SB	SBT	39.1 / D		SBL	41.6 / D	
Horizon Build (Year 2045)	EB	EBL	16.3 / B	15.0 / B	EBT	36.2 / D	26.5 / C
	WB	WBL	10.9 / B		WBL	24.9 / C	
	NB	NBL	41.2 / D		NBT	48.8 / D	
	SB	SBT	38.5 / D		SBL	42.2 / D	
Horizon Mitigated Build (Year 2045)	EB	EBL	14.8 / B	15.3 / B	EBT	42.0 / D	27.9 / C
	WB	WBL	11.7 / B		WBL	25.2 / C	
	NB	NBL	40.8 / D		NBT	48.1 / D	
	SB	SBT	39.3 / D		SBL	42.9 / D	

Table 30 – 41st St at W. Frontage Rd/Marketplace Dr – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	87	1336	**EBR[1]**	**132**	**95**
	WB	WBT	72	433	WBL	148	435
	NB	NBT	99	272	NBT	192	272
	SB	SBL	109	270	**SBL[2]**	**327**	**270**
Phase 2 Mitigated Build (Year 2028)	EB	EBT	85	1336	**EBR[1]**	**152**	**95**
	WB	WBR	77	160	WBL	161	420
	NB	NBT	97	272	NBT	199	272
	SB	SBT	104	140	**SBT**	**208**	**140**
Phase 3 Build (Year 2029)	EB	EBT	87	1336	**EBR[1]**	**137**	**95**
	WB	WBT	71	420	WBL	153	420
	NB	NBT	97	272	NBT	194	272
	SB	SBL	96	270	**SBT**	**205**	**140**
Phase 3 Mitigated Build (Year 2029)	EB	EBT	80	1336	**EBR[1]**	**151**	**95**
	WB	WBT	75	420	WBL	156	420
	NB	NBT	100	272	NBT	202	272
	SB	SBT	104	140	**SBT**	**204**	**140**
Horizon Build (Year 2045)	EB	EBT	96	1336	**EBR[1]**	**161**	**95**
	WB	WBT	82	420	WBL	175	420
	NB	NBT	102	272	NBT	196	272
	SB	SBT	104	140	**SBT**	**210**	**140**
Horizon Mitigated Build (Year 2045)	EB	EBT	106	1336	**EBR[1]**	**166**	**95**
	WB	WBT	81	420	WBL	180	420
	NB	NBT	104	272	NBT	190	272
	SB	SBL	100	270	**SBT**	**206**	**140**

XXX – 95th% queues exceed available storage

XXX – 95th% through queue exceeds adjacent turn lane storage

[1] EBT 95th percentile queues also extend past EBR storage

[2] 95th percentile queues extend past available storage for both SBL and SBT lanes

Proposed Mitigations – 41st St at W. Frontage Rd/Marketplace Dr

The intersection performed acceptably with no proposed mitigations planned beyond signal timing adjustments at the study intersection.

The City is considering recommendations from a 2020 signal timing optimization project to remove split phasing on the northbound and southbound approaches and convert the signal to 8-phase signal operation, as well as eastbound/westbound lead/lag with Flashing yellow arrow capabilities. These signal improvements would be expected to increase efficiency and reduce vehicle delays, but the intersection performed acceptably without these potential changes.

6.5 41st St at SB US 52 Ramp

The intersection of 41st Street at the southbound US 52 Ramp is identified as intersection 5 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

The intersection has queueing and LOS concerns under Existing and No Build 2027 conditions. To comply with Rochester's Traffic Service Standards, a number of intersection improvements were necessary under No Build 2027 conditions. Westbound queueing was an issue in the PM peak hour with 336 vehicles making westbound left turns. This is considered high for a single turn lane, leading to the movement operating at LOS F and queues extending to 356 feet out of an available 190 feet of queue storage. To mitigate this and free up capacity at the intersection, several improvements are proposed:

No Build 2027 Mitigations:

- The westbound left lane would be restriped to have 220 feet of storage with a 60-foot (5 to 1) taper.
  - The westbound left turn lane is back-to-back with the eastbound left turn lane at the NB US 52 ramp intersection. Converting the taper of the turn lanes from 10 to 1 into a 5 to 1 taper allows additional storage to be distributed. The westbound left turn lane's storage is increased from 190 feet to 220 feet.
- A southbound left lane would be added. The southbound approach lane designation would be a left turn lane, a through lane, and a right turn lane.
  - This increases the capacity of the southbound approach, resulting in less green time needed which frees up green time to be added to the westbound left turning movement, resulting in shorter westbound left queues.
- The eastbound right lane would be converted to a channelized right turn with a yield sign.
  - With 653 eastbound right turning vehicles under No Build 2027 conditions, converting the eastbound right turn lane to operate under channelized yield control frees up capacity at the intersection by allowing eastbound right turning vehicles to clear the intersection quicker than a standard right turn on red configuration. This allows more permissive westbound left turns to clear the intersection as well, reducing westbound left queueing.

In Phase 1, the intersection is expected to operate under acceptable conditions. However, under Phase 2 conditions, further mitigation is necessary and a second southbound through lane is proposed to be added. This increases capacity of the southbound approach and allows for more green time for westbound left turn movement to keep westbound left turn queues under 220 feet. No additional mitigations are made in Phase 3 beyond signal timing adjustments.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C or better in each scenario and all turning movements operate at LOS D or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 31, 32, 33, and 34 detail the traffic operations and queueing results for 41st Street at SB US 52 Ramp through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 31 – 41st St at SB US 52 Ramp – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBT	7.4 / A	12.3 / B	EBR	16.8 / B	22.2 / C
	WB	WBL	15.9 / B		WBL	**66.2 / E**	
	SB	SBL	43.3 / D		SBT	51.0 / D	
No Build (Year 2027)	EB	EBT	10.9 / B	18.9 / B	EBR	19.4 / B	27.6 / C
	WB	WBL	21.4 / C		WBL	**93.5 / F**	
	SB	SBT	41.8 / D		SBT	51.7 / D	
Mitigated No Build (Year 2027)	EB	EBR	8.8 / A	15.6 / B	EBT	24.9 / C	19.0 / B
	WB	WBL	17.0 / B		WBL	17.3 / B	
	SB	SBT	37.8 / D		SBL	50.2 / D	
Phase 1 Build (Year 2027)	EB	EBT	9.0 / A	14.8 / B	EBT	25.8 / C	19.6 / B
	WB	WBL	17.2 / B		WBL	18.0 / B	
	SB	SBT	37.3 / D		SBL	50.1 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBT	8.5 / A	14.6 / B	EBT	26.9 / C	19.8 / B
	WB	WBL	17.1 / B		WBL	18.4 / B	
	SB	SBT	37.1 / D		SBT	49.4 / D	

Table 32 – 41st St at SB US 52 Ramp – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	81	450	EBR	317	440
	WB	WBL	164	190	**WBL[1]**	**330**	**190**
	SB	SBT	193	953	SBT	214	953
No Build (Year 2027)	EB	EBR	109	440	EBR	366	440
	WB	**WBL[1]**	**193**	**190**	**WBL[1]**	**356**	**190**
	SB	SBT	354	953	SBT	277	953
Mitigated No Build (Year 2027)	EB	EBR	142	440	EBT	354	450
	WB	WBL	158	220	WBL	207	220
	SB	SBT	321	953	SBT	194	953
Phase 1 Build (Year 2027)	EB	EBR	127	440	EBT	370	450
	WB	WBL	151	220	WBL	208	220
	SB	SBT	301	953	SBT	209	953
Phase 1 Mitigated Build (Year 2027)	EB	EBR	119	440	EBT	408	450
	WB	WBL	154	220	WBL	209	220
	SB	SBT	291	953	SBT	203	953

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage.

Table 33 – 41st St at SB US 52 Ramp – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	9.2 / A	15.5 / B	EBT	34.5 / C	23.0 / C
	WB	WBL	19.4 / B		WBL	19.7 / B	
	SB	SBT	33.8 / C		SBT	48.2 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	9.3 / A	14.3 / B	EBT	28.6 / C	19.8 / B
	WB	WBL	14.5 / B		WBL	16.1 / B	
	SB	SBT	32.7 / C		SBT	45.6 / D	
Phase 3 Build (Year 2029)	EB	EBT	9.3 / A	14.8 / B	EBT	28.4 / C	19.7 / B
	WB	WBL	16.3 / B		WBL	16.7 / B	
	SB	SBT	31.5 / C		SBL	45.3 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	10.3 / B	14.8 / B	EBT	30.0 / C	20.9 / C
	WB	WBL	15.3 / B		WBL	16.5 / B	
	SB	SBT	31.8 / C		SBL	46.0 / D	
Horizon Build (Year 2045)	EB	EBT	10.5 / B	15.0 / B	EBT	32.5 / C	21.5 / C
	WB	WBL	15.6 / B		WBL	16.0 / B	
	SB	SBT	31.5 / C		SBL	46.4 / D	
Horizon Mitigated Build (Year 2045)	EB	EBT	10.4 / B	14.6 / B	EBT	34.3 / C	22.4 / C
	WB	WBL	16.8 / B		WBL	17.7 / B	
	SB	SBL	31.3 / C		SBL	46.7 / D	

Table 34 – 41st St at SB US 52 Ramp – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	122	450	EBT	419	450
	WB	WBL	171	220	**WBL**	**231**	**220**
	SB	SBT	296	953	SBT	249	953
Phase 2 Mitigated Build (Year 2028)	EB	EBT	99	450	EBT	382	450
	WB	WBL	136	220	WBL	214	220
	SB	SBT	219	951	SBT	144	951
Phase 3 Build (Year 2029)	EB	EBT	109	450	EBT	388	450
	WB	WBL	153	220	WBL	215	220
	SB	SBT	224	951	SBT	147	951
Phase 3 Mitigated Build (Year 2029)	EB	EBT	110	450	EBT	386	450
	WB	WBL	153	220	WBL	217	220
	SB	SBT	228	951	SBT	175	951
Horizon Build (Year 2045)	EB	EBT	110	450	EBT	421	450
	WB	WBL	154	220	WBL	212	220
	SB	SBT	220	951	SBT	170	951
Horizon Mitigated Build (Year 2045)	EB	EBT	114	450	EBT	432	450
	WB	WBL	166	220	WBL	215	220
	SB	SBT	211	951	SBT	160	951

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 41st St at SB US 52 Ramp

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- The westbound left lane would be restriped to have 220 feet of storage with a 60-foot (5 to 1) taper.
- A southbound left lane would be added. The southbound approach lane designation would be a left turn lane, a through lane, and a right turn lane.
- The eastbound right lane would be converted to a channelized right turn with a yield sign.

Development Phase 1 does not require additional mitigations. The following mitigations should be made with each development Phase 2 to accommodate the development:

Build Mitigated (Year 2028) – Phase 2

- A second through lane would be added to the southbound approach. The southbound approach would be a left turn lane, two through lanes, and a right turn lane.

Development Phase 3 does not require additional mitigations.

See **Appendix E** for the proposed intersection layout of 41st Street at SB US 52 Ramp.

6.6 41st St at NB US 52 Ramp/E. Frontage Rd

The intersection of 41st Street at NB US 52 Ramp/E Frontage Road is identified as intersection 6 in Figure 1. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

In the Mitigated No Build 2027 scenario, as part of the mitigations of the adjacent intersection of 41st Street at SB US 52 Ramp, turn lane striping adjustments of the back-to-back left turn lanes on the 41st Street interchange bridge were included. The turn lane taper is reduced to a 5 to 1 taper, and the eastbound left turn lane is extended from 230 feet to 250 feet.

No other mitigations beyond signal timing adjustments are made for any future mitigated scenarios as the intersection operates acceptably.

In the Horizon Year Mitigated Build scenario, in the PM peak hour, the 95th percentile westbound through queue extends to 351 feet out of an available 345 feet. Vehicles would extend through the west leg crosswalk but would not block vehicle turning movements at the 41st Street at E. Frontage Road/Maplewood Square Access intersection. Simtraffic simulations show that the westbound queues at maximum length are rolling and clear during the westbound green light phase of the signal timing.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C or better in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage with the exception of westbound through queues in the 2045 Mitigated scenario discussed above. Volume to Capacity ratios are acceptable (0.8 or lower).

Tables 35, 36, 37, and 38 detail the traffic operations and queueing results for 41st Street at NB US 52 Ramp/E. Frontage Road through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 35 – 41st St at NB US 52 Ramp/E. Frontage Rd – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	9.7 / A	13.3 / B	EBL	23.9 / C	16.6 / B
	WB	WBT	7.7 / A		WBT	18.9 / B	
	NB	NBL	42.0 / D		NBL	36.5 / D	
No Build (Year 2027)	EB	EBL	10.8 / B	12.8 / B	EBL	24.9 / C	19.9 / B
	WB	WBT	8.9 / A		WBT	26.8 / C	
	NB	NBL	35.2 / D		NBL	39.0 / D	
Mitigated No Build (Year 2027)	EB	EBL	9.4 / A	8.7 / A	EBL	18.5 / B	16.0 / B
	WB	WBT	7.9 / A		WBT	17.1 / B	
	NB	NBL	18.9 / B		NBL	29.5 / C	
Phase 1 Build (Year 2027)	EB	EBL	11.2 / B	9.0 / A	EBL	18.8 / B	16.6 / B
	WB	WBT	8.7 / A		WBT	18.5 / B	
	NB	NBL	18.4 / B		NBL	30.2 / C	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	10.6 / B	9.3 / A	EBL	19.6 / B	17.1 / B
	WB	WBT	9.0 / A		WBT	19.1 / B	
	NB	NBL	19.1 / B		NBL	30.5 / C	

Table 36 – 41st St at NB US 52 Ramp/E. Frontage Rd – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	69	576	EBL	170	230
	WB	WBT	137	345	WBT	256	345
	NB	NBT	165	625	NBT	159	625
No Build (Year 2027)	EB	EBT	63	576	EBL	185	230
	WB	WBT	141	345	WBT	312	345
	NB	NBT	154	625	NBT	176	625
Mitigated No Build (Year 2027)	EB	EBT	62	576	EBT	259	576
	WB	WBT	119	345	WBT	228	345
	NB	NBT	123	625	NBT	177	625
Phase 1 Build (Year 2027)	EB	EBL	84	250	EBT	275	576
	WB	WBT	138	345	WBT	245	345
	NB	NBT	120	625	NBT	180	625
Phase 1 Mitigated Build (Year 2027)	EB	EBL	79	250	EBT	276	576
	WB	WBT	143	345	WBT	254	345
	NB	NBT	132	625	NBT	175	625

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 37 – 41st St at NB US 52 Ramp/E. Frontage Rd – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	11.0 / B	8.1 / A	EBL	21.4 / C	16.8 / B
	WB	WBT	7.9 / A		WBT	19.2 / B	
	NB	NBL	22.1 / C		NBL	23.3 / C	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	10.9 / B	11.6 / B	EBL	22.0 / C	23.7 / C
	WB	WBT	8.2 / A		WBT	29.5 / C	
	NB	NBL	**47.7 / D**		NBL	**59.0 / E**	
Phase 3 Build (Year 2029)	EB	EBL	10.5 / B	12.4 / B	EBL	21.1 / C	23.4 / C
	WB	WBT	8.6 / A		WBT	28.6 / C	
	NB	NBL	**52.2 / D**		NBL	**61.6 / E**	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	9.9 / A	12.1 / B	EBL	23.4 / C	23.7 / C
	WB	WBT	8.1 / A		WBT	29.0 / C	
	NB	NBL	**52.0 / D**		NBL	**61.2 / E**	
Horizon Build (Year 2045)	EB	EBL	10.7 / B	12.9 / B	EBL	22.0 / C	24.5 / C
	WB	WBT	8.9 / A		WBT	31.6 / C	
	NB	NBL	**50.7 / D**		NBL	**57.4 / E**	
Horizon Mitigated Build (Year 2045)	EB	EBL	11.1 / B	12.9 / B	EBL	22.1 / C	25.1 / C
	WB	WBT	9.2 / A		WBT	32.8 / C	
	NB	NBL	**49.8 / D**		NBL	**59.1 / E**	

Table 38 – 41st St at NB US 52 Ramp/E. Frontage Rd – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBL	78	250	EBT	279	576
	WB	WBT	138	345	WBT	258	345
	NB	NBT	78	625	NBR	245	315
Phase 2 Mitigated Build (Year 2028)	EB	EBL	77	250	EBT	314	576
	WB	WBT	149	345	WBT	332	345
	NB	NBR	94	315	NBR	240	315
Phase 3 Build (Year 2029)	EB	EBL	79	250	EBT	305	576
	WB	WBT	155	345	WBT	332	345
	NB	NBR	100	315	NBR	252	315
Phase 3 Mitigated Build (Year 2029)	EB	EBL	72	250	EBT	313	576
	WB	WBT	149	345	WBT	330	345
	NB	NBT	102	625	NBR	246	315
Horizon Build (Year 2045)	EB	EBL	83	250	EBT	312	576
	WB	WBT	153	345	WBT	341	345
	NB	NBT	106	625	NBR	210	315
Horizon Mitigated Build (Year 2045)	EB	EBL	83	250	EBT	309	576
	WB	WBT	168	345	**WBT**	**351**	**345**
	NB	NBT	107	625	NBR	224	315

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 41st St at NB US 52 Ramp

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- The eastbound left lane would be restriped with 250 feet of storage and a 60-foot taper (5 to 1); in conjunction with changes at the SB US 52 Ramp intersection.

No mitigations are required at the intersection in Phase 1, 2, or 3 of the development.

See **Appendix E** for the proposed intersection layout of 41st Street at NB US 52 Ramp.

6.7 41st St at E. Frontage Rd/Maplewood Sq Access

The intersection of 41st Street and East Frontage Road/Maplewood Square Access is identified as intersection 7 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under Existing and No Build 2027 conditions northbound 95th percentile queues extend beyond available queue storage. Additional storage is proposed as part of the Mitigated No Build scenario. This would involve closing access to the first two parking rows of the Maplewood Square parking lot on the east side of the northbound approach. A concrete divider would be installed to block the existing parking lot row access points resulting in a loss of approximately 16 parking spaces. The Northbound approach lanes would be extended to have 225 feet of storage. While 95th percentile queues may be contained by closing just one parking row, closing two parking rows is recommended to contain all northbound queues at their maximum (100th percentile) length.

No other mitigations beyond signal timing adjustments are made for any future mitigated scenarios as the intersection operates acceptably.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B or better in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 39, 40, 41, and 42 detail the traffic operations and queueing results for 41st Street at E. Frontage Road/Maplewood Square Access through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 39 – 41st St at E. Frontage Rd/Maplewood Sq Access – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	7.1 / A	6.5 / A	EBL	18.1 / B	15.4 / B
	WB	WBL	5.0 / A		WBL	13.2 / B	
	NB	NBL	44.4 / D		NBT	47.9 / D	
	SB	SBL	50.0 / D		SBT	53.3 / D	
No Build (Year 2027)	EB	EBL	6.6 / A	6.0 / A	EBL	16.3 / B	15.8 / B
	WB	WBL	5.0 / A		WBT	12.6 / B	
	NB	NBL	45.3 / D		NBT	47.1 / D	
	SB	SBT	54.2 / D		SBT	52.2 / D	
Mitigated No Build (Year 2027)	EB	EBL	5.6 / A	5.4 / A	EBL	13.6 / B	16.2 / B
	WB	WBL	4.7 / A		WBL	19.2 / B	
	NB	NBL	43.3 / D		NBT	**55.4 / E**	
	SB	SBT	53.0 / D		SBT	51.1 / D	
Phase 1 Build (Year 2027)	EB	EBL	5.7 / A	5.3 / A	EBL	13.6 / B	16.1 / B
	WB	WBL	4.1 / A		WBL	17.4 / B	
	NB	NBL	47.8 / D		NBT	**56.4 / E**	
	SB	SBL	44.6 / D		SBT	54.6 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	5.4 / A	5.3 / A	EBL	14.8 / B	15.7 / B
	WB	WBL	4.3 / A		WBL	17.3 / B	
	NB	NBL	41.6 / D		NBT	49.5 / D	
	SB	SBT	48.0 / D		SBT	48.5 / D	

Table 40 – 41st St at E. Frontage Rd/Maplewood Sq Access – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBL	86	320	EBL	196	320
	WB	WBT	98	457	WBT	201	457
	NB	NBT	54	830	**NBL[1]**	**138**	**95**
	SB	SBL	70	175	SBL	137	175
No Build (Year 2027)	EB	EBL	74	320	EBL	167	320
	WB	WBT	98	457	WBT	204	457
	NB	NBT	51	830	**NBL[1]**	**148**	**95**
	SB	SBL	66	175	SBT	181	809
Mitigated No Build (Year 2027)	EB	EBL	60	320	EBL	161	320
	WB	WBT	82	457	WBT	228	457
	NB	NBT	52	830	NBL	146	225
	SB	SBL	66	175	SBL	117	175
Phase 1 Build (Year 2027)	EB	EBL	63	320	EBL	164	320
	WB	WBT	81	457	WBT	234	457
	NB	NBT	55	830	NBL	145	225
	SB	SBL	64	175	SBL	117	175
Phase 1 Mitigated Build (Year 2027)	EB	EBL	58	320	EBL	172	320
	WB	WBT	81	457	WBT	236	457
	NB	NBT	51	830	NBL	132	225
	SB	SBL	69	175	SBR	129	180

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage.

Table 41 – 41st St at E. Frontage Rd/Maplewood Sq Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	5.8 / A	5.2 / A	EBL	14.1 / B	15.8 / B
	WB	WBL	5.0 / A		WBL	18.5 / B	
	NB	NBL	50.1 / D		NBT	51.3 / D	
	SB	SBT	47.4 / D		SBT	53.3 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	5.5 / A	5.5 / A	EBL	10.3 / B	14.1 / B
	WB	WBL	4.8 / A		WBL	11.8 / B	
	NB	NBL	44.8 / D		NBT	**55.0 / E**	
	SB	SBT	53.3 / D		SBT	51.9 / D	
Phase 3 Build (Year 2029)	EB	EBL	5.7 / A	5.5 / A	EBL	10.5 / B	14.1 / B
	WB	WBL	5.3 / A		WBL	12.1 / B	
	NB	NBL	43.0 / D		NBT	53.1 / D	
	SB	SBL	52.2 / D		SBT	54.1 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	5.8 / A	5.7 / A	EBL	10.7 / B	14.2 / B
	WB	WBL	5.1 / A		WBL	11.8 / B	
	NB	NBL	46.6 / D		NBT	53.7 / D	
	SB	SBT	50.3 / D		SBT	53.6 / D	
Horizon Build (Year 2045)	EB	EBL	5.6 / A	5.1 / A	EBL	9.7 / A	13.4 / B
	WB	WBL	5.1 / A		WBL	14.2 / B	
	NB	NBL	48.8 / D		NBT	54.0 / D	
	SB	SBT	54.4 / D		SBT	**56.2 / E**	
Horizon Mitigated Build (Year 2045)	EB	EBL	5.7 / A	4.8 / A	EBL	10.7 / B	13.6 / B
	WB	WBL	4.2 / A		WBL	13.9 / B	
	NB	NBL	46.5 / D		NBT	50.9 / D	
	SB	SBT	52.8 / D		SBT	53.8 / D	

Table 42 – 41st St at E. Frontage Rd/Maplewood Sq Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBL	71	320	EBL	179	320
	WB	WBT	78	457	WBT	226	457
	NB	NBT	54	830	NBL	129	225
	SB	SBL	66	175	SBR	127	180
Phase 2 Mitigated Build (Year 2028)	EB	EBL	64	320	EBL	141	320
	WB	WBT	97	457	WBT	206	457
	NB	NBL	52	95	NBL	147	225
	SB	SBL	68	175	SBL	126	175
Phase 3 Build (Year 2029)	EB	EBL	68	320	EBL	146	320
	WB	WBT	97	457	WBT	193	457
	NB	NBT	47	830	NBL	155	225
	SB	SBL	74	175	SBR	128	180
Phase 3 Mitigated Build (Year 2029)	EB	EBL	69	320	EBL	148	320
	WB	WBT	102	457	WBT	212	457
	NB	NBT	50	830	NBL	153	225
	SB	SBL	68	175	SBR	134	180
Horizon Build (Year 2045)	EB	EBL	63	320	EBL	132	320
	WB	WBT	101	457	WBT	192	457
	NB	NBT	51	830	NBL	156	225
	SB	SBL	61	175	SBR	114	180
Horizon Mitigated Build (Year 2045)	EB	EBL	62	320	EBL	144	320
	WB	WBT	101	457	WBT	219	457
	NB	NBT	48	830	NBL	144	225
	SB	SBL	51	175	SBR	130	180

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 41st Stat E. Frontage Rd/Maplewood Sq Access

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- The Northbound approach lanes would be extended to 225 feet of storage. This would involve closing access to the first two parking rows of the Maplewood Square parking lot on the east side of the northbound approach. A concrete divider would be installed to block the existing parking lot row access points resulting in a loss of approximately 16 parking spaces.

No mitigations are required at the intersection in Phase 1, 2, or 3 of the development.

See **Appendix E** for the proposed intersection layout of 41st Street at E. Frontage Road/Maplewood Sq Access.

6.8 Marketplace Dr at SE Target Access

The intersection of Marketplace Drive at SE Target Access is identified as intersection 8 in **Figure 1**. This intersection operates under minor-street stop control in the existing conditions and all future scenarios.

The eastbound approach currently has a dedicated left turn lane and dedicated right turn lane. The right turn lane is short with approximately 60 feet of storage. Under Existing, No Build 2027 and Phase 1 conditions, the intersection operates acceptably, in accordance to Rochester's Traffic Service Standards.

Under Phase 2, Phase 3, and Horizon Year Build conditions, 95th percentile eastbound right queue lengths extend out of the storage lane to just over 70 feet. This would cause a mixing of queueing eastbound left and eastbound right vehicles. This is not particularly concerning, as the 95th percentile eastbound left queues are only approximately 100 feet under Horizon Year conditions. These 95th percentile queues would be contained before the first driveway access which is approximately 105 feet back.

Volume to capacity ratios under Horizon Year conditions reach 0.9 for the eastbound turning movements in the PM peak hour, with eastbound movements having LOS E delays. According to Rochester's traffic service standards a 0.9 V/C ratio is acceptable, as Marketplace Drive is not an arterial roadway. No mitigations are proposed in any scenario for this intersection.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS E or better. As discussed above 95th percentile queues are not a concern as spilling out of the short pocket turn lane does not cause operational problems. Volume to capacity ratios are acceptable for the roadway type (0.9 or lower).

Tables 43, 44, 45, and 46 detail the traffic operations and queueing results for Marketplace Drive at SE Target Access through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 43 – Marketplace Dr at SE Target Access – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	5.9 / A	0.7 / A	EBL	20.8 / C	2.6 / A
	NB	NBL	2.4 / A		NBL	4.5 / A	
	SB	SBT	0.2 / A		SBT	0.9 / A	
No Build (Year 2027)	EB	EBL	5.8 / A	0.7 / A	EBL	12.3 / B	1.5 / A
	NB	NBL	2.4 / A		NBL	2.4 / A	
	SB	SBT	0.3 / A		SBT	0.2 / A	
Mitigated No Build (Year 2027)	EB	EBL	5.4 / A	0.7 / A	EBL	12.9 / B	1.5 / A
	NB	NBL	2.4 / A		NBL	2.4 / A	
	SB	SBT	0.2 / A		SBT	0.2 / A	
Phase 1 Build (Year 2027)	EB	EBL	7.0 / A	0.7 / A	EBL	15.7 / C	1.7 / A
	NB	NBL	2.5 / A		NBL	2.6 / A	
	SB	SBT	0.3 / A		SBT	0.3 / A	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	6.4 / A	0.7 / A	EBL	16.2 / C	1.7 / A
	NB	NBL	2.5 / A		NBL	2.6 / A	
	SB	SBT	0.2 / A		SBT	0.3 / A	

Table 44 – Marketplace Dr at SE Target Access – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBR	32	60	EBL	62	410
	NB	NBL	29	200	NBL	79	200
	SB	SBT	-	573	SBT	20	573
No Build (Year 2027)	EB	EBR	32	60	EBL	55	410
	NB	NBL	29	200	NBL	20	200
	SB	SBT	-	573	SBT	-	573
Mitigated No Build (Year 2027)	EB	EBR	33	60	EBL	57	410
	NB	NBL	28	200	NBL	21	200
	SB	SBT	-	573	SBT	-	573
Phase 1 Build (Year 2027)	EB	EBR	34	60	EBL	64	410
	NB	NBL	31	200	NBL	38	200
	SB	SBT	20	510	SBT	-	573
Phase 1 Mitigated Build (Year 2027)	EB	EBR	32	60	EBL	63	410
	NB	NBL	30	200	NBL	39	200
	SB	SBT	20	510	SBT	-	573

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 45 – Marketplace Dr at SE Target Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	5.5 / A	0.6 / A	EBL	**35.8 / E**	3.2 / A
	NB	NBL	2.5 / A		NBL	5.0 / A	
	SB	SBT	0.3 / A		SBT	0.9 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	6.8 / A	0.6 / A	EBL	34.0 / D	3.2 / A
	NB	NBL	2.5 / A		NBL	5.2 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	
Phase 3 Build (Year 2029)	EB	EBL	6.6 / A	0.7 / A	EBL	32.5 / D	3.0 / A
	NB	NBL	2.5 / A		NBL	5.1 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	6.4 / A	0.6 / A	EBL	**41.3 / E**	3.5 / A
	NB	NBL	2.5 / A		NBL	5.4 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	
Horizon Build (Year 2045)	EB	EBL	6.1 / A	0.6 / A	EBL	**40.4 / E**	3.4 / A
	NB	NBL	2.5 / A		NBL	5.8 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	
Horizon Mitigated Build (Year 2045)	EB	EBL	6.5 / A	0.7 / A	EBL	**42.2 / E**	3.5 / A
	NB	NBL	2.6 / A		NBL	5.5 / A	
	SB	SBT	0.3 / A		SBT	1.0 / A	

Table 46 – Marketplace Dr at SE Target Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBR	34	60	**EBR[1]**	**65**	**60**
	NB	NBL	29	200	NBL	85	200
	SB	SBT	-	510	SBT	20	510
Phase 2 Mitigated Build (Year 2028)	EB	EBR	30	60	EBL	80	410
	NB	NBL	29	200	NBL	86	200
	SB	SBT	20	510	SBT	20	510
Phase 3 Build (Year 2029)	EB	EBR	34	60	**EBR[1]**	**66**	**60**
	NB	NBL	31	200	NBL	83	200
	SB	SBT	-	510	SBT	20	0
Phase 3 Mitigated Build (Year 2029)	EB	EBR	31	60	**EBR[1]**	**71**	**60**
	NB	NBL	29	200	NBL	90	200
	SB	SBT	-	510	SBT	20	510
Horizon Build (Year 2045)	EB	EBR	31	60	**EBR[1]**	**63**	**60**
	NB	NBL	31	200	NBL	92	200
	SB	SBT	-	510	SBT	20	510
Horizon Mitigated Build (Year 2045)	EB	EBR	31	60	**EBR[1]**	**63**	**60**
	NB	NBL	33	200	NBL	90	200
	SB	SBT	-	510	SBT	20	510

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] EBL 95th percentile queues extend past available EBR storage

Proposed Mitigations – Marketplace Dr at SE Target Access

No mitigations are proposed for Marketplace Drive at SE Target Access in any future No Build or Build scenario.

6.9 Marketplace Dr at Slip Ramp from 37th St

The intersection of Marketplace Drive at the Slip Ramp from 37th Street is identified as intersection 9 in **Figure 1**. This intersection operates under minor-street stop control in the existing conditions and all future scenarios.

The westbound slip ramp to Marketplace Drive from 37th Street has a short westbound left turn pocket that is approximately 60 feet in length if a vehicle pulled into the crosswalk looking to make a left turn. Westbound 95th percentile queues extend further than the 60-foot storage of the existing short turn pocket. This leads to a mixing of westbound left and westbound right vehicles as the turn pocket is often blocked, leading to some inefficiencies. This is not particularly concerning as westbound left volumes are low, with only 22 vehicles under Horizon Year PM conditions. No mitigations are planned for the intersection in any scenario.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS B or better. Besides the westbound left turn pocket previously discussed, 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.9 or lower).

Tables 47, 48, 49, and 50 detail the traffic operations and queueing results for Marketplace Drive at the Slip Ramp from 37th Street through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 47 – Marketplace Dr at Slip Ramp from 37th St – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBR	3.7 / A	1.9 / A	EBR	3.8 / A	6.2 / A
	WB	WBL	5.6 / A		WBR	13.2 / B	
	NB	NBT	0.4 / A		NBT	1.3 / A	
	SB	SBT	0.2 / A		SBT	0.5 / A	
No Build (Year 2027)	EB	EBR	3.4 / A	1.9 / A	EBR	3.6 / A	6.0 / A
	WB	WBL	5.3 / A		WBR	12.4 / B	
	NB	NBT	0.5 / A		NBT	1.4 / A	
	SB	SBT	0.2 / A		SBT	0.3 / A	
Mitigated No Build (Year 2027)	EB	EBR	2.9 / A	1.9 / A	EBR	3.9 / A	5.2 / A
	WB	WBL	5.1 / A		WBR	10.6 / B	
	NB	NBT	0.5 / A		NBT	1.3 / A	
	SB	SBT	0.2 / A		SBT	0.3 / A	
Phase 1 Build (Year 2027)	EB	EBR	3.6 / A	1.8 / A	EBR	4.1 / A	5.4 / A
	WB	WBL	5.1 / A		WBR	12.1 / B	
	NB	NBT	0.5 / A		NBT	1.4 / A	
	SB	SBT	0.2 / A		SBT	0.3 / A	
Phase 1 Mitigated Build (Year 2027)	EB	EBR	2.8 / A	1.7 / A	EBR	3.8 / A	5.4 / A
	WB	WBL	4.8 / A		WBL	12.2 / B	
	NB	NBT	0.5 / A		NBT	1.4 / A	
	SB	SBT	0.2 / A		SBT	0.3 / A	

Table 48 – Marketplace Dr at Slip Ramp from 37th St – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBR	20	110	EBR	28	110
	WB	WBR	55	390	**WBL[1]**	**89**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
No Build (Year 2027)	EB	EBR	23	110	EBR	28	110
	WB	WBR	55	390	**WBL[1]**	**74**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Mitigated No Build (Year 2027)	EB	EBR	21	110	EBR	26	110
	WB	WBR	55	390	**WBL[1]**	**66**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Phase 1 Build (Year 2027)	EB	EBR	20	110	EBR	28	110
	WB	WBR	54	390	**WBL[1]**	**70**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Phase 1 Mitigated Build (Year 2027)	EB	EBR	22	110	EBR	27	110
	WB	WBR	52	390	**WBL[1]**	**77**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] WBR 95th percentile queues extend past storage of WBL turn pocket

Table 49 – Marketplace Dr at Slip Ramp from 37th St – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBR	3.5 / A	1.6 / A	EBR	5.0 / A	5.2 / A
	WB	WBL	5.3 / A		WBR	12.3 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBT	0.3 / A		SBT	0.6 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBR	3.3 / A	1.7 / A	EBR	4.7 / A	4.8 / A
	WB	WBL	5.6 / A		WBL	11.8 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBT	0.3 / A		SBT	0.6 / A	
Phase 3 Build (Year 2029)	EB	EBR	3.2 / A	1.7 / A	EBR	4.5 / A	4.5 / A
	WB	WBL	5.2 / A		WBL	11.8 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBT	0.3 / A		SBT	0.6 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBR	2.9 / A	1.6 / A	EBR	5.6 / A	4.8 / A
	WB	WBL	5.5 / A		WBL	12.2 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBR	0.4 / A		SBT	0.6 / A	
Horizon Build (Year 2045)	EB	EBR	3.0 / A	1.6 / A	EBR	4.8 / A	5.7 / A
	WB	WBL	5.4 / A		WBR	14.5 / B	
	NB	NBT	0.4 / A		NBT	1.6 / A	
	SB	SBR	0.3 / A		SBT	0.6 / A	
Horizon Mitigated Build (Year 2045)	EB	EBR	3.0 / A	1.7 / A	EBR	4.5 / A	4.9 / A
	WB	WBL	5.7 / A		WBR	12.4 / B	
	NB	NBT	0.5 / A		NBT	1.5 / A	
	SB	SBT	0.2 / A		SBT	0.6 / A	

Table 50 – Marketplace Dr at Slip Ramp from 37th St – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 (Year 2028)	EB	EBR	23	110	EBR	29	110
	WB	WBR	52	390	**WBL[1]**	**64**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Phase 2 Mitigated Build (Year 2028)	EB	EBR	22	110	EBR	25	110
	WB	WBR	54	390	**WBL[1]**	**61**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Phase 3 Build (Year 2029)	EB	EBR	21	110	EBR	26	110
	WB	WBR	54	390	WBR	155	390
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Phase 3 Mitigated Build (Year 2029)	EB	EBR	20	110	EBR	26	110
	WB	WBR	48	390	**WBL[1]**	**62**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Horizon Build (Year 2045)	EB	EBR	22	110	EBR	26	110
	WB	WBR	53	390	**WBL[1]**	**78**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421
Horizon Mitigated Build (Year 2045)	EB	EBR	23	110	EBR	29	110
	WB	WBR	52	390	**WBL[1]**	**65**	**60**
	NB	NBT	-	689	NBT	-	689
	SB	SBT	-	421	SBT	-	421

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] WBR 95th percentile queues extend past storage of WBL turn pocket

Proposed Mitigations – Marketplace Dr at Slip Ramp from 37th St

No mitigations are proposed for Marketplace Drive at the Slip Ramp from 37th Street in any future No Build or Build scenario.

6.10 W. Circle Dr at Valleyhigh Rd

The intersection of W. Circle Drive at Valleyhigh Road is identified as intersection 10 in **Figure 1**. This intersection operates under signal control in the existing conditions and all future scenarios.

No mitigations were required beyond signal timing adjustments for the Mitigated No Build 2027, Phase 1 Mitigated Build or Phase 2 Mitigated Build scenarios.

In the Phase 3 Mitigated Build scenario, in order to keep a level of service of C or better overall and volume to capacity ratios of 0.8 or lower, dual southbound left and dual westbound left turn lanes were included at the intersection. This allows the intersection to perform within Rochester's traffic service standards. The existing intersection has adequate space for the dual turn lanes.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 51, 52, 53, and 54 detail the traffic operations and queueing results for W. Circle Drive at Valleyhigh Road through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 51 – W. Circle Dr at Valleyhigh Rd – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	**62.2 / E**	28.2 / C	EBL	**63.7 / E**	30.4 / C
	WB	WBL	**65.2 / E**		WBL	**57.1 / E**	
	NB	NBL	**62.4 / E**		NBL	**55.7 / E**	
	SB	SBL	**55.5 / E**		SBL	**56.0 / E**	
No Build (Year 2027)	EB	EBL	**56.1 / E**	32.3 / C	EBL	**63.9 / E**	30.3 / C
	WB	WBL	**62.9 / E**		WBL	53.4 / D	
	NB	NBL	**61.9 / E**		NBL	**60.1 / E**	
	SB	SBL	53.7 / D		SBL	**55.7 / E**	
Mitigated No Build (Year 2027)	EB	EBL	52.2 / D	31.2 / C	EBL	**68.7 / E**	30.8 / C
	WB	WBL	**58.4 / E**		WBL	**58.9 / E**	
	NB	NBL	**61.1 / E**		NBL	**59.3 / E**	
	SB	SBL	46.9 / D		SBL	**58.9 / E**	
Phase 1 Build (Year 2027)	EB	EBL	53.8 / D	31.2 / C	EBL	**70.9 / E**	31.8 / C
	WB	WBL	**63.6 / E**		WBL	**59.8 / E**	
	NB	NBL	**63.0 / E**		NBL	**57.2 / E**	
	SB	SBL	46.4 / D		SBL	**60.1 / E**	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	52.3 / D	31.3 / C	EBL	**70.3 / E**	32.1 / C
	WB	WBL	**58.7 / E**		WBL	**59.9 / E**	
	NB	NBL	**61.3 / E**		NBL	**58.7 / E**	
	SB	SBL	47.7 / D		SBL	**60.3 / E**	

Table 52 – W. Circle Dr at Valleyhigh Rd – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	164	1110	EBL	160	290
	WB	WBL	88	295	WBL	125	295
	NB	NBT	175	1129	NBT	282	1129
	SB	SBL	229	310	SBT	231	670
No Build (Year 2027)	EB	EBT	172	1110	EBL	148	290
	WB	WBT	96	1349	WBT	154	1349
	NB	NBT	192	1129	NBT	297	1129
	SB	SBL	249	310	SBT	232	670
Mitigated No Build (Year 2027)	EB	EBT	182	1110	EBL	175	290
	WB	WBT	91	1349	WBT	159	1349
	NB	NBT	212	1129	NBT	286	1129
	SB	SBL	241	310	SBT	235	670
Phase 1 Build (Year 2027)	EB	EBT	174	1110	EBL	185	290
	WB	WBT	101	1349	WBT	152	1349
	NB	NBT	211	1129	NBT	301	1129
	SB	SBL	244	310	SBT	247	670
Phase 1 Mitigated Build (Year 2027)	EB	EBT	177	1110	EBL	172	290
	WB	WBT	92	1349	WBT	153	1349
	NB	NBT	217	1129	NBT	302	1129
	SB	SBL	250	310	SBT	253	670

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 53 – W. Circle Dr at Valleyhigh Rd – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	**57.5 / E**	30.5 / C	EBL	**61.5 / E**	31.0 / C
	WB	WBL	**61.6 / E**		WBL	**59.6 / E**	
	NB	NBL	**59.8 / E**		NBL	53.7 / D	
	SB	SBL	36.5 / D		SBL	54.4 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	**59.2 / E**	29.5 / C	EBL	**61.0 / E**	32.4 / C
	WB	WBL	**61.4 / E**		WBL	**62.5 / E**	
	NB	NBL	49.1 / D		NBL	41.1 / D	
	SB	SBL	**56.4 / E**		SBL	**66.7 / E**	
Phase 3 Build (Year 2029)	EB	EBL	**55.7 / E**	29.0 / C	EBL	**61.3 / E**	32.5 / C
	WB	WBL	**57.2 / E**		WBL	**62.6 / E**	
	NB	NBL	44.2 / D		NBL	41.1 / D	
	SB	SBL	54.8 / D		SBL	**66.8 / E**	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	**66.0 / E**	31.3 / C	EBL	**63.2 / E**	28.7 / C
	WB	WBL	**58.6 / E**		WBL	**60.8 / E**	
	NB	NBL	**59.6 / E**		NBL	**59.5 / E**	
	SB	SBL	**58.0 / E**		SBL	37.6 / D	
Horizon Build (Year 2045)	EB	EBL	**61.4 / E**	32.6 / C	EBL	**62.5 / E**	33.3 / C
	WB	WBL	**59.5 / E**		WBL	**62.5 / E**	
	NB	NBL	**56.8 / E**		NBL	**75.8 / E**	
	SB	SBL	**59.6 / E**		SBL	36.2 / D	
Horizon Mitigated Build (Year 2045)	EB	EBL	**69.3 / E**	34.9 / C	EBL	**69.8 / E**	32.3 / C
	WB	WBL	**65.8 / E**		WBL	**57.7 / E**	
	NB	NBL	**60.4 / E**		NBL	52.3 / D	
	SB	SBL	**69.0 / E**		SBL	**67.6 / E**	

Table 54 – W. Circle Dr at Valleyhigh Rd – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	221	1110	EBT	159	1110
	WB	WBT	152	1321	WBT	201	1321
	NB	NBT	209	1129	NBT	293	1129
	SB	SBL	180	310	SBT	252	670
Phase 2 Mitigated Build (Year 2028)	EB	EBT	244	1110	EBT	164	1110
	WB	WBT	147	1321	WBT	203	1321
	NB	NBT	191	1129	NBT	291	1129
	SB	SBL	216	310	SBT	288	670
Phase 3 Build (Year 2029)	EB	EBT	225	1110	EBT	168	1110
	WB	WBT	146	1321	WBT	202	1321
	NB	NBT	197	1129	NBT	283	1129
	SB	SBL	247	310	SBT	288	670
Phase 3 Mitigated Build (Year 2029)	EB	EBT	231	1110	EBT	172	1110
	WB	WBT	143	1321	WBT	214	1321
	NB	NBT	194	1129	NBT	285	1129
	SB	SBT	194	670	SBT	138	670
Horizon Build (Year 2045)	EB	EBT	268	1110	EBT	195	1110
	WB	WBT	161	1321	WBT	275	1321
	NB	NBL	224	350	**NBL[1]**	**378**	**295**
	SB	SBT	210	670	SBT	133	670
Horizon Mitigated Build (Year 2045)	EB	EBT	332	1110	EBT	208	1110
	WB	WBT	198	1321	WBT	270	1321
	NB	NBL	243	350	NBL	328	350
	SB	SBT	177	670	SBT	200	670

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage.

Proposed Mitigations – W. Circle Dr at Valleyhigh Rd

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No mitigations necessary

Development Phase 1 and Phase 2 do not require any mitigations. The following mitigations should be made Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- Add a dual southbound left turn lane.

- Add a dual westbound left turn lane.

See Appendix E1 for the proposed intersection layout of W. Circle Drive at Valleyhigh Road.

6.11 Valleyhigh Dr at 37th St

The intersection of Valleyhigh Drive at 37th Street is identified as intersection 11 in **Figure 1**. This intersection is a new intersection that is proposed as part of the connection of 37th Street to Valleyhigh Drive in Phase 2 of the development.

A warrant analysis of the intersection was performed and found that an all-way stop, roundabout, or traffic signal control would be warranted at the intersection; however, all-way stop control was not considered reasonable based on agency input. The intersection is being proposed as a single lane roundabout intersection with an additional eastbound right turn slip lane. See **Appendix E** for the proposed intersection layout of 37th Street at Valleyhigh Drive. HCS was used to analyze the future proposed roundabout control at this intersection.

Under the Mitigated Build scenarios (Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS B or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Table 55 and **Table 56** detail the traffic operations and queueing results for Valleyhigh Drive at 37th Street through the Phase 2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 55 – Valleyhigh Dr at 37th St – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBR	6.0 / A	5.6 / A	EBR	5.7 / A	7.1 / A
	NB	NBL	5.5 / A		NBL	7.9 / A	
	SB	SBT	6.5 / A		SBT	9.9 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBR	6.0 / A	5.6 / A	EBR	5.7 / A	7.1 / A
	NB	NBL	5.5 / A		NBL	7.9 / A	
	SB	SBT	6.5 / A		SBT	9.9 / A	
Phase 3 Build (Year 2029)	EB	EBR	6.6 / A	6.0 / A	EBR	6.3 / A	7.8 / A
	NB	NBL	6.0 / A		NBL	8.8 / A	
	SB	SBT	7.0 / A		SBT	11.0 / B	
Phase 3 Mitigated Build (Year 2029)	EB	EBR	6.6 / A	6.0 / A	EBR	6.3 / A	7.8 / A
	NB	NBL	6.0 / A		NBL	8.8 / A	
	SB	SBT	7.0 / A		SBT	11.0 / B	
Horizon Build (Year 2045)	EB	EBR	7.6 / A	6.8 / A	EBR	7.3 / A	7.8 / A
	NB	NBL	6.8 / A		NBL	11.1 / B	
	SB	SBT	7.8 / A		SBT	13.8 / B	
Horizon Mitigated Build (Year 2045)	EB	EBR	7.6 / A	6.8 / A	EBR	7.3 / A	7.8 / A
	NB	NBL	6.8 / A		NBL	11.1 / B	
	SB	SBT	7.8 / A		SBT	13.8 / B	

Table 56 – Valleyhigh Dr at 37th St – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBR	40	525	EBR	35	525
	NB	NBT	30	173	NBT	60	173
	SB	SBT	35	1030	SBT	60	1030
Phase 2 Mitigated Build (Year 2028)	EB	EBR	40	525	EBR	35	525
	NB	NBT	30	173	NBT	60	173
	SB	SBT	35	1030	SBT	60	1030
Phase 3 Build (Year 2029)	EB	EBR	50	525	EBR	45	525
	NB	NBT	35	173	NBT	75	173
	SB	SBT	35	1030	SBT	65	1030
Phase 3 Mitigated Build (Year 2029)	EB	EBR	50	525	EBR	45	525
	NB	NBT	35	173	NBT	75	173
	SB	SBT	35	1030	SBT	65	1030
Horizon Build (Year 2045)	EB	EBR	65	525	EBR	60	525
	NB	NBT	45	173	NBT	115	173
	SB	SBT	40	1030	SBT	80	1030
Horizon Mitigated Build (Year 2045)	EB	EBR	65	525	EBR	60	525
	NB	NBT	45	173	NBT	115	173
	SB	SBT	40	1030	SBT	80	1030

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – Valleyhigh Dr at 37th St

In Phase 2 or when the 37th Street connection is made, the intersection should be constructed as a new single lane roundabout controlled intersection with an eastbound right turn slip lane. No mitigations beyond the initial construction are necessary in any future phase.

See **Appendix E** for the proposed intersection layout of 37th Street at Valleyhigh Drive.

6.12 37th St at RTC West

The intersection of 37th Street at RTC West is identified as intersection 12 in **Figure 1**. This intersection operates under minor street stop control under existing conditions. A warrant analysis was performed and found that the intersection does not meet all-way stop or traffic signal warrants under future build conditions, therefore the intersection will remain under minor-street stop-control throughout all future scenarios.

In Phase 2 of the development, 37th Street is proposed to be connected to Valleyhigh Drive. During this phase a reconstruction of 37th Street between Valleyhigh Drive at the SB US 52 Ramps is proposed. This would involve a reconstruction of the 37th Street at RTC West intersection. The intersection should include a dedicated left turn lane and shared through-right lane on the southbound approach; the existing westbound channelized right turn should be removed for a standard turn lane.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS B or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 57, 58, 59, and 60 detail the traffic operations and queueing results for 37th Street at RTC West through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 57 – 37th St at RTC West – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	2.0 / A	2.8 / A	EBL	2.7 / A	3.1 / A
	WB	WBR	2.2 / A		WBR	2.7 / A	
	NB	NBR	1.9 / A		-	-	
	SB	SBL	6.0 / A		SBL	6.1 / A	
No Build (Year 2027)	EB	EBL	0.0 / A	3.3 / A	EBL	0.0 / A	3.8 / A
	WB	WBL	2.8 / A		WBR	3.1 / A	
	NB	NBT	7.7 / A		NBT	6.4 / A	
	SB	SBL	7.5 / A		SBL	5.7 / A	
Mitigated No Build (Year 2027)	EB	EBL	0.0 / A	3.2 / A	EBL	0.0 / A	3.8 / A
	WB	WBL	2.8 / A		WBR	3.2 / A	
	NB	NBT	7.4 / A		NBT	6.6 / A	
	SB	SBL	7.5 / A		SBL	5.6 / A	
Phase 1 Build (Year 2027)	EB	EBL	3.2 / A	3.8 / A	EBL	3.0 / A	3.6 / A
	WB	WBL	2.8 / A		WBR	3.1 / A	
	NB	NBT	8.1 / A		NBT	6.3 / A	
	SB	SBL	8.3 / A		SBL	6.1 / A	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	2.0 / A	3.8 / A	EBL	2.2 / A	3.7 / A
	WB	WBL	2.9 / A		WBR	3.2 / A	
	NB	NBT	8.0 / A		NBT	6.7 / A	
	SB	SBL	8.1 / A		SBL	6.2 / A	

Table 58 – 37th St at RTC West – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBL	20	65	EBL	20	65
	WB	WBR	-	585	WBR	20	585
	NB	NBT	20	400	NBT	-	400
	SB	SBT	66	727	SBT	66	727
No Build (Year 2027)	EB	EBL	-	65	EBL	-	5
	WB	WBL	20	80	WBT	20	1172
	NB	NBT	37	776	NBT	52	776
	SB	SBT	87	727	SBT	57	727
Mitigated No Build (Year 2027)	EB	EBL	-	65	EBL	-	65
	WB	WBL	20	80	WBR	37	585
	NB	NBT	37	776	NBT	43	776
	SB	SBT	91	727	SBT	57	727
Phase 1 Build (Year 2027)	EB	EBL	-	65	EBL	20	65
	WB	WBL	20	80	WBL	20	80
	NB	NBT	36	776	NBT	47	776
	SB	SBT	109	727	SBT	62	727
Phase 1 Mitigated Build (Year 2027)	EB	EBL	20	65	EBL	-	65
	WB	WBL	20	80	WBL	20	80
	NB	NBT	36	776	NBT	46	776
	SB	SBT	105	727	SBT	65	727

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 59 – 37th St at RTC West – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	4.1 / A	3.6 / A	EBL	4.7 / A	3.3 / A
	WB	WBL	4.0 / A		WBL	3.7 / A	
	NB	NBT	11.2 / B		NBL	9.2 / A	
	SB	SBL	11.8 / B		SBL	10.2 / B	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	4.3 / A	3.5 / A	EBL	4.6 / A	3.3 / A
	WB	WBL	4.0 / A		WBL	3.8 / A	
	NB	NBL	8.9 / A		NBT	9.8 / A	
	SB	SBL	11.4 / B		SBL	10.2 / B	
Phase 3 Build (Year 2029)	EB	EBL	4.0 / A	3.7 / A	EBL	4.6 / A	3.2 / A
	WB	WBL	4.0 / A		WBL	3.3 / A	
	NB	NBT	11.6 / B		NBT	12.0 / B	
	SB	SBL	12.2 / B		SBL	10.1 / B	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	4.1 / A	3.9 / A	EBL	4.6 / A	3.2 / A
	WB	WBL	4.7 / A		WBL	3.6 / A	
	NB	NBT	12.3 / B		NBT	9.7 / A	
	SB	SBL	12.7 / B		SBL	10.1 / B	
Horizon Build (Year 2045)	EB	EBL	4.2 / A	4.0 / A	EBL	4.4 / A	3.4 / A
	WB	WBL	4.6 / A		WBL	4.0 / A	
	NB	NBL	8.1 / A		NBT	10.4 / B	
	SB	SBL	12.9 / B		SBL	10.7 / B	
Horizon Mitigated Build (Year 2045)	EB	EBL	4.5 / A	3.7 / A	EBL	4.7 / A	3.3 / A
	WB	WBL	4.5 / A		WBL	4.0 / A	
	NB	NBT	14.2 / B		NBT	11.0 / B	
	SB	SBL	12.2 / B		SBL	10.0 / B	

Table 60 – 37th St at RTC West – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBL	25	65	EBL	42	65
	WB	WBL	40	80	WBL	20	80
	NB	NBT	38	778	NBT	54	778
	SB	SBL	114	130	SBL	75	130
Phase 2 Mitigated Build (Year 2028)	EB	EBL	29	65	EBL	43	65
	WB	WBL	38	80	WBR	29	585
	NB	NBT	39	778	NBT	53	778
	SB	SBL	112	130	SBL	76	130
Phase 3 Build (Year 2029)	EB	EBL	25	65	EBL	38	65
	WB	WBL	39	80	WBL	20	80
	NB	NBT	38	778	NBT	52	778
	SB	SBL	124	130	SBL	75	130
Phase 3 Mitigated Build (Year 2029)	EB	EBL	26	65	EBL	41	65
	WB	WBL	40	80	WBL	20	80
	NB	NBT	39	778	NBT	51	778
	SB	SBL	126	130	SBL	76	130
Horizon Build (Year 2045)	EB	EBL	26	65	EBL	40	65
	WB	WBL	43	80	WBL	20	80
	NB	NBT	39	778	NBT	52	778
	SB	SBL	120	130	SBL	79	130
Horizon Mitigated Build (Year 2045)	EB	EBL	30	65	EBL	39	65
	WB	WBL	37	80	WBL	20	80
	NB	NBT	39	778	NBT	54	778
	SB	SBL	120	130	SBL	76	130

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 37th St at RTC West

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 does not require any mitigations. The following mitigations should be made with Phase 2 to accommodate the development:

Build Mitigated (Year 2028) – Phase 2

- The connection/reconstruction of 37th Street would happen during this phase. The intersection would remain minor street stop controlled.

- The lane designation of the southbound approach would be changed to have a dedicated left turn lane with a shared though-right lane.
- The westbound channelized right turn lane would be converted to a regular right turn lane.

Development Phase 3 does not require additional mitigations.

See **Appendix E** for the proposed intersection layout of 37th Street at RTC West.

6.13 37th St at RTC East

The intersection of 37th Street at RTC East is identified as intersection 13 in **Figure 1**. Under existing conditions this intersection operates under minor-street stop-control. A warrant analysis was performed and found that the intersection meets all-way stop and traffic signal warrants under Phase 3 conditions. The intersection is proposed to be converted to a traffic signal in Phase 3 of the development.

Under Existing, No Build 2027, and Phase 1 conditions, the intersection operates acceptably and within Rochester's Traffic Service Standards without any need for further mitigations.

During Phase 2 of the development when 37th street is connected to Valleyhigh Drive and 37th Street is reconstructed between Valleyhigh Drive and the SB US 52 ramp, the concrete bollards and gatehouse on the westbound approach of this intersection should be removed at this time to accommodate the Phase 3 mitigations.

In Phase 2 Mitigated Build conditions, the Northbound right queues spill out of available storage, extending to 156 feet out of an available 130 feet of storage. While this is a concern and breaks the Traffic Service Standard for queueing, the volumes of northbound left vehicles potentially momentarily blocked by northbound right vehicles is low at just 33 vehicles in the PM peak hour. This queueing concern is fixed in Phase 3 when the intersection is converted into a traffic signal. Installing a signal earlier in Phase 2 would mean putting a signal in before a signal is warranted.

In Phase 3 of the development, the intersection is converted to a traffic signal and a dual westbound left lane is added. The channelized northbound right turn would be signalized with an overlap phase coordinated with the westbound left phase of the cycle.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B or better in each scenario and all turning movements operate at LOS D or better. All 95th percentile queues do not spill out of their available storage besides the discussed northbound right in Phase 2, and V/C ratios are acceptable (0.8 or lower).

Tables 61, 62, 63, and 64 detail the traffic operations and queueing results for 37th Street at RTC East through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 61 – 37th St at RTC East – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBT	0.1 / A	1.8 / A	EBT	0.4 / A	1.4 / A
	WB	WBL	3.9 / A		WBL	3.4 / A	
	NB	NBL	7.1 / A		NBL	6.8 / A	
No Build (Year 2027)	EB	EBT	0.4 / A	3.0 / A	EBT	0.7 / A	2.6 / A
	WB	WBL	5.7 / A		WBL	4.8 / A	
	NB	NBL	18.8 / C		NBL	10.4 / B	
Mitigated No Build (Year 2027)	EB	EBT	0.4 / A	2.9 / A	EBT	0.7 / A	2.6 / A
	WB	WBL	5.3 / A		WBL	4.9 / A	
	NB	NBL	20.2 / C		NBL	10.7 / B	
Phase 1 Build (Year 2027)	EB	EBT	0.5 / A	2.9 / A	EBT	0.8 / A	2.7 / A
	WB	WBL	5.9 / A		WBL	5.2 / A	
	NB	NBL	21.7 / C		NBL	12.1 / B	
Phase 1 Mitigated Build (Year 2027)	EB	EBT	0.5 / A	2.9 / A	EBT	0.8 / A	2.7 / A
	WB	WBL	5.9 / A		WBL	5.4 / A	
	NB	NBL	20.1 / C		NBL	12.7 / B	

Table 62 – 37th St at RTC East – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	-	800	EBT	-	800
	WB	WBL	47	340	WBL	34	340
	NB	NBL	20	940	NBL	35	940
No Build (Year 2027)	EB	EBT	20	800	EBT	20	800
	WB	WBL	101	340	WBL	59	340
	NB	NBL	58	680	NBR	87	130
Mitigated No Build (Year 2027)	EB	EBT	20	800	EBT	20	800
	WB	WBL	89	340	WBL	63	340
	NB	NBL	56	680	NBR	77	130
Phase 1 Build (Year 2027)	EB	EBT	20	800	EBT	20	800
	WB	WBL	105	340	WBL	71	340
	NB	NBL	59	680	NBR	66	130
Phase 1 Mitigated Build (Year 2027)	EB	EBT	-	800	EBT	20	800
	WB	WBL	105	340	WBL	78	340
	NB	NBL	55	680	NBR	79	130

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 63 – 37th St at RTC East – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	0.5 / A	3.1 / A	EBT	0.7 / A	3.5 / A
	WB	WBL	7.8 / A		WBL	7.0 / A	
	NB	NBL	**36.5 / E**		NBL	25.1 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	0.6 / A	3.0 / A	EBT	0.7 / A	3.3 / A
	WB	WBL	7.7 / A		WBL	7.2 / A	
	NB	NBL	27.2 / D		NBL	22.1 / C	
Phase 3 Build (Year 2029)	EB	EBT	0.7 / A	4.3 / A	EBT	0.8 / A	3.5 / A
	WB	WBL	10.3 / B		WBL	7.2 / A	
	NB	NBL	54.8 / D		NBL	22.8 / C	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	24.9 / C	14.4 / B	EBT	33.7 / C	15.7 / B
	WB	WBL	23.5 / C		WBL	14.9 / B	
	NB	NBL	31.1 / C		NBL	41.4 / D	
Horizon Build (Year 2045)	EB	EBT	24.3 / C	14.2 / B	EBT	33.3 / C	15.4 / B
	WB	WBL	23.4 / C		WBL	16.3 / B	
	NB	NBL	34.4 / C		NBL	39.9 / D	
Horizon Mitigated Build (Year 2045)	EB	EBT	24.6 / C	14.1 / B	EBT	34.2 / C	15.6 / B
	WB	WBL	23.2 / C		WBL	14.4 / B	
	NB	NBL	30.7 / C		NBL	42.7 / D	

Table 64 – 37th St at RTC East – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	20	800	EBT	20	800
	WB	WBL	148	340	WBL	98	340
	NB	NBL	28	680	**NBR**	**164**	**130**
Phase 2 Mitigated Build (Year 2028)	EB	EBT	20	800	EBT	20	800
	WB	WBL	142	340	WBL	108	340
	NB	NBL	23	680	**NBR**	**156**	**130**
Phase 3 Build (Year 2029)	EB	EBT	20	800	EBT	20	800
	WB	WBL	210	340	WBL	105	340
	NB	NBL	25	680	NBR	165	580
Phase 3 Mitigated Build (Year 2029)	EB	EBT	184	800	EBT	239	800
	WB	WBL	253	340	WBL	136	340
	NB	NBR	34	580	NBR	274	580
Horizon Build (Year 2045)	EB	EBT	184	800	EBT	233	800
	WB	WBL	246	340	WBL	158	340
	NB	NBL	26	680	NBR	278	580
Horizon Mitigated Build (Year 2045)	EB	EBT	185	800	EBT	236	800
	WB	WBL	250	340	WBL	136	340
	NB	NBR	28	580	NBR	274	580
XXX – 95th% queues exceed available storage XXX – 95th% through queue exceeds adjacent turn lane storage							

Proposed Mitigations – 37th St at RTC East

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 and Phase 2 do not require any mitigations. The following mitigations should be made with Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- Add a dual westbound left turn lane.

- Convert intersection to Signal Control. The northbound channelized right turn would have an additional overlap phase coordinated with the westbound left turn phase.

See **Appendix E** for the proposed intersection layout of 37th Street at RTC East.

6.14 37th St at SB US 52 Ramp

The intersection of 37th Street at the southbound US 52 Ramp is identified as intersection 14 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

The intersection has queueing and LOS concerns under Existing and No Build 2027 conditions. Under No Build 2027 conditions westbound left volumes are high with 535 vehicles in the PM peak hour using a single left turn lane. This causes queueing concerns with 95th percentile westbound left queues spilling out of available queue storage. To make the No Build 2027 scenario comply with the Rochester's Traffic Service Standards, a number of intersection improvements were necessary for the Mitigated scenario.

No Build 2027 Mitigations:

- A dual westbound left lane is necessary due to the high number of left turns and limited turn lane storage on the 37th Street bridge. Due to the limited width on the 37th Street bridge, additional space is required to install a dual westbound left lane.
- A pedestrian bridge is proposed to be added to the north side of the 37th Street bridge/interchange to free up space on the bridge.
- Utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. A dual westbound left lane is installed back-to-back to a dual eastbound left lane at the 37th Street at NB US 52 ramp intersection.
- The median and taper is adjusted such that the back-to-back dual westbound left and dual eastbound left lanes on the 37th Street bridge have a 5 to 1 taper. This would be a 110-foot taper with two 11-foot left turn lanes.
- The dual westbound left lanes would keep the same 265 feet of storage as under existing conditions.

A major infrastructure investment such as this should be considered in coordination with all agencies, including MnDOT, ROCOG, and the City.

In Phase 1 and Phase 2 build scenarios, no additional mitigations are required beyond signal timing adjustments as the intersection operates acceptably.

In Phase 3 of the development the addition of a dual southbound right lane is necessary to keep the southbound approach V/C ratios at or below 0.8, while giving the westbound left lane sufficient green time to keep 95th percentile queues within the available queue storage.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level

of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B or better in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 65, 66, 67, and 68 detail the traffic operations and queueing results for 37th Street at SB US 52 Ramp through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 65 – 37th St at SB US 52 Ramp – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBT	4.4 / A	12.9 / B	EBT	16.7 / B	17.1 / B
	WB	WBT	9.0 / A		WBL	13.4 / B	
	SB	SBL	53.2 / D		SBL	52.0 / D	
No Build (Year 2027)	EB	EBT	5.1 / A	13.9 / B	EBT	14.4 / B	19.3 / B
	WB	WBT	12.7 / B		WBL	30.6 / C	
	SB	SBL	48.4 / D		SBL	53.4 / D	
Mitigated No Build (Year 2027)	EB	EBT	6.9 / A	12.2 / B	EBT	17.4 / B	16.8 / B
	WB	WBL	11.1 / B		WBL	24.6 / C	
	SB	SBL	42.8 / D		SBL	45.0 / D	
Phase 1 Build (Year 2027)	EB	EBT	6.5 / A	11.6 / B	EBT	17.3 / B	17.0 / B
	WB	WBL	10.5 / B		WBL	25.2 / C	
	SB	SBL	45.6 / D		SBL	44.8 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBT	7.2 / A	11.5 / B	EBT	17.5 / B	16.5 / B
	WB	WBL	11.1 / B		WBL	24.3 / C	
	SB	SBL	42.4 / D		SBL	45.0 / D	

Table 66 – 37th St at SB US 52 Ramp – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	20	650	EBT	108	650
	WB	WBT	134	610	WBT	231	610
	SB	SBT	190	973	SBT	268	973
No Build (Year 2027)	EB	EBT	32	650	EBT	128	650
	WB	WBT	233	610	**WBL**	**306**	**265**
	SB	SBR	220	485	SBT	289	973
Mitigated No Build (Year 2027)	EB	EBT	47	650	EBT	133	650
	WB	WBT	169	610	WBL	246	265
	SB	SBR	228	485	SBT	296	972
Phase 1 Build (Year 2027)	EB	EBT	54	650	EBT	131	650
	WB	WBT	177	610	WBL	242	265
	SB	SBR	202	485	SBT	323	972
Phase 1 Mitigated Build (Year 2027)	EB	EBT	56	650	EBT	130	650
	WB	WBT	176	610	WBL	240	265
	SB	SBR	208	485	SBT	312	972

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 67 – 37th St at SB US 52 Ramp – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	3.9 / A	8.5 / A	EBT	14.7 / B	12.0 / B
	WB	WBL	9.6 / A		WBL	19.8 / B	
	SB	SBL	**61.0 / E**		SBL	41.9 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	8.1 / A	14.4 / B	EBT	12.3 / B	13.0 / B
	WB	WBL	47.4 / D		WBL	23.2 / C	
	SB	SBL	**55.6 / E**		SBL	**79.5 / E**	
Phase 3 Build (Year 2029)	EB	EBT	10.2 / B	15.1 / B	EBT	11.5 / B	12.9 / B
	WB	WBL	46.1 / D		WBL	23.7 / C	
	SB	SBL	48.0 / D		SBL	**79.2 / E**	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	7.4 / A	14.5 / B	EBT	13.1 / B	13.2 / B
	WB	WBL	45.3 / D		WBL	23.8 / C	
	SB	SBL	46.1 / D		SBL	**79.5 / E**	
Horizon Build (Year 2045)	EB	EBT	8.0 / A	15.1 / B	EBT	13.7 / B	11.4 / B
	WB	WBL	45.7 / D		WBL	24.9 / C	
	SB	SBL	42.2 / D		SBL	**77.8 / E**	
Horizon Mitigated Build (Year 2045)	EB	EBT	7.5 / A	14.8 / B	EBT	13.8 / B	14.3 / B
	WB	WBL	46.1 / D		WBL	24.1 / C	
	SB	SBL	46.1 / D		SBL	**77.7 / E**	

Table 68 – 37th St at SB US 52 Ramp – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	63	650	EBT	113	650
	WB	WBT	135	610	WBT	200	610
	SB	SBR	157	635	SBT	192	972
Phase 2 Mitigated Build (Year 2028)	EB	EBT	85	650	EBT	110	650
	WB	WBT	190	610	WBL	229	265
	SB	SBR	164	635	SBT	175	972
Phase 3 Build (Year 2029)	EB	EBT	99	650	EBT	111	650
	WB	WBT	226	610	WBL	225	265
	SB	SBR	186	635	SBT	174	972
Phase 3 Mitigated Build (Year 2029)	EB	EBT	93	650	EBT	114	650
	WB	WBT	238	610	WBL	223	265
	SB	SBR	185	635	SBT	169	970
Horizon Build (Year 2045)	EB	EBT	99	650	EBT	111	650
	WB	WBT	238	610	WBL	232	265
	SB	SBR	186	635	SBT	200	970
Horizon Mitigated Build (Year 2045)	EB	EBT	97	650	EBT	113	650
	WB	WBT	230	610	WBL	225	265
	SB	SBR	182	635	SBT	195	970

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 37th St at SB US 52 Ramp

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- The addition of a pedestrian bridge to the north side of the 37th Street bridge/interchange.
- Install a dual westbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The westbound left turn lanes would have 265 feet of storage with a 110-foot taper (5 to 1).

Development Phase 1 and Phase 2 do not require any mitigations. The following mitigations should be made with Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- The addition of a dual southbound right turn lane. The southbound approach would be dual right turn lanes with a shared through/left lane.

See **Appendix E** for the proposed bridge reconfiguration and proposed intersection layout of 37th Street at NB US 52 Ramp.

6.15 37th St at NB US 52 Ramp

The intersection of 37th Street at the northbound US 52 Ramp is identified as intersection 15 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under No Build 2027 conditions, the intersection has queueing concerns on the eastbound left turning movement. In the No Build 2027 PM scenario, eastbound left volumes are 300 vehicles per hour, which is considered relatively high for a single lane left turn lane. The northbound approach sees high levels of traffic volumes with 1,360 vehicles using the approach in the PM peak hour. There is not enough capacity at the intersection to efficiently give enough green time to the eastbound approach to keep queues within the available storage. In the PM peak hour, 95th percentile eastbound left queues extend to 288 feet out of an available 165 feet of storage.

As discussed in section 8.14, changes to the 37th Street bridge are necessary under No Build 2027 conditions to comply with Rochester's Traffic Service Standards. The following mitigations were found to be necessary in the Mitigated No Build 2027 scenario:

No Build 2027 Mitigations:

- A dual eastbound left lane is necessary due to the high number of left turns and limited turn lane storage on the 37th Street bridge. Due to the limited width on the 37th Street bridge additional space is required to install a dual westbound left lane.
- A pedestrian bridge is proposed to be added to the north side of the 37th Street bridge/interchange to free up space on the bridge.
- Utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. A dual eastbound left lane is installed back-to-back to a dual westbound left lane at the 37th Street at SB US 52 ramp intersection.
- The median and taper is adjusted such that the back-to-back dual eastbound left and dual westbound left lanes on the 37th Street bridge have a 5 to 1 taper. This would be a 110-foot taper with two 11-foot left turn lanes.
- The dual eastbound left lanes would have an increase in storage due to a shorter taper. The eastbound left turn lane storage would be increased from 165 feet to 175 feet.
- An additional northbound lane is added to the west side of the northbound approach. The northbound approach's lane designation is converted from a dedicated left, shared left/through, dedicated through, and dedicated right turn lane approach to dual dedicated left lanes, dual dedicated through lane, and a dedicated right turn lane approach.

A major infrastructure investment such as this should be considered in coordination with all agencies, including MnDOT, ROCOG, and the City of Rochester.

During the Phase 1 Mitigated Build PM scenario, westbound through 95th percentile queues extend to 413 feet out of an available 405 feet of storage between the closely spaced intersections. These 95th percentile westbound queues would extend back through the west leg crosswalk but not block vehicle movements in the intersection. Simtraffic simulations show that the queues when at maximum length are rolling and clear during the westbound green light phase.

During Phase 2 of the development as 37th Street is connected to Valleyhigh drive, traffic volumes at the 37th Street interchange shift. After the shift in volumes and changes to signal timings, westbound through queueing is no longer an issue.

In the Phase 3 Mitigated Build scenario, an additional northbound right lane is added to the northbound approach to keep V/C ratios of northbound right turning movements at or below 0.8. This frees up green time for westbound through movements and westbound through queueing continues to no longer be an issue.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C or better in each scenario and all turning movements operate at LOS D or better. 95th percentile queues do not spill out of their available storage, besides the discussed Phase 1 PM westbound 95th percentile queues, and V/C ratios are acceptable (0.8 or lower).

Tables 69, 70, 71, and 72 detail the traffic operations and queueing results for 37th Street at NB US 52 Ramp through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 69 – 37th St at NB US 52 Ramp – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	12.6 / B	16.4 / B	EBL	27.7 / C	19.7 / B
	WB	WBT	11.9 / B		WBT	14.0 / B	
	NB	NBT	33.2 / C		NBL	37.1 / D	
No Build (Year 2027)	EB	EBL	15.8 / B	19.1 / B	EBL	**55.9 / E**	27.2 / C
	WB	WBT	16.6 / B		WBT	27.0 / C	
	NB	NBL	32.6 / C		NBL	38.0 / D	
Mitigated No Build (Year 2027)	EB	EBL	17.8 / B	18.5 / B	EBL	25.7 / C	31.9 / C
	WB	WBT	13.3 / B		WBT	43.4 / D	
	NB	NBL	34.5 / C		NBL	49.2 / D	
Phase 1 Build (Year 2027)	EB	EBL	18.8 / B	18.7 / B	EBL	24.3 / C	33.1 / C
	WB	WBT	13.5 / B		WBT	43.6 / D	
	NB	NBL	35.4 / D		NBL	51.8 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	18.6 / B	18.3 / B	EBL	23.3 / C	29.6 / C
	WB	WBT	13.9 / B		WBT	31.6 / C	
	NB	NBL	33.8 / C		NBL	52.7 / D	

Table 70 – 37th St at NB US 52 Ramp – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	65	610	EBL	132	165
	WB	WBT	214	405	WBT	306	405
	NB	NBT	223	1443	NBT	294	1443
No Build (Year 2027)	EB	EBT	78	610	**EBL**	**288**	**165**
	WB	WBT	233	405	WBT	354	405
	NB	NBT	226	1443	NBT	296	1443
Mitigated No Build (Year 2027)	EB	EBT	54	610	EBL	143	175
	WB	WBT	203	405	**WBT**	**457**	**405**
	NB	NBL	218	820	NBT	307	1438
Phase 1 Build (Year 2027)	EB	EBT	54	610	EBL	131	175
	WB	WBT	221	405	**WBT**	**455**	**405**
	NB	NBL	227	820	NBL	316	820
Phase 1 Mitigated Build (Year 2027)	EB	EBT	57	610	EBL	119	175
	WB	WBT	205	405	**WBT**	**413**	**405**
	NB	NBL	217	820	NBL	340	820

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 71 – 37th St at NB US 52 Ramp – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	18.9 / B	19.9 / B	EBL	23.6 / C	30.7 / C
	WB	WBT	16.5 / B		WBT	36.8 / D	
	NB	NBL	35.0 / D		NBL	50.7 / D	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	35.9 / D	20.7 / C	EBL	32.3 / C	27.9 / C
	WB	WBT	17.2 / B		WBT	25.2 / C	
	NB	NBL	35.2 / D		NBL	52.2 / D	
Phase 3 Build (Year 2029)	EB	EBL	37.4 / D	21.2 / C	EBL	31.6 / C	27.8 / C
	WB	WBT	18.0 / B		WBT	23.2 / C	
	NB	NBL	35.2 / D		NBL	50.8 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	35.3 / D	20.6 / C	EBL	35.6 / D	28.1 / C
	WB	WBT	18.2 / B		WBT	28.2 / C	
	NB	NBL	34.5 / C		NBL	52.4 / D	
Horizon Build (Year 2045)	EB	EBL	36.9 / D	21.0 / C	EBL	38.5 / D	29.2 / C
	WB	WBT	17.8 / B		WBT	30.1 / C	
	NB	NBL	36.3 / D		NBL	53.6 / D	
Horizon Mitigated Build (Year 2045)	EB	EBL	33.7 / C	20.7 / C	EBL	36.8 / D	28.8 / C
	WB	WBT	18.5 / B		WBT	30.1 / C	
	NB	NBL	35.2 / D		NBL	53.0 / D	

Table 72 – 37th St at NB US 52 Ramp – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	84	610	EBL	124	175
	WB	WBT	232	405	**WBT**	**411**	**405**
	NB	NBL	225	820	NBL	284	820
Phase 2 Mitigated Build (Year 2028)	EB	EBL	93	175	EBL	138	175
	WB	WBT	217	405	WBT	353	405
	NB	NBL	220	820	NBL	287	820
Phase 3 Build (Year 2029)	EB	EBL	111	175	EBL	147	175
	WB	WBT	226	405	WBT	317	405
	NB	NBL	218	820	NBR	333	820
Phase 3 Mitigated Build (Year 2029)	EB	EBL	126	175	EBL	158	175
	WB	WBT	230	405	WBT	378	405
	NB	NBL	219	820	NBL	280	820
Horizon Build (Year 2045)	EB	EBL	124	175	EBL	173	175
	WB	WBT	232	405	WBT	402	405
	NB	NBL	227	820	NBL	293	820
Horizon Mitigated Build (Year 2045)	EB	EBL	116	175	EBL	161	175
	WB	WBT	231	405	WBT	399	405
	NB	NBL	229	820	NBL	292	820

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 37th St at NB US 52 Ramp

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- The addition of a pedestrian bridge to the north side of the 37th Street bridge/interchange.
- Install a dual eastbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The eastbound left turn lanes would have 265 feet of storage with a 110-foot taper (5 to 1).

- An additional northbound lane is added to the west side of the northbound approach. The northbound approach's lane designation is converted from a dedicated left, shared left/through, dedicated through, and dedicated right turn lane approach to dual dedicated left lanes, dual dedicated through lane, and a dedicated right turn lane approach.

Development Phase 1 and Phase 2 do not require any mitigations. The following mitigations should be made with Phase 3 to accommodate the development:

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- The addition of a dual northbound right turn lane. The northbound approach would have dual left turn lanes, dual through lanes, and dual right turn lanes.

See **Appendix E** for the proposed bridge reconfiguration and proposed intersection layouts of 37th Street at NB US 52 Ramp.

6.16 37th St at 21st Ave/Maplewood Sq Access

The intersection of 37th Street at 21st Ave/Maplewood Sq Access is identified as intersection 16 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under Existing and No Build 2027 conditions, the intersection operates acceptably and within Rochester's Traffic Service Standards without any need for further mitigations.

Under Phase 1 Build conditions there are increases in eastbound and westbound traffic along 37th Street at the intersection. Under Mitigated Build conditions the signal timing was adjusted in coordination with the neighboring 37th Street interchange traffic signals. While most turning movements perform better after the signal retiming, the northbound left movement performs worse in the PM peak hour, but within Rochester's Traffic Service Standards. In the Mitigated Phase 1 Build scenario, the northbound left turn lane is extended to have 200 feet of storage with a 60-foot taper; to mitigate this issue would require pavement marking changes only.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B in each scenario and all turning movements operate at LOS E or better. 95th percentile queues do not spill out of their available storage besides the previously discusses northbound left turn lane in Phase 2, and V/C ratios are acceptable (0.8 or lower).

Tables 73, 74, 75, and 76 detail the traffic operations and queueing results for 37th Street at 21st Avenue/Maplewood Square Access through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 73 – 37th St at 21st Ave/Maplewood Sq Access – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	7.2 / A	5.0 / A	EBL	13.2 / B	12.1 / B
	WB	WBL	7.1 / A		WBL	13.3 / B	
	NB	NBL	53.8 / D		NBL	49.8 / D	
	SB	SBL	42.1 / D		SBL	40.1 / D	
No Build (Year 2027)	EB	EBL	7.5 / A	5.2 / A	EBL	15.8 / B	12.4 / B
	WB	WBL	6.2 / A		WBL	13.9 / B	
	NB	NBL	53.4 / D		NBL	49.0 / D	
	SB	SBL	43.1 / D		SBL	37.0 / D	
Mitigated No Build (Year 2027)	EB	EBL	7.3 / A	4.8 / A	EBL	16.3 / B	14.3 / B
	WB	WBL	6.3 / A		WBL	14.9 / B	
	NB	NBL	50.1 / D		NBL	50.5 / D	
	SB	SBL	47.9 / D		SBL	47.1 / D	
Phase 1 Build (Year 2027)	EB	EBL	7.2 / A	4.9 / A	EBL	16.9 / B	15.0 / B
	WB	WBL	6.2 / A		WBL	16.6 / B	
	NB	NBT	49.5 / D		NBL	50.1 / D	
	SB	SBL	50.4 / D		SBL	44.7 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	7.6 / A	5.1 / A	EBL	13.1 / B	13.5 / B
	WB	WBL	6.3 / A		WBL	13.5 / B	
	NB	NBL	53.0 / D		NBL	**64.9 / E**	
	SB	SBL	44.8 / D		SBL	31.6 / C	

Table 74 – 37th St at 21st Ave/Maplewood Sq Access – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	57	397	EBT	145	397
	WB	WBT	87	960	WBT	189	960
	NB	NBL	65	150	NBL	136	150
	SB	SBT	66	686	SBT	142	686
No Build (Year 2027)	EB	EBT	54	397	EBT	143	397
	WB	WBT	92	960	WBT	180	960
	NB	NBL	69	150	NBL	144	150
	SB	SBT	58	686	SBT	133	686
Mitigated No Build (Year 2027)	EB	EBT	54	390	EBT	129	390
	WB	WBT	106	960	WBT	265	960
	NB	NBL	65	150	NBL	136	150
	SB	SBT	52	686	SBT	154	686
Phase 1 Build (Year 2027)	EB	EBT	55	390	EBT	128	390
	WB	WBT	92	960	WBT	307	960
	NB	NBL	69	150	NBL	143	150
	SB	SBT	52	686	SBT	141	686
Phase 1 Mitigated Build (Year 2027)	EB	EBT	54	390	EBT	158	390
	WB	WBT	95	960	WBT	233	960
	NB	NBL	76	150	NBT	205	888
	SB	SBT	58	686	SBT	122	686

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 75 – 37th St at 21st Ave/Maplewood Sq Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	8.3 / A	6.1 / A	EBL	16.3 / B	16.1 / B
	WB	WBL	6.9 / A		WBL	13.4 / B	
	NB	NBL	48.4 / D		NBL	**71.7 / E**	
	SB	SBL	43.5 / D		SBL	34.0 / C	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	8.4 / A	5.8 / A	EBL	16.3 / B	15.0 / B
	WB	WBL	6.7 / A		WBL	14.4 / B	
	NB	NBT	46.8 / D		NBL	50.2 / D	
	SB	SBL	46.4 / D		SBL	48.2 / D	
Phase 3 Build (Year 2029)	EB	EBL	6.9 / A	5.7 / A	EBL	15.5 / B	14.8 / B
	WB	WBL	7.7 / A		WBL	14.2 / B	
	NB	NBL	45.6 / D		NBL	50.5 / D	
	SB	SBL	37.7 / D		SBL	47.7 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	8.2 / A	6.0 / A	EBL	18.5 / B	15.5 / B
	WB	WBL	6.8 / A		WBL	15.2 / B	
	NB	NBL	47.6 / D		NBL	**55.5 / E**	
	SB	SBL	38.4 / D		SBL	47.5 / D	
Horizon Build (Year 2045)	EB	EBL	8.8 / A	5.8 / A	EBL	19.8 / B	15.8 / B
	WB	WBL	6.7 / A		WBL	17.0 / B	
	NB	NBL	46.1 / D		NBL	50.1 / D	
	SB	SBL	42.1 / D		SBL	45.1 / D	
Horizon Mitigated Build (Year 2045)	EB	EBL	9.4 / A	5.7 / A	EBL	21.3 / C	16.8 / B
	WB	WBL	7.4 / A		WBL	17.4 / B	
	NB	NBL	47.6 / D		NBL	**60.6 / E**	
	SB	SBL	46.2 / D		SBL	46.0 / D	

Table 76 – 37th St at 21st Ave/Maplewood Sq Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	68	390	EBT	211	390
	WB	WBT	111	960	WBT	212	960
	NB	NBL	94	150	NBT	280	888
	SB	SBT	56	686	SBT	140	686
Phase 2 Mitigated Build (Year 2028)	EB	EBT	66	390	EBT	215	390
	WB	WBT	111	960	WBT	235	960
	NB	NBL	85	150	NBL	151	200
	SB	SBT	50	686	SBT	140	686
Phase 3 Build (Year 2029)	EB	EBT	75	390	EBT	215	390
	WB	WBT	113	960	WBT	215	960
	NB	NBL	82	150	NBL	149	200
	SB	SBT	53	686	SBT	151	686
Phase 3 Mitigated Build (Year 2029)	EB	EBT	65	378	EBT	213	378
	WB	WBT	126	960	WBT	249	960
	NB	NBL	94	200	NBL	157	200
	SB	SBT	51	686	SBT	144	686
Horizon Build (Year 2045)	EB	EBT	70	378	EBT	230	378
	WB	WBT	121	960	WBT	249	960
	NB	NBL	91	200	NBL	166	200
	SB	SBT	49	686	SBT	140	686
Horizon Mitigated Build (Year 2045)	EB	EBT	66	378	EBT	239	378
	WB	WBT	117	960	WBT	256	960
	NB	NBL	89	200	NBL	184	200
	SB	SBT	51	686	SBT	147	686

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 37th St at 21st Ave/Maplewood Sq Access

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

The following mitigations should be made with each development phase to accommodate the development:

Build Mitigated (Year 2027) – Phase 1

- Extend the northbound left turn lane to have 200 feet of storage with a 60-foot taper, this will involve pavement marking changes only.

Development Phase 2 and Phase 3 do not require additional mitigations.

See **Appendix E** for the proposed intersection layout of 37th Street at 21st Avenue/Maplewood Square Access.

6.17 Watson Ave NW at RTC South

The intersection of Watson Avenue NW at RTC South is identified as intersection 17 in **Figure 1**. This intersection operates under all-way stop control in the existing conditions and all future scenarios.

No mitigations are planned for Watson Avenue NW at RTC South in any No Build or Build scenario as the intersection operates acceptably in all future scenarios.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS A. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 77, 78, 79, and 80 detail the traffic operations and queueing results for Watson Avenue at RTC South through the Phase 1, Phase2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 77 – Watson Ave NW at RTC South – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
No Build (Year 2027)	EB	EBT	5.8 / A	2.8 / A	EBT	6.3 / A	5.5 / A
	WB	WBL	5.7 / A		WBT	7.3 / A	
	NB	NBL	4.2 / A		NBL	4.8 / A	
Mitigated No Build (Year 2027)	EB	EBT	6.2 / A	2.9 / A	EBT	6.3 / A	5.7 / A
	WB	WBL	5.5 / A		WBT	7.5 / A	
	NB	NBL	4.1 / A		NBL	4.5 / A	
Phase 1 Build (Year 2027)	EB	EBT	6.1 / A	3.0 / A	EBT	6.4 / A	5.3 / A
	WB	WBL	5.7 / A		WBT	7.7 / A	
	NB	NBL	4.3 / A		NBL	4.4 / A	
Phase 1 Mitigated Build (Year 2027)	EB	EBT	6.0 / A	3.1 / A	EBT	6.4 / A	5.2 / A
	WB	WBL	5.8 / A		WBT	7.6 / A	
	NB	NBL	4.3 / A		NBL	4.2 / A	

Table 78 – Watson Ave NW at RTC South – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
No Build (Year 2027)	EB	EBT	38	983	EBT	53	983
	WB	WBT	63	1822	WBT	72	1822
	NB	NBR	61	190	NBR	37	190
Mitigated No Build (Year 2027)	EB	EBT	36	983	EBT	52	983
	WB	WBT	61	1822	WBT	74	1822
	NB	NBR	64	190	NBR	38	190
Phase 1 Build (Year 2027)	EB	EBT	38	983	EBT	50	983
	WB	WBT	65	1822	WBT	73	1822
	NB	NBR	60	190	NBR	43	190
Phase 1 Mitigated Build (Year 2027)	EB	EBT	40	983	EBT	51	983
	WB	WBT	67	1822	WBT	72	1822
	NB	NBR	62	190	NBR	43	190

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 79 – Watson Ave NW at RTC South – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	5.9 / A	2.7 / A	EBT	6.1 / A	4.9 / A
	WB	WBL	5.3 / A		WBT	6.9 / A	
	NB	NBL	4.3 / A		NBL	4.4 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	5.9 / A	2.8 / A	EBT	6.2 / A	4.7 / A
	WB	WBL	5.5 / A		WBT	6.4 / A	
	NB	NBL	4.3 / A		NBL	4.1 / A	
Phase 3 Build (Year 2029)	EB	EBT	6.0 / A	3.2 / A	EBT	6.3 / A	4.9 / A
	WB	WBL	5.9 / A		WBT	7.5 / A	
	NB	NBL	4.4 / A		NBL	4.1 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	5.7 / A	3.4 / A	EBT	6.1 / A	5.0 / A
	WB	WBL	6.3 / A		WBT	7.4 / A	
	NB	NBL	4.3 / A		NBL	4.8 / A	
Horizon Build (Year 2045)	EB	EBT	6.0 / A	3.5 / A	EBT	6.1 / A	5.2 / A
	WB	WBL	6.2 / A		WBT	7.8 / A	
	NB	NBL	4.3 / A		NBL	4.2 / A	
Horizon Mitigated Build (Year 2045)	EB	EBT	5.9 / A	3.5 / A	EBT	6.1 / A	5.2 / A
	WB	WBL	6.5 / A		WBT	7.8 / A	
	NB	NBL	4.4 / A		NBL	4.2 / A	

Table 80 – Watson Ave NW at RTC South – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	38	983	EBT	47	983
	WB	WBT	59	1822	WBT	68	1822
	NB	NBR	60	190	NBR	41	190
Phase 2 Mitigated Build (Year 2028)	EB	EBT	39	983	EBT	47	983
	WB	WBT	63	1822	WBT	66	1822
	NB	NBR	60	190	NBR	41	190
Phase 3 Build (Year 2029)	EB	EBR	36	160	EBT	49	983
	WB	WBT	71	1822	WBT	70	1822
	NB	NBR	63	190	NBR	42	190
Phase 3 Mitigated Build (Year 2029)	EB	EBT	36	983	EBT	48	983
	WB	WBT	72	1822	WBT	74	1822
	NB	NBR	67	190	NBR	51	190
Horizon Build (Year 2045)	EB	EBT	38	983	EBT	46	983
	WB	WBT	72	1822	WBT	75	1822
	NB	NBR	65	190	NBR	52	190
Horizon Mitigated Build (Year 2045)	EB	EBT	37	983	EBT	46	983
	WB	WBT	72	1822	WBT	77	1822
	NB	NBR	65	190	NBR	53	190

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – Watson Ave NW at RTC South

No mitigations are proposed for Watson Avenue NW at RTC South in any future No Build or Build scenario.

6.18 RTC East at RTC South

The intersection of RTC East at RTC South identified as intersection 18 in **Figure 1**. This intersection is a new intersection that is proposed to be constructed in Phase 2 of the development. Based on the warrant analysis performed for the proposed intersection, the intersection could operate under either all-way stop control or roundabout control; signal control is not warranted. The intersection is proposed to be a mini roundabout and HCS was used to analyze roundabout control at this intersection.

RTC East and RTC South will be realigned as needed to develop a 4-legged intersection; see previous **Figure 7**. The mini-roundabout is proposed to be constructed in Phase 2 of the development. No additional mitigations are required in any future phase.

Under the Mitigated Build scenarios (Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS A. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Table 81 and **Table 82** detail the traffic operations and queueing results for RTC East at RTC South through the Phase2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 81 – RTC East at RTC South – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	3.6 / A	4.9 / A	EBT	5.8 / A	5.1 / A
	WB	WBT	3.5 / A		WBT	4.8 / A	
	NB	NBT	3.7 / A		NBT	4.8 / A	
	SB	SBT	5.6 / A		SBT	4.5 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	3.6 / A	4.9 / A	EBT	5.8 / A	5.1 / A
	WB	WBT	3.5 / A		WBT	4.8 / A	
	NB	NBT	3.7 / A		NBT	4.8 / A	
	SB	SBT	5.6 / A		SBT	4.5 / A	
Phase 3 Build (Year 2029)	EB	EBT	4.4 / A	5.7 / A	EBT	7.9 / A	6.8 / A
	WB	WBT	4.2 / A		WBT	6.7 / A	
	NB	NBT	4.5 / A		NBT	6.1 / A	
	SB	SBT	6.7 / A		SBT	6.0 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBT	4.4 / A	7.0 / A	EBT	7.9 / A	6.8 / A
	WB	WBT	4.2 / A		WBT	6.7 / A	
	NB	NBT	4.5 / A		NBT	6.1 / A	
	SB	SBT	6.7 / A		SBT	6.0 / A	
Horizon Build (Year 2045)	EB	EBT	4.4 / A	5.7 / A	EBT	7.9 / A	6.8 / A
	WB	WBT	4.2 / A		WBT	6.7 / A	
	NB	NBT	4.5 / A		NBT	6.1 / A	
	SB	SBT	6.7 / A		SBT	6.0 / A	
Horizon Mitigated Build (Year 2045)	EB	EBT	4.4 / A	5.7 / A	EBT	7.9 / A	6.8 / A
	WB	WBT	4.2 / A		WBT	6.7 / A	
	NB	NBT	4.5 / A		NBT	6.1 / A	
	SB	SBT	6.7 / A		SBT	6.0 / A	

Table 82 – RTC East at RTC South – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	20	1822	EBT	35	1822
	WB	WBT	20	467	WBT	20	467
	NB	NBT	20	421	NBT	20	421
	SB	SBT	40	209	SBT	25	209
Phase 2 Mitigated Build (Year 2028)	EB	EBT	20	1822	EBT	35	1822
	WB	WBT	20	467	WBT	20	467
	NB	NBT	20	421	NBT	20	421
	SB	SBT	40	209	SBT	25	209
Phase 3 Build (Year 2029)	EB	EBT	21	1822	EBT	55	1822
	WB	WBT	20	467	WBT	30	467
	NB	NBT	21	421	NBT	20	421
	SB	SBT	79	209	SBT	40	209
Phase 3 Mitigated Build (Year 2029)	EB	EBT	21	1822	EBT	55	1822
	WB	WBT	20	467	WBT	30	467
	NB	NBT	21	421	NBT	20	421
	SB	SBT	79	209	SBT	40	209
Horizon Build (Year 2045)	EB	EBT	21	1822	EBT	55	1822
	WB	WBT	20	467	WBT	30	467
	NB	NBT	21	421	NBT	20	421
	SB	SBT	79	209	SBT	40	209
Horizon Mitigated Build (Year 2045)	EB	EBT	20	1822	EBT	55	1822
	WB	WBT	20	467	WBT	30	467
	NB	NBT	20	421	NBT	20	421
	SB	SBT	55	209	SBT	40	209
XXX – 95th% queues exceed available storage XXX – 95th% through queue exceeds adjacent turn lane storage							

Proposed Mitigations – RTC East at RTC South

In Phase 2, the intersection should be constructed as a new mini-roundabout controlled intersection. No mitigations beyond the initial construction are necessary in any future phase.

6.19 Marketplace Dr at E. RTC Access

The intersection of Marketplace Dr at E. RTC Access is identified as intersection 19 in **Figure 1**. Under existing conditions, the E. RTC Access roadway is blocked off with concrete barriers approximately 180 feet west of Marketplace Drive. The existing intersection is currently only used by vehicles using the access to make a U turn on Marketplace drive. This intersection and the E. RTC Access are expected to be reopened and the intersection is expected to operate under minor-street stop control under all future scenarios.

In the No Build 2027 scenario the concrete barriers are removed and the intersection is fully open. The intersection is expected to operate acceptably in all future phases.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS C or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.9 or lower).

Tables 83, 84, 85, and 86 detail the traffic operations and queueing results for 37th Street at 21st Avenue/Maplewood Square Access through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 83 – Marketplace Dr at E. RTC Access – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	-	-	0.4 / A	EBL	8.1 / A	0.8 / A
	NB	NBT	0.5 / A		NBT	1.1 / A	
	SB	SBT	0.3 / A		SBT	0.5 / A	
No Build (Year 2027)	EB	EBL	5.1 / A	0.3 / A	EBL	6.4 / A	0.8 / A
	NB	NBT	0.4 / A		NBT	1.0 / A	
	SB	SBT	0.2 / A		SBT	0.4 / A	
Mitigated No Build (Year 2027)	EB	EBL	5.8 / A	0.4 / A	EBL	6.2 / A	0.7 / A
	NB	NBT	0.4 / A		NBT	0.9 / A	
	SB	SBT	0.2 / A		SBT	0.4 / A	
Phase 1 Build (Year 2027)	EB	EBL	5.3 / A	1.0 / A	EBL	9.7 / A	2.6 / A
	NB	NBL	1.7 / A		NBL	3.7 / A	
	SB	SBT	0.3 / A		SBT	0.8 / A	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	5.1 / A	1.0 / A	EBL	10.0 / B	2.7 / A
	NB	NBL	1.6 / A		NBL	3.8 / A	
	SB	SBT	0.3 / A		SBT	0.8 / A	

Table 84 – Marketplace Dr at E. RTC Access – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBL	-	970	EBL	20	970
	NB	NBL	-	130	NBL	-	130
	SB	SBR	-	170	SBR	-	170
No Build (Year 2027)	EB	EBL	20	940	EBL	28	940
	NB	NBL	-	130	NBL	-	130
	SB	SBR	-	170	SBR	-	170
Mitigated No Build (Year 2027)	EB	EBL	20	940	EBL	26	940
	NB	NBL	-	130	NBL	-	130
	SB	SBR	-	170	SBR	-	170
Phase 1 Build (Year 2027)	EB	EBL	29	940	EBL	54	940
	NB	NBL	21	130	NBL	50	130
	SB	SBR	20	170	SBR	20	170
Phase 1 Mitigated Build (Year 2027)	EB	EBL	30	940	EBL	54	940
	NB	NBL	20	130	NBL	50	130
	SB	SBR	-	170	SBR	20	170

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 85 – Marketplace Dr at E. RTC Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	5.7 / A	1.1 / A	EBL	11.3 / B	2.8 / A
	NB	NBL	1.9 / A		NBL	4.0 / A	
	SB	SBT	0.4 / A		SBT	0.9 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	5.2 / A	1.0 / A	EBL	11.2 / B	2.8 / A
	NB	NBL	1.8 / A		NBL	4.2 / A	
	SB	SBT	0.4 / A		SBT	0.9 / A	
Phase 3 Build (Year 2029)	EB	EBL	5.3 / A	1.4 / A	EBL	11.2 / B	2.8 / A
	NB	NBL	2.1 / A		NBL	4.2 / A	
	SB	SBT	0.4 / A		SBT	0.9 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	5.6 / A	5.7 / A	EBL	18.7 / C	5.0 / A
	NB	NBL	2.0 / A		NBL	5.1 / A	
	SB	SBT	0.4 / A		SBT	1.1 / A	
Horizon Build (Year 2045)	EB	EBL	5.7 / A	1.5 / A	EBL	18.9 / C	5.1 / A
	NB	NBL	2.0 / A		NBL	5.5 / A	
	SB	SBT	0.4 / A		SBT	1.2 / A	
Horizon Mitigated Build (Year 2045)	EB	EBL	6.1 / A	1.6 / A	EBL	18.8 / C	5.0 / A
	NB	NBL	2.3 / A		NBL	5.4 / A	
	SB	SBT	0.4 / A		SBT	1.2 / A	

Table 86 – Marketplace Dr at E. RTC Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBL	29	940	EBL	58	940
	NB	NBL	22	130	NBL	51	130
	SB	SBR	20	170	SBR	20	170
Phase 2 Mitigated Build (Year 2028)	EB	EBL	29	940	EBL	60	940
	NB	NBL	20	130	NBL	51	130
	SB	SBR	-	170	SBR	20	170
Phase 3 Build (Year 2029)	EB	EBL	36	940	EBL	56	940
	NB	NBL	29	130	NBL	52	130
	SB	SBR	20	170	SBR	20	170
Phase 3 Mitigated Build (Year 2029)	EB	EBL	39	940	EBL	115	940
	NB	NBL	30	130	NBL	63	130
	SB	SBR	20	170	SBR	20	170
Horizon Build (Year 2045)	EB	EBL	39	940	EBL	116	940
	NB	NBL	33	130	NBL	72	130
	SB	SBR	20	170	SBT	20	347
Horizon Mitigated Build (Year 2045)	EB	EBL	38	940	EBL	114	940
	NB	NBL	35	130	NBL	68	130
	SB	SBR	20	170	SBT	20	347

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – Marketplace Dr at E. RTC Access

No mitigations beyond the removal of the concrete barriers and opening of the intersection are proposed for Marketplace Drive at East RTC Access in any future No Build or Build scenario.

6.20 Watson Ave at Internal Roadway

The intersection of Watson Avenue NW at Internal Roadway is identified as intersection 20 in **Figure 1**. This intersection does not currently exist and is proposed to be constructed in Phase 2. It is proposed as a minor-street stop control intersection. The intersection is proposed to be a T-intersection with single lanes on the northbound, southbound, and westbound approaches. The westbound approach would operate under stop control.

No additional mitigations are proposed beyond the installation of the intersection in Phase 2 of the development as the intersection operates acceptably.

Under the Mitigated Build scenarios (Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS A or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.9 or lower).

Table 87 and **Table 88** detail the traffic operations and queueing results for Watson Avenue at Internal Roadway through the Phase2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 87 – Watson Ave at Internal Roadway – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	WB	WBL	6.0 / A	1.5 / A	WBL	6.4 / A	1.3 / A
	NB	NBT	0.6 / A		NBT	0.8 / A	
	SB	SBT	0.1 / A		SBT	0.2 / A	
Phase 2 Mitigated Build (Year 2028)	WB	WBL	6.0 / A	1.4 / A	WBL	6.7 / A	1.3 / A
	NB	NBT	0.5 / A		NBT	0.8 / A	
	SB	SBT	0.1 / A		SBT	0.2 / A	
Phase 3 Build (Year 2029)	WB	WBL	7.5 / A	1.8 / A	WBL	6.6 / A	1.3 / A
	NB	NBT	0.9 / A		NBT	0.7 / A	
	SB	SBL	3.1 / A		SBT	0.2 / A	
Phase 3 Mitigated Build (Year 2029)	WB	WBL	7.5 / A	2.0 / A	WBL	8.5 / A	2.1 / A
	NB	NBT	1.1 / A		NBT	1.3 / A	
	SB	SBL	3.8 / A		SBL	2.5 / A	
Horizon Build (Year 2045)	WB	WBL	7.9 / A	2.1 / A	WBL	8.8 / A	2.2 / A
	NB	NBT	1.1 / A		NBT	1.3 / A	
	SB	SBL	3.5 / A		SBL	3.4 / A	
Horizon Mitigated Build (Year 2045)	WB	WBL	7.7 / A	2.0 / A	WBL	8.7 / A	2.2 / A
	NB	NBT	1.0 / A		NBT	1.2 / A	
	SB	SBL	3.6 / A		SBL	3.3 / A	

Table 88 – Watson Ave at Internal Roadway – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	WB	WBT	59	2577	WBT	58	2577
	NB	NBT	20	543	NBT	-	543
	SB	SBT	-	400	SBT	-	400
Phase 2 Mitigated Build (Year 2028)	WB	WBT	59	2577	WBT	59	2577
	NB	NBT	-	543	NBT	-	543
	SB	SBT	-	400	SBT	-	400
Phase 3 Build (Year 2029)	WB	WBT	65	2577	WBT	58	2577
	NB	NBT	20	543	NBT	-	543
	SB	SBT	20	400	SBT	-	400
Phase 3 Mitigated Build (Year 2029)	WB	WBT	64	2577	WBT	71	2577
	NB	NBT	20	543	NBT	-	543
	SB	SBT	21	400	SBT	20	400
Horizon Build (Year 2045)	WB	WBT	71	2577	WBT	76	2577
	NB	NBT	20	543	NBT	20	543
	SB	SBT	21	400	SBT	20	400
Horizon Mitigated Build (Year 2045)	WB	WBT	70	2577	WBT	74	2577
	NB	NBT	-	543	NBT	-	543
	SB	SBT	20	400	SBT	20	400
XXX – 95th% queues exceed available storage XXX – 95th% through queue exceeds adjacent turn lane storage							

Proposed Mitigations – Watson Ave at Internal Roadway

In Phase 2, the intersection should be constructed as a new minor stop controlled T-intersection. No mitigations beyond the initial construction are necessary in any future phase.

6.21 Internal Roadway EB/WB at Internal Roadway NW/SE

The intersection of Internal Roadway EB/WB at Internal Roadway NW/SE is identified as intersection 21 in **Figure 1**. This intersection does not currently exist and is proposed to be constructed in Phase 2 of the development. It is proposed as a minor-street stop-controlled intersection. The intersection is planned as a 4-legged intersection with single lanes on each approach. The eastbound and westbound approaches would operate under stop control.

No additional mitigations are proposed beyond the installation of the intersection in Phase 2 of the development as the intersection operates acceptably.

Under the Mitigated Build scenarios (Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS A. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Table 89 and **Table 90** detail the traffic operations and queueing results for Internal Roadway EB/WB at Internal Roadway NW/SE through the Phase2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 89 – Internal Roadway EB/WB at Internal Roadway NW/SE – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBT	0.2 / A	1.7 / A	EBT	1.0 / A	1.3 / A
	WB	WBL	2.3 / A		WBL	2.5 / A	
	NB	NBL	5.0 / A		NBL	5.9 / A	
	SB	SBR	0.0 / A		SBR	0.0 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBT	0.4 / A	1.8 / A	EBT	0.8 / A	1.2 / A
	WB	WBL	1.9 / A		WBL	2.3 / A	
	NB	NBL	5.1 / A		NBL	5.8 / A	
	SB	SBR	0.0 / A		SBR	0.0 / A	
Phase 3 Build (Year 2029)	EB	EBL	1.9 / A	2.2 / A	EBT	0.8 / A	1.2 / A
	WB	WBL	2.0 / A		WBL	2.3 / A	
	NB	NBL	5.3 / A		NBL	5.6 / A	
	SB	SBT	6.4 / A		SBR	0.0 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	2.0 / A	2.3 / A	EBL	2.2 / A	1.7 / A
	WB	WBL	2.2 / A		WBL	2.6 / A	
	NB	NBL	5.6 / A		NBL	6.3 / A	
	SB	SBT	6.5 / A		SBT	6.6 / A	
Horizon Build (Year 2045)	EB	EBL	1.8 / A	2.3 / A	EBL	2.4 / A	1.7 / A
	WB	WBL	2.2 / A		WBL	2.6 / A	
	NB	NBL	5.5 / A		NBL	6.2 / A	
	SB	SBT	6.5 / A		SBT	7.1 / A	
Horizon Mitigated Build (Year 2045)	EB	EBL	2.2 / A	2.3 / A	EBL	2.3 / A	1.6 / A
	WB	WBL	1.9 / A		WBL	2.6 / A	
	NB	NBL	5.7 / A		NBL	6.5 / A	
	SB	SBT	6.3 / A		SBT	6.8 / A	

Table 90 – Internal Roadway EB/WB at Internal Roadway NW/SE– Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	-	558	EBT	20	558
	WB	WBT	20	781	WBT	24	781
	NB	NBT	55	2577	NBT	56	2577
	SB	SBT	-	373	SBT	-	373
Phase 2 Mitigated Build (Year 2028)	EB	EBT	-	558	EBT	-	558
	WB	WBT	20	781	WBT	21	781
	NB	NBT	57	2577	NBT	55	2577
	SB	SBT	-	373	SBT	-	373
Phase 3 Build (Year 2029)	EB	EBT	20	558	EBT	-	558
	WB	WBT	20	781	WBT	20	781
	NB	NBT	53	2577	NBT	55	2577
	SB	SBT	45	373	SBT	20	373
Phase 3 Mitigated Build (Year 2029)	EB	EBT	20	558	EBT	20	558
	WB	WBT	20	781	WBT	24	781
	NB	NBT	59	2577	NBT	61	2577
	SB	SBT	41	373	SBT	39	373
Horizon Build (Year 2045)	EB	EBT	20	558	EBT	20	558
	WB	WBT	20	781	WBT	23	781
	NB	NBT	58	2577	NBT	58	2577
	SB	SBT	44	373	SBT	41	373
Horizon Mitigated Build (Year 2045)	EB	EBT	20	558	EBT	20	558
	WB	WBT	20	781	WBT	26	781
	NB	NBT	58	2577	NBT	56	2577
	SB	SBT	44	373	SBT	39	373
XXX – 95th% queues exceed available storage XXX – 95th% through queue exceeds adjacent turn lane storage							

Proposed Mitigations – Internal Roadway EB/WB at Internal Roadway NW/SE

In Phase 2, the intersection should be constructed as a new minor stop controlled intersection. No mitigations beyond the initial construction are necessary in any future phase.

6.22 Valleyhigh Dr at Watson Ave

The intersection of Valleyhigh Drive at Watson Avenue is identified as intersection 22 in **Figure 1**. The existing intersection operates under minor-street stop-control. A warrant analysis was performed and found that the intersection meets traffic signal warrants under Phase 3 conditions. The intersection is therefore planned to be converted to a traffic signal in Phase 3 of the development.

Under Existing, No Build 2027, and Phase 1 conditions, the intersection operates acceptably and within Rochester's Traffic Service Standards without any need for further mitigations.

Under Phase 2 conditions, with just a single lane on the westbound approach, the approach operates with a V/C ratio of 0.91 in the PM peak hour. This exceeds the 0.8 V/C ratio limit required in Rochester's Traffic Service Standards. Therefore, in the Mitigated Phase 2 scenario, a dedicated westbound left turn lane with 150 feet of storage is added to the westbound approach. The westbound approach would now have a dedicated left turn lane and a dedicated right turn lane. With two lanes on the westbound approach, the approach operates with a V/C ratio of 0.64.

In the Mitigated Phase 3 scenario, the intersection is converted to a traffic signal as volumes are now high enough to meet signal warrants and the westbound approach is not adequately served by minor-street stop control, with V/C ratios of 1.32. Traffic signal control allows the intersection to stay in compliance within Rochester's Traffic Service Standards. The lane geometries and turn lane storage lengths stay the same as under Mitigated Phase 2 conditions.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS B or better in each scenario and all turning movements operate at LOS C or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 91, 92, 93, and 94 detail the traffic operations and queueing results for Valleyhigh Drive at Watson Avenue through each scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 91 – Valleyhigh Dr at Watson Ave – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	WB	WBL	8.7 / A	1.3 / A	WBL	10.4 / B	1.5 / A
	NB	NBR	0.8 / A		NBR	0.6 / A	
	SB	SBL	3.8 / A		SBL	4.0 / A	
No Build (Year 2027)	WB	WBL	11.5 / B	1.4 / A	WBL	11.6 / B	2.1 / A
	NB	NBR	1.0 / A		NBR	0.7 / A	
	SB	SBL	4.7 / A		SBL	3.6 / A	
Mitigated No Build (Year 2027)	WB	WBL	10.8 / B	1.3 / A	WBL	12.4 / B	2.3 / A
	NB	NBR	1.0 / A		NBR	0.6 / A	
	SB	SBL	4.6 / A		SBL	3.4 / A	
Phase 1 Build (Year 2027)	WB	WBL	11.7 / B	1.6 / A	WBL	13.0 / B	2.6 / A
	NB	NBR	1.0 / A		NBR	0.8 / A	
	SB	SBL	4.7 / A		SBL	3.8 / A	
Phase 1 Mitigated Build (Year 2027)	WB	WBL	11.9 / B	1.7 / A	WBL	13.4 / B	2.7 / A
	NB	NBR	1.0 / A		NBR	0.8 / A	
	SB	SBL	5.0 / A		SBL	4.2 / A	

Table 92 – Valleyhigh Dr at Watson Ave – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	WB	WBT	43	1199	WBT	59	1199
	NB	NBR	20	305	NBR	20	305
	SB	SBL	37	260	SBL	43	260
No Build (Year 2027)	WB	WBT	41	543	WBT	87	543
	NB	NBR	20	305	NBR	20	305
	SB	SBL	57	260	SBL	27	260
Mitigated No Build (Year 2027)	WB	WBT	37	543	WBT	94	543
	NB	NBT	20	977	NBT	-	977
	SB	SBL	53	260	SBL	27	260
Phase 1 Build (Year 2027)	WB	WBT	49	543	WBT	107	543
	NB	NBR	20	305	NBT	20	977
	SB	SBL	54	260	SBL	37	260
Phase 1 Mitigated Build (Year 2027)	WB	WBT	49	543	WBT	104	543
	NB	NBR	20	305	NBR	20	305
	SB	SBL	59	260	SBL	41	260

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 93 – Valleyhigh Dr at Watson Ave – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	WB	WBL	15.6 / C	2.4 / A	WBL	16.8 / C	3.3 / A
	NB	NBR	1.1 / A		NBR	0.8 / A	
	SB	SBL	5.8 / A		SBL	5.0 / A	
Phase 2 Mitigated Build (Year 2028)	WB	WBL	15.8 / C	2.3 / A	WBL	15.7 / C	2.5 / A
	NB	NBR	0.9 / A		NBR	0.7 / A	
	SB	SBL	5.8 / A		SBL	4.7 / A	
Phase 3 Build (Year 2029)	WB	WBL	20.8 / C	3.1 / A	WBL	18.6 / B	2.8 / A
	NB	NBR	1.4 / A		NBR	0.8 / A	
	SB	SBL	7.4 / A		SBL	5.0 / A	
Phase 3 Mitigated Build (Year 2029)	WB	WBL	19.1 / B	8.4 / A	WBL	17.7 / B	9.7 / A
	NB	NBT	11.8 / B		NBT	14.2 / B	
	SB	SBL	10.3 / B		SBL	12.2 / B	
Horizon Build (Year 2045)	WB	WBL	19.1 / B	9.2 / A	WBL	19.0 / B	10.7 / B
	NB	NBT	12.8 / B		NBT	15.4 / B	
	SB	SBL	11.5 / B		SBL	13.8 / B	
Horizon Mitigated Build (Year 2045)	WB	WBL	20.3 / C	9.0 / A	WBL	18.2 / B	10.1 / B
	NB	NBT	12.2 / B		NBT	14.1 / B	
	SB	SBL	11.5 / B		SBL	12.4 / B	

Table 94 – Valleyhigh Dr at Watson Ave – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	WB	WBT	76	543	WBT	129	543
	NB	NBR	20	305	NBR	20	305
	SB	SBL	69	260	SBL	58	260
Phase 2 Mitigated Build (Year 2028)	WB	WBL	57	150	WBL	78	150
	NB	NBT	20	977	NBR	20	305
	SB	SBL	74	260	SBL	53	260
Phase 3 Build (Year 2029)	WB	WBL	73	150	WBL	92	150
	NB	NBR	24	305	NBR	20	305
	SB	SBL	88	260	SBL	54	260
Phase 3 Mitigated Build (Year 2029)	WB	WBL	69	150	WBL	109	150
	NB	NBT	145	977	NBT	145	977
	SB	SBL	115	260	SBL	108	260
Horizon Build (Year 2045)	WB	WBL	71	150	WBL	119	150
	NB	NBT	171	977	NBT	174	977
	SB	SBL	119	260	SBL	108	260
Horizon Mitigated Build (Year 2045)	WB	WBL	76	150	WBL	107	150
	NB	NBT	170	977	NBT	167	977
	SB	SBL	111	260	SBT	104	1817

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – Valleyhigh Dr at Watson Ave

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 does not require any mitigations. The following mitigations should be made with Phase 2 and Phase 3 to accommodate the development:

Build Mitigated (Year 2028) – Phase 2

- Add a dedicated westbound left turn lane with 150 feet of storage.

Build Mitigated (Year 2029, 2045) – Phase 3 Full Build Out

- Convert the intersection to signalized control. The lane configuration of the intersection stays the same and lanes keep the same turn lane storage lengths.

6.23 Marketplace Dr at SE Multi-Family Access

The intersection of Marketplace Drive at SE Multi-Family Access is identified as intersection 23 in **Figure 1**. This intersection does not currently exist and is proposed to be constructed in Build Phase 2. It is proposed as a minor-street stop-controlled intersection.

The intersection is constructed in Phase 2 of the development. The northbound approach includes a dedicated left turn lane and a dedicated through lane. The southbound approach includes a dedicated right turn lane and a dedicated through lane. The east approach includes a shared left/right lane.

No additional mitigations are required in any future phase as the intersection operates acceptably.

Under the Mitigated Build scenarios (Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS A in each scenario and all turning movements operate at LOS C or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Table 95 and **Table 96** detail the traffic operations and queueing results for Marketplace Drive at SE Multi-Family Access through the Phase2, Phase 3, and Horizon Year scenarios. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 95 – Marketplace Dr at SE Multi-Family Access – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	5.7 / A	1.8 / A	EBL	17.4 / C	5.1 / A
	NB	NBL	1.6 / A		NBL	4.3 / A	
	SB	SBT	0.9 / A		SBT	2.3 / A	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	6.0 / A	1.8 / A	EBL	15.9 / C	4.7 / A
	NB	NBL	1.7 / A		NBL	4.1 / A	
	SB	SBT	1.0 / A		SBT	2.3 / A	
Phase 3 Build (Year 2029)	EB	EBL	6.1 / A	1.8 / A	EBL	15.7 / C	4.7 / A
	NB	NBL	1.8 / A		NBL	3.9 / A	
	SB	SBT	1.0 / A		SBT	2.4 / A	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	6.2 / A	1.9 / A	EBL	23.1 / C	6.2 / A
	NB	NBL	1.7 / A		NBL	4.5 / A	
	SB	SBT	1.1 / A		SBT	2.3 / A	
Horizon Build (Year 2045)	EB	EBL	6.5 / A	1.9 / A	EBL	23.9 / C	6.4 / A
	NB	NBL	1.7 / A		NBL	4.5 / A	
	SB	SBT	1.1 / A		SBT	2.4 / A	
Horizon Mitigated Build (Year 2045)	EB	EBL	5.9 / A	1.8 / A	EBL	22.3 / C	6.0 / A
	NB	NBL	1.7 / A		NBL	4.6 / A	
	SB	SBT	1.1 / A		SBT	2.4 / A	

Table 96 – Marketplace Dr at SE Multi-Family Access – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	57	321	EBT	142	321
	NB	NBL	31	130	NBL	65	130
	SB	SBR	20	170	SBR	20	170
Phase 2 Mitigated Build (Year 2028)	EB	EBT	55	321	EBT	134	321
	NB	NBL	32	130	NBL	61	130
	SB	SBR	-	170	SBR	20	170
Phase 3 Build (Year 2029)	EB	EBT	57	321	EBT	136	321
	NB	NBL	36	130	NBL	63	130
	SB	SBR	20	170	SBT	20	1854
Phase 3 Mitigated Build (Year 2029)	EB	EBT	62	321	EBT	179	321
	NB	NBL	36	130	NBL	68	130
	SB	SBR	20	170	SBR	20	170
Horizon Build (Year 2045)	EB	EBT	62	321	EBT	177	321
	NB	NBL	35	130	NBL	66	130
	SB	SBR	20	170	SBR	20	170
Horizon Mitigated Build (Year 2045)	EB	EBT	60	400	EBT	162	321
	NB	NBL	32	130	NBL	73	130
	SB	SBR	20	170	SBT	20	1854

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – Marketplace Dr at SE Multi-Family Access

In Phase 2, the intersection should be constructed as a new minor stop controlled intersection. No mitigations beyond the initial construction are necessary in any future phase.

6.24 19th St at W. Frontage Rd

The intersection of 19th Street at W. Frontage is identified as intersection 24 in **Figure 1**. This intersection operates under traffic signal control in the existing conditions and all future scenarios.

Under Existing, No Build 2027, and Phase 1 conditions, the intersection operate acceptably with the exception of queueing in the Existing scenario. The existing AM 95th percentile westbound left queue extends to 118 out of 110 feet of available storage, under No Build 2027 the westbound left queue is approximately the same at 105 feet out of an available 110 feet of storage. Signal

timing adjustments keep the westbound left turning movement within available queue in the No Build 2027 Mitigated, and Phase 1 scenarios.

In the Mitigated Phase 2 scenario, a lane is added to the southbound approach as southbound left volumes are 352 vehicles in the PM peak hour, which requires a dual southbound left to bring the intersection operations within Rochester's Traffic Service Standards criteria. The lane would be added to the west side of the approach. The three lanes of the southbound approach are redesignated as a shared through/right lane and dual southbound left turn lanes. See **Appendix E** for the proposed intersection layout of 19th Street at W. Frontage Road.

No additional mitigations besides signal timing adjustments are being proposed in any future phase.

Even with the Phase 2 mitigation, queueing concerns will remain at the intersection. In the Mitigated Phase 2, Mitigated Phase 3 and Mitigated Horizon Year scenarios, eastbound left and westbound left turning movement have 95th percentile queues that extend past the available queue storage.

Eastbound left 95th percentile queues extend to between 108 and 120 out of an available 100 feet of storage in the PM Phase 2, Phase 3, and Horizon Year mitigated scenarios. The existing eastbound left turn lane is short due to the roadway width tightening to the west of the intersection. The existing taper is also short at only 40 ft. Eastbound through queues extend to 300 feet blocking access to the eastbound left turn lane. Eastbound left and through land vehicle may mix when queues are at their longest. Due to space constrains, no mitigations are planned for the eastbound left turn lane.

Westbound left 95th percentile queues extend to 133 to 144 feet out of an available 110 feet of storage in the Phase 2, Phase 3, and Horizon Year Mitigated PM scenarios. The westbound left turn lane is very limited in its ability to be extended due to the close spacing between the W frontage Road intersection and the SPUI interchange. Generally, the Westbound left lane is not seen filling up, instead westbound through queues are temporarily blocking access to the westbound left lane causing the left and through vehicles to mix. This mixture of through and left vehicles cause the westbound left queue to register as queued to a length outside the available storage. Due to the close spacing of the intersections this is unavoidable. The westbound left phase has a leading protected phase before switching to permissive mode once the eastbound through phase begins in conjunction with the westbound through phases. Westbound left and westbound through queues clear each cycle.

Westbound through queues have queueing concerns in the Mitigated Phase 2, Mitigated Phase 3 and Mitigated Horizon Year scenarios. Due to the existing geometrics of the US 52 SPUI and the closely spaced 19th Street at W. Frontage Road intersection there is only 265 feet of storage space for westbound vehicles between the intersections. In the Mitigated Phase 2, Mitigated Phase 3, and Mitigated Horizon Year PM scenarios, westbound through queues extend to between 321 and 345 feet out of an available 265 feet. Simtraffic simulations show that the westbound queues when at maximum length are rolling in coordination with the SPUI interchange signal and clear during the westbound green light phase. There does not appear to be any negative effects to the SPUI interchange operations. No run-away queues are observed that build over multiple cycles.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs with acceptable level of service and volume to capacity ratios, complying

with Rochester's Traffic Service Standards. The overall intersection performs at LOS C or better in each scenario, all turning movements operate at LOS D or better, and V/C ratios are acceptable (0.8 or lower). Besides the discussed eastbound left and westbound through queues, no other 95th percentile queues spill out of their available storage,

Tables 97, 98, 99, and 100 detail the traffic operations and queueing results for 19th Street at W. Frontage Road through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 97 – 19th St at W. Frontage Rd – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	13.1 / B	11.7 / B	EBL	19.1 / B	16.4 / B
	WB	WBL	13.2 / B		WBL	17.2 / B	
	NB	NBT	**57.9 / E**		NBT	42.9 / D	
	SB	SBL	46.4 / D		SBL	47.8 / D	
No Build (Year 2027)	EB	EBL	13.0 / B	11.7 / B	EBL	16.2 / B	16.1 / B
	WB	WBL	12.9 / B		WBL	15.6 / B	
	NB	NBT	45.2 / D		NBT	44.2 / D	
	SB	SBL	45.2 / D		SBL	44.2 / D	
Mitigated No Build (Year 2027)	EB	EBL	13.8 / B	9.6 / A	EBL	20.6 / C	14.2 / B
	WB	WBL	11.9 / B		WBL	16.6 / B	
	NB	NBT	48.1 / D		NBT	45.2 / D	
	SB	SBL	44.2 / D		SBL	37.8 / D	
Phase 1 Build (Year 2027)	EB	EBL	15.1 / B	9.7 / A	EBL	20.6 / C	15.8 / B
	WB	WBL	11.4 / B		WBL	16.6 / B	
	NB	NBT	53.7 / D		NBT	41.6 / D	
	SB	SBL	45.6 / D		SBL	44.1 / D	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	16.4 / B	9.8 / A	EBL	21.3 / C	16.0 / B
	WB	WBL	11.6 / B		WBL	17.1 / B	
	NB	NBT	48.3 / D		NBT	43.2 / D	
	SB	SBL	42.8 / D		SBL	45.1 / D	

Table 98 – 19th St at W. Frontage Rd – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	146	1122	EBT	239	1122
	WB	**WBL[1]**	**118**	**110**	WBT	248	265
	NB	NBR	77	445	NBR	113	445
	SB	SBL	113	250	SBL	186	250
No Build (Year 2027)	EB	EBT	159	1122	EBT	233	1122
	WB	WBT	201	265	WBT	236	265
	NB	NBR	59	445	NBR	105	445
	SB	SBL	114	250	SBL	177	250
Mitigated No Build (Year 2027)	EB	EBT	134	1122	EBT	226	1122
	WB	WBT	97	265	WBT	136	265
	NB	NBR	55	445	NBR	109	445
	SB	SBL	119	250	SBL	181	250
Phase 1 Build (Year 2027)	EB	EBT	133	1122	EBT	240	1122
	WB	WBT	109	265	WBT	161	265
	NB	NBR	55	445	NBR	118	445
	SB	SBL	124	250	SBL	239	250
Phase 1 Mitigated Build (Year 2027)	EB	EBT	124	1122	EBT	229	1122
	WB	WBT	120	265	WBT	165	265
	NB	NBR	57	445	NBR	109	445
	SB	SBL	123	250	SBL	238	250

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane queues extend past turn lane storage in addition to turn lane queues extending past available storage.

Table 99 – 19th St at W. Frontage Rd – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	16.2 / B	13.1 / B	EBL	24.6 / C	22.8 / C
	WB	WBL	12.0 / B		WBL	17.6 / B	
	NB	NBT	53.7 / D		NBT	42.2 / D	
	SB	SBL	**64.9 / E**		SBL	**80.1 / F**	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	16.2 / B	14.0 / B	EBL	24.5 / C	22.2 / C
	WB	WBL	14.2 / B		WBL	20.2 / C	
	NB	NBL	48.4 / D		NBL	48.4 / D	
	SB	SBL	46.3 / D		SBL	42.7 / D	
Phase 3 Build (Year 2029)	EB	EBL	16.9 / B	15.1 / B	EBL	22.9 / C	21.1 / C
	WB	WBL	14.1 / B		WBL	19.3 / B	
	NB	NBL	**56.2 / E**		NBL	48.0 / D	
	SB	SBL	51.9 / D		SBL	41.5 / D	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	16.8 / B	15.4 / B	EBL	23.7 / C	22.5 / C
	WB	WBL	13.8 / B		WBL	20.1 / C	
	NB	NBT	52.6 / D		NBL	46.3 / D	
	SB	SBL	54.0 / D		SBL	43.8 / D	
Horizon Build (Year 2045)	EB	EBL	18.1 / B	15.0 / B	EBL	26.6 / C	23.7 / C
	WB	WBL	14.3 / B		WBL	20.0 / C	
	NB	NBL	53.4 / D		NBL	48.6 / D	
	SB	SBL	50.6 / D		SBL	46.5 / D	
Horizon Mitigated Build (Year 2045)	EB	EBL	17.6 / B	15.3 / B	EBL	26.7 / C	24.4 / C
	WB	WBL	14.4 / B		WBL	21.8 / C	
	NB	NBT	54.6 / D		NBL	47.3 / D	
	SB	SBL	50.0 / D		SBL	48.5 / D	

Table 100 – 19th St at W. Frontage Rd – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	147	1122	EBT	250	1122
	WB	WBT	131	265	WBT	213	265
	NB	NBR	59	445	NBR	124	445
	SB	SBL	237	250	**SBL**	**398**	**250**
Phase 2 Mitigated Build (Year 2028)	EB	EBT	154	1116	**EBL[1]**	**110**	**100**
	WB	**WBL[1]**	**118**	**110**	**WBT**	**321**	**265**
	NB	NBR	59	445	NBR	137	445
	SB	SBL	167	280	SBL	225	280
Phase 3 Build (Year 2029)	EB	EBT	166	1116	EBT	278	1116
	WB	WBT	214	265	**WBT**	**298**	**265**
	NB	NBR	59	445	NBR	132	445
	SB	SBL	202	280	SBL	217	280
Phase 3 Mitigated Build (Year 2029)	EB	EBT	166	1116	**EBL[1]**	**108**	**100**
	WB	WBT	220	265	**WBT**	**324**	**265**
	NB	NBR	55	445	NBR	134	445
	SB	SBL	218	280	SBL	235	280
Horizon Build (Year 2045)	EB	EBT	172	1116	**EBL[1]**	**121**	**100**
	WB	WBT	225	265	**WBT[1]**	**334**	**265**
	NB	NBR	59	445	NBR	146	445
	SB	SBL	195	280	SBL	254	280
Horizon Mitigated Build (Year 2045)	EB	EBT	176	1116	**EBL[1]**	**120**	**100**
	WB	WBT	230	265	**WBT[1]**	**345**	**265**
	NB	NBR	62	445	NBR	144	445
	SB	SBL	196	280	SBL	272	280

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage
[1] Through lane 95th percentile queues extend past available storage in addition to turn lane 95th percentile queues extending past available storage

Proposed Mitigations – 19th St at W. Frontage Rd

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 does not require any mitigations. The following mitigation should be made with Phase 2 to accommodate the development:

Build Mitigated (Year 2028) – Phase 2

- Reconfigure the southbound approach with an added lane. The existing through-right lane will be converted to a dual left turn lane and a new through-right lane will be added to the intersection with 300 feet of storage and a 50-foot taper.

Development Phase 3 does not require additional mitigations.

See **Appendix E** for the proposed intersection layout of 19th Street at W. Frontage Road.

6.25 19th St at US 52 Interchange (SPUI)

The intersection of 19th Street at the US 52 Single Point Urban Interchange (SPUI) is identified as intersection 25 in **Figure 1**. This intersection operates under traffic signal control in all scenarios.

Under Existing, No Build 2027, and Phase 1 conditions, the intersection operates acceptably and within Rochester's Traffic Service Standards without any need for further mitigations.

Under Phase 2 conditions, the northbound left turning movement is 492 vehicles in the AM and 528 vehicles in the PM peak hour, both are considered high for a single left turn lane. With a single northbound left turn lane, V/C ratios are above 0.8 in both peak hours. In the Mitigated Build Phase 2 scenario, a dual northbound left turn lane is added to the intersection. To provide enough width for two northbound left turn lanes, adjustments to the curbs of the triangular island that separates the northbound left and northbound right turning movements are proposed. On the northbound ramp, approaching the intersection the existing 2 lanes would both be designated as left turn lanes and a new right turn lane is added with 340 feet of storage and a 180-foot taper. See **Appendix E** for the proposed intersection layout of 19th Street at US 52 Interchange (SPUI).

No other mitigations are required in any future phases of the development.

Under the Mitigated Build scenarios (Phase 1, Phase 2, Phase 3, and Horizon Year), the intersection performs acceptably, complying with Rochester's Traffic Service Standards for level of service, queueing, and volume to capacity ratios. The overall intersection performs at LOS C in each scenario and all turning movements operate at LOS D or better. 95th percentile queues do not spill out of their available storage, and V/C ratios are acceptable (0.8 or lower).

Tables 101, 102, 103, and 104 detail the traffic operations and queueing results for 19th Street at US 52 Interchange (SPUI) through each scenario. Full MOE tables with delays, level of service and queuing information for each turning movement are available in **Appendix B.**

Table 101 – 19th St at US 52 Interchange (SPUI) – Existing and Year 2027 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Existing (Year 2024)	EB	EBL	47.0 / D	30.4 / C	EBL	48.0 / D	31.4 / C
	WB	WBL	36.4 / D		WBL	36.8 / D	
	NB	NBL	34.0 / C		NBL	38.7 / D	
	SB	SBL	32.9 / C		SBL	30.2 / C	
No Build (Year 2027)	EB	EBL	47.2 / D	30.5 / C	EBL	46.4 / D	31.0 / C
	WB	WBL	36.6 / D		WBL	37.7 / D	
	NB	NBL	34.9 / C		NBL	37.9 / D	
	SB	SBL	33.1 / C		SBL	30.3 / C	
Mitigated No Build (Year 2027)	EB	EBL	42.7 / D	30.7 / C	EBL	40.7 / D	31.3 / C
	WB	WBL	38.0 / D		WBL	45.1 / D	
	NB	NBL	34.3 / C		NBL	37.4 / D	
	SB	SBL	34.1 / C		SBL	30.8 / C	
Phase 1 Build (Year 2027)	EB	EBL	45.1 / D	30.5 / C	EBL	41.8 / D	31.7 / C
	WB	WBL	38.0 / D		WBL	43.6 / D	
	NB	NBL	33.8 / C		NBL	38.1 / D	
	SB	SBL	32.6 / C		SBL	29.8 / C	
Phase 1 Mitigated Build (Year 2027)	EB	EBL	44.4 / D	30.8 / C	EBL	42.0 / D	31.8 / C
	WB	WBL	38.6 / D		WBL	43.4 / D	
	NB	NBL	34.2 / C		NBL	37.4 / D	
	SB	SBL	34.3 / C		SBL	29.5 / C	

Table 102 – 19th St at US 52 Interchange (SPUI) – Existing and Year 2027 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Existing (Year 2024)	EB	EBT	162	284	EBT	190	284
	WB	WBL	232	555	WBL	230	555
	NB	NBL	316	860	NBL	334	860
	SB	SBL	315	865	SBL	176	865
No Build (Year 2027)	EB	EBT	145	284	EBT	197	284
	WB	WBL	231	555	WBL	221	555
	NB	NBL	332	860	NBL	312	860
	SB	SBL	314	865	SBL	179	865
Mitigated No Build (Year 2027)	EB	EBT	149	284	EBL	151	175
	WB	WBL	236	555	WBL	243	555
	NB	NBL	312	860	NBL	317	860
	SB	SBL	314	865	SBL	181	865
Phase 1 Build (Year 2027)	EB	EBT	148	284	EBT	182	284
	WB	WBL	234	555	WBL	226	555
	NB	NBL	327	860	NBL	337	860
	SB	SBL	304	865	SBL	182	865
Phase 1 Mitigated Build (Year 2027)	EB	EBT	145	284	EBT	169	284
	WB	WBL	237	555	WBL	231	555
	NB	NBL	332	860	NBL	336	860
	SB	SBL	307	865	SBL	182	865

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Table 103 – 19th St at US 52 Interchange (SPUI) – Year 2028, 2029, and 2045 Traffic Operations

Scenario	Approach	AM PEAK HOUR			PM PEAK HOUR		
		Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)	Highest Delay Turning Movement	Turning Movement Delay (sec/LOS)	Intersection (sec/LOS)
Phase 2 Build (Year 2028)	EB	EBL	46.6 / D	31.0 / C	EBL	44.5 / D	33.2 / C
	WB	WBL	38.8 / D		WBL	44.8 / D	
	NB	NBL	33.7 / C		NBL	35.6 / D	
	SB	SBL	32.1 / C		SBL	26.6 / C	
Phase 2 Mitigated Build (Year 2028)	EB	EBL	44.0 / D	30.4 / C	EBL	42.2 / D	31.9 / C
	WB	WBL	40.1 / D		WBL	44.4 / D	
	NB	NBL	31.6 / C		NBL	38.2 / D	
	SB	SBL	35.8 / D		SBL	31.0 / C	
Phase 3 Build (Year 2029)	EB	EBL	44.7 / D	30.9 / C	EBL	42.7 / D	32.0 / C
	WB	WBL	40.5 / D		WBL	44.0 / D	
	NB	NBL	32.4 / C		NBL	38.6 / D	
	SB	SBL	34.9 / C		SBL	33.6 / C	
Phase 3 Mitigated Build (Year 2029)	EB	EBL	45.1 / D	30.6 / C	EBL	42.7 / D	33.4 / C
	WB	WBL	39.7 / D		WBL	45.2 / D	
	NB	NBL	31.5 / C		NBL	41.5 / D	
	SB	SBL	35.4 / D		SBL	32.3 / C	
Horizon Build (Year 2045)	EB	EBL	44.9 / D	30.9 / C	EBL	43.0 / D	33.7 / C
	WB	WBL	41.0 / D		WBL	44.8 / D	
	NB	NBL	30.8 / C		NBL	41.0 / D	
	SB	SBL	34.6 / C		SBL	32.6 / C	
Horizon Mitigated Build (Year 2045)	EB	EBL	45.6 / D	31.0 / C	EBL	42.0 / D	33.1 / C
	WB	WBL	40.1 / D		WBL	43.4 / D	
	NB	NBL	31.5 / C		NBL	41.1 / D	
	SB	SBL	35.6 / D		SBL	32.5 / C	

Table 104 – 19th St at US 52 Interchange (SPUI) – Year 2028, 2029, and 2045 Queueing

Scenario	Approach	Longest Approach Queue					
		AM PEAK HOUR			PM PEAK HOUR		
		Lane	95th% Queue (ft)	Available Storage (ft)	Lane	95th% Queue (ft)	Available Storage (ft)
Phase 2 Build (Year 2028)	EB	EBT	170	284	EBT	189	284
	WB	WBL	230	555	WBL	230	555
	NB	NBL	333	620	NBL	375	620
	SB	SBL	304	865	SBL	174	865
Phase 2 Mitigated Build (Year 2028)	EB	EBT	146	276	EBT	191	276
	WB	WBL	233	555	WBL	236	555
	NB	NBL	245	620	NBL	289	620
	SB	SBL	323	865	SBL	178	865
Phase 3 Build (Year 2029)	EB	EBT	150	276	EBT	186	276
	WB	WBL	265	555	WBL	225	555
	NB	NBL	270	620	NBL	291	620
	SB	SBL	318	865	SBL	203	865
Phase 3 Mitigated Build (Year 2029)	EB	EBT	165	276	EBT	186	276
	WB	WBL	241	555	WBL	235	555
	NB	NBL	258	745	NBL	326	745
	SB	SBL	314	865	SBL	195	865
Horizon Build (Year 2045)	EB	EBT	147	276	EBT	206	276
	WB	WBL	244	555	WBL	241	555
	NB	NBL	261	745	NBL	317	745
	SB	SBL	327	865	SBL	196	865
Horizon Mitigated Build (Year 2045)	EB	EBT	154	276	EBT	205	276
	WB	WBL	237	555	WBL	231	555
	NB	NBL	261	745	NBL	327	745
	SB	SBL	324	865	SBL	196	865

XXX – 95th% queues exceed available storage
XXX – 95th% through queue exceeds adjacent turn lane storage

Proposed Mitigations – 19th St at US 52 Interchange (SPUI)

The following mitigations should be made regardless of any development of the Rochester Tech Campus:

No Build Mitigated (Year 2027)

- No additional mitigations

Development Phase 1 does not require any mitigations. The following mitigations should be made with Phase 2 to accommodate the development:

Build Mitigated (Year 2028) – Phase 2

- Add a dual northbound left lane. The existing northbound right lane in the ramp area will be converted to a second northbound left lane. A new northbound right lane will be added with 340 feet of storage and a 160-foot taper.

Development Phase 3 does not require any additional mitigations.

See **Appendix E** for the proposed intersection layout of 19th Street at US 52 Interchange (SPUI).

7 Findings and Recommendations

7.1 City of Rochester Traffic Service Standards

The City of Rochester as part of their Public Works' *Engineering Standards For Public Works in Conjunction with the Development of Subdivisions, Commercial & Industrial Property,* defines eight traffic service standards that are used to define the findings of a traffic impact study. The following is a review of those eight standards as they pertain to this traffic impact study.

7.1.1 Capacity

"A volume to capacity (V/C) ratio of 0.80 shall not be consistently exceeded on any freeway or expressway as designated on the Comprehensive Plan and a V/C ratio of 0.90 shall not be consistently exceeded on any arterial or collector street as designated on the Comprehensive Plan. Consistently means that the V/C ratios are exceeded based on average daily peak hour traffic counts, projections or estimates."

No intersection turning movement in any Mitigated Build scenario exceeds the 0.8 or 0.9 V/C ratio thresholds with the proposed intersection mitigations.

41st Street, 37th Street, W. Circle Drive, Valleyhigh Drive, and 19th Street were considered to be in the Freeway/Expressway category of the Capacity Traffic Service Standard, and all turning movements at intersections with these roadways were kept to 0.8 or lower. Turning movements of intersections of local roadways such as the development internal roadways and Marketplace Drive were kept to V/C ratios of 0.9 or lower.

Submitted with this report are synchro files for each of the 11 traffic forecast scenarios. V/C ratios for each turning movement are calculated in each model. The V/C ratios of each turning movement are displayed on the map view utilizing the Ln/Mvt dropdown menu of the Display Results section of the Home tab. V/C ratios are also displayed in the Timing Settings tab.

7.1.2 Level of Service

"For corridors including mainline, merging areas and ramp junctions, a Level of Service C shall be maintained on any expressway, freeway, or arterial and a Level of Service D on any other designated non-local street on the Comprehensive Plan. At all intersections, a Level of Service C shall be maintained on any arterial or higher order street and a Level of Service D on any other non-residential street. Individual movements within any intersection shall be maintained at or above a Level of Service E. Where the existing Level of Service is below these standards, a traffic impact study shall identify those improvements needed to maintain the existing level of service, and what additional improvements would be needed to raise the level of service to the standards indicated."

Under Mitigated Build conditions in Phase 1, Phase 2, Phase 3, and the Horizon Year scenarios, all study intersections operate at Level of Service C or better. Each individual turning movement operates at LOS E or better. The Mitigated Build scenarios comply with the Level of Service Traffic Service Standard with the proposed intersection mitigations.

7.1.3 Number of Access Points

"The number of access points provided shall be the minimum needed to provide adequate access capacity for the site. Evidence of Level of Service F operations for individual public street

movements at access locations is a primary indication of the need for additional access points. However, the spacing and geometric design of all access points shall be consistent with the access management criteria of the Unified Development Code Section 60.400.040."

37th Street will see an overall reduction in access with many existing RTC parking lot access points removed entirely. A median will be constructed on 37th Street between Valleyhigh Drive and the RTC East. Between these two intersections, four access points are expected to be limited to right-in right-out only intersections, and two access points to the existing RTC parking lots will remain full access.

Aside from the 37th Street access points, two additional access points for the development will be provided:

- Marketplace Drive is proposed to have two access points, one existing and one new access. These two access points are spaced approximately 1,880 feet apart.
- 41st Street will have one new access point in the northwest area of the development.

7.1.4 Residential Street Impact

"Average Daily Traffic (ADT) on residential streets shall be within the ranges spelled out in the Comprehensive Plan for the class of street involved. No non-residential development shall increase the traffic on a residential street with at least 300 average daily trips by more than 25%, and shall contribute no more than 20% of the traffic on any street segment providing residential access."

There are no existing residential streets within the project area. Vehicles entering or exiting the development area are served by collector or minor arterial roadways. There are no residential streets that will see an increase in traffic due to the proposed development.

7.1.5 Traffic Flow and Progression

"The location of new traffic signals or proposed changes to cycle lengths or timing patterns of existing signals to meet Level of Service standards shall not interfere with the goal of achieving adequate traffic progression on major public streets in the vicinity of the development."

Proposed changes to traffic signal cycle lengths and/or timing patterns to meet Level of Service standards will not interfere with the goal of achieving adequate traffic progression on major public streets in the vicinity of the proposed Rochester Technology Campus development.

7.1.6 Vehicle Storage

"The capacity of storage bays and auxiliary lanes for turning traffic shall be adequate to store 95th percentile queues and ensure turning traffic will not interfere with through traffic flows on any public street."

Storage bays were extended to meet 95th percentile queues in the Mitigated Build scenarios when there was adequate space available to extend the lanes. Additionally, dual left turn lanes were added at locations with high left turning volumes with space for dual left lanes. However, there were a number of turn lanes where storage was deficient where there is no room to extend the turn lane storage. The following lists all lanes with queueing issues with a short summary of

the justification for the queueing concern, see the traffic operations section for each intersection for a full discussion related to the queueing at these movements:

- 41st Street at W Frontage Road/Marketplace Drive
  - Eastbound right, southbound left, southbound through/right
    - Queueing issues stay approximately the same as under existing scenario, no room for turn lane extensions
- 41st Street at NB US 52 Ramp/E. Frontage Road
  - Westbound though
    - Through queue extends just past available space between intersection in 2045 scenario, low concern
- Marketplace Drive at SE Target Access
  - Eastbound right
    - Pocket turn lane queuing issues are of low concern
- Marketplace Drive at Slip Ramp from 37th Street
  - Westbound left
    - Pocket turn lane queuing issues are of low concern
- 37th Street at RTC East
  - Northbound right
    - Mitigated in Phase 3 with installation of traffic signal control
- 37th Street at NB US 52 Ramp
  - Westbound through
    - Mitigated in Phase 2
- 19th Street at W. Frontage Road
  - Eastbound left, westbound left, westbound through
    - Limited space makes turn lane extension difficult
    - Queues clear and cause minimal intersection inefficiencies

The overall impact and inefficiencies caused by these queueing concerns is minimal. There are no run-away queues that build over multiple cycles. The limited space between some intersections makes these turn lanes impractical to extend.

7.1.7 Internal Circulation

"On-site vehicle circulation and parking patterns shall be designed so as not to interfere with the flow of traffic on any public street and shall accommodate all anticipated types of site traffic."

There are no on-site vehicle circulation or parking patterns that will interfere with public streets for this development.

7.1.8 Safety

"Access points shall be designed to provide for adequate sight distance and appropriate facilities to accommodate acceleration and deceleration of site traffic. Where traffic from the proposed development will impact any location with an incidence of high crash frequency, defined as one of the 5 to 10 highest crash locations in the area, the crash history should be evaluated and a

determination made that the proposed site access or additional site traffic will not further aggravate the situation. It is understood that the correction of an existing off-site safety deficiency is not typically the responsibility of the developer."

The crash analysis (see Section 2.4) indicated that there is not currently a sustained crash problem at any of the study intersections.

7.2 General Roadway Improvement Recommendations

During Phase 2 of the development, 37th Street would be connected with Valleyhigh Drive NW on the west side of the development. Valleyhigh Drive at 37th Street will be constructed as a three-way roundabout intersection with north, west, and south legs.

Based on the ROCOG TDM, 37th Street is estimated to have a 2045 ADT of 8,500 vehicles per day (vpd) between Valleyhigh Drive and RTC West. The roadway is proposed as a two-lane roadway with a center median. Development access points onto 37th Street in this section will operate under right-in right-out control.

Based on the ROCOG TDM, 37th Street between RTC West and RTC East is estimated to have an ADT of approximately 15,000 vpd. The roadway is proposed as a four-lane roadway with a center median. Access in this section of roadway will be reduced, with one full access entrance to the RTC campus and any remaining access points limited to right-in right-out intersections.

Internal development roadways and intersections will be constructed including a mini-roundabout at intersection 18, RTC East at RTC South.

7.3 Intersection Improvement Recommendations

Figures 13A and 13B document the proposed lane geometry for the full build out of the development. **Figure 14** is a matrix detailing the development phase under which each mitigation would occur.

7.3.1 No Build Intersection and Interchange improvements:

Under Mitigated No Build 2027 conditions the following improvements were found to be required to stay in compliance with Rochester's Traffic Service Standards. There are improvements that should be installed whether or not the development is built.

- W. Circle Drive at 41st Street
  - Install a dual westbound left turn lane
- 41st Street at SB US 52 Ramp
  - The westbound left lane would be restriped to have 220 feet of storage with a 60-foot (5 to 1) taper.
  - A southbound left lane would be added. The southbound approach lane designation would be a left turn lane, a through lane, and a right turn lane.
  - The eastbound right lane would be converted to a channelized right turn with a yield sign.

- 41st Street at NB US 52 Ramp
  - The eastbound left lane would be restriped with 250 feet of storage and a 60-foot taper (5 to 1).
- 41st Street at E. Frontage Road/Maplewood Sq Access
  - The Northbound approach lanes would be extended to 225 feet of storage. This would involve closing access to the first two parking rows of the Maplewood Square parking lot on the east side of the northbound approach. A concrete divider would be installed to block the existing parking lot row access points resulting in a loss of approximately 16 parking spaces.
- 37th Street at SB US 52 Ramp
  - Construct a pedestrian bridge to the north side of the 37th Street bridge/interchange to allow for additional roadway width on the bridge.
  - Install a dual westbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The westbound left turn lanes would have 265 feet of storage with a 110-foot taper (5 to 1).
- 37th Street at NB US 52 Ramp
  - Install a dual eastbound left turn lane on the 37th Street bridge utilizing the space currently occupied by the sidewalk on the north side of the bridge combined with lane width reductions of all lanes on the bridge to 11 feet. The eastbound left turn lanes would have 265 feet of storage with a 110-foot taper (5 to 1).
  - An additional northbound lane is added to the west side of the northbound approach. The northbound approach's lane designation is converted from a dedicated left, shared left/through, dedicated through, and dedicated right turn lane approach to dual dedicated left lanes, dual dedicated through lane, and a dedicated right turn lane approach.

7.3.2 Build Mitigation Intersection Improvements:

Under the Mitigated Build scenarios, the following intersection improvements were found to be required to keep the traffic network operating within the traffic service standards.

- 41st Street at 31st Avenue NW/RTC West
  - Extend striping for the southbound left turn lane from 100 feet to 150 feet.
- 41st Street at SB US 52 Ramp
  - A second through lane would be added to the southbound approach. The southbound approach would be a left turn lane, two through lanes, and a right turn lane.
- W. Circle Drive at Valleyhigh Road
  - Add a dual southbound left turn lane.
  - Add a dual westbound left turn lane.
- 37th Street at RTC West

  - The lane designation of the southbound approach would be changed to have a dedicated left turn lane with a shared though-right lane.
  - The westbound channelized right turn lane would be converted to a regular right turn lane.

- 37th Street at RTC East
  - Intersection converted to traffic signal control.
  - Add a dual westbound left turn lane.

- 37th Street at SB US 52 Ramp
  - The addition of a dual southbound right turn lane. The southbound approach would be dual right turn lanes with a shared through/left lane.

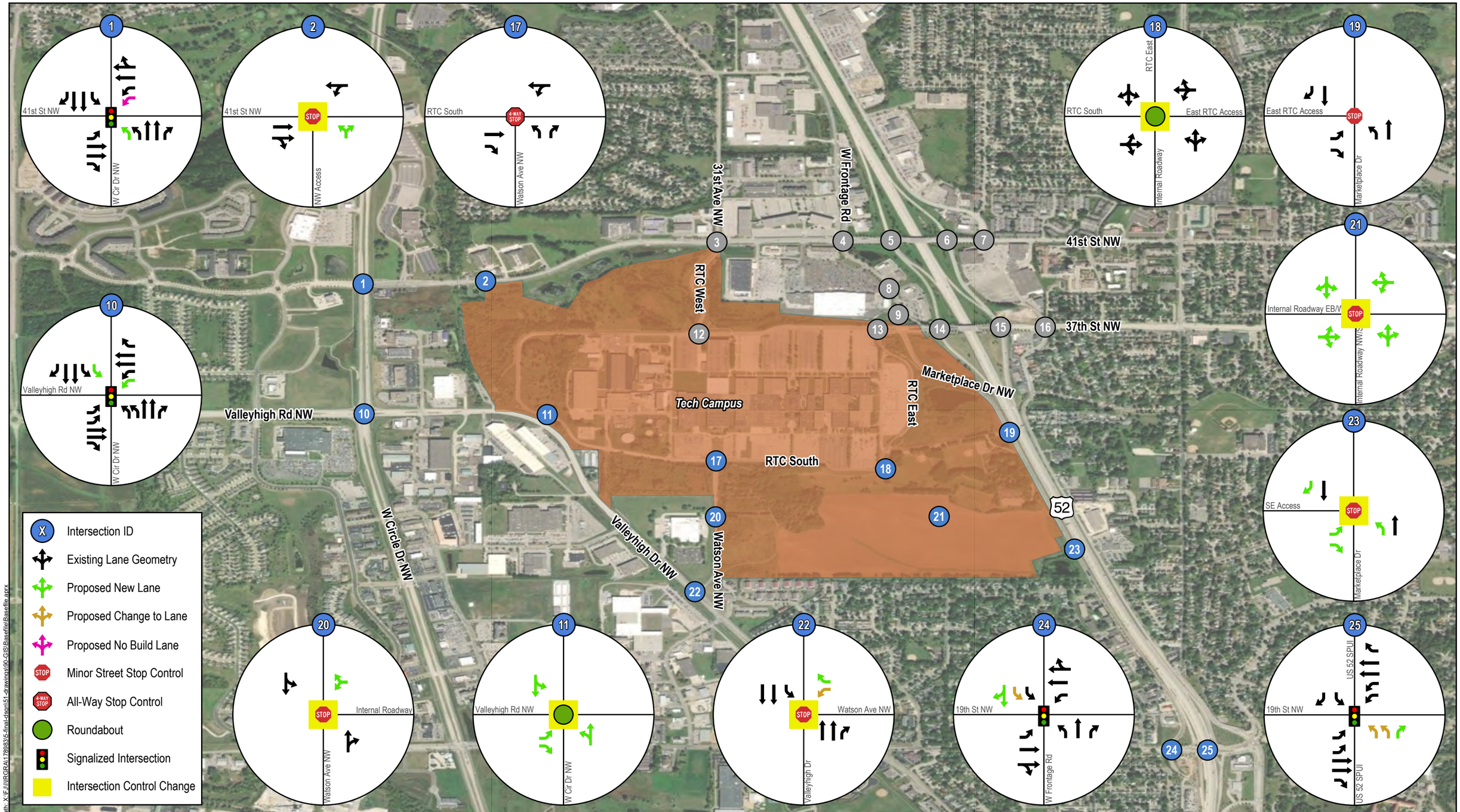
- 37th Street at NB US 52 Ramp
  - The addition of a dual northbound right turn lane. The northbound approach would have dual left turn lanes, dual through lanes, and dual right turn lanes.

- 37th Street at 21st Avenue/Maplewood Sq Access
  - Extend the northbound left turn lane to have 200 feet of storage with a 60-foot taper, this will involve pavement marking changes only.

- Valleyhigh Drive at Watson Avenue
  - Add a dedicated westbound left turn lane with 150 feet of storage.
  - Convert the intersection to signalized control.

- 19th Street at W. Frontage Road
  - Reconfigure the southbound approach with an added lane. The existing through-right lane will be converted to a dual left turn lane. A new through-right lane will be added to the intersection with 300 feet of storage and a 50-foot taper.

- 19th Street at US 52 Interchange (SPUI)
  - Add a dual northbound left lane. The existing northbound right lane in the ramp area will be converted to a second northbound left lane. A new northbound right lane will be added with 340 feet of storage and a 160-foot taper.



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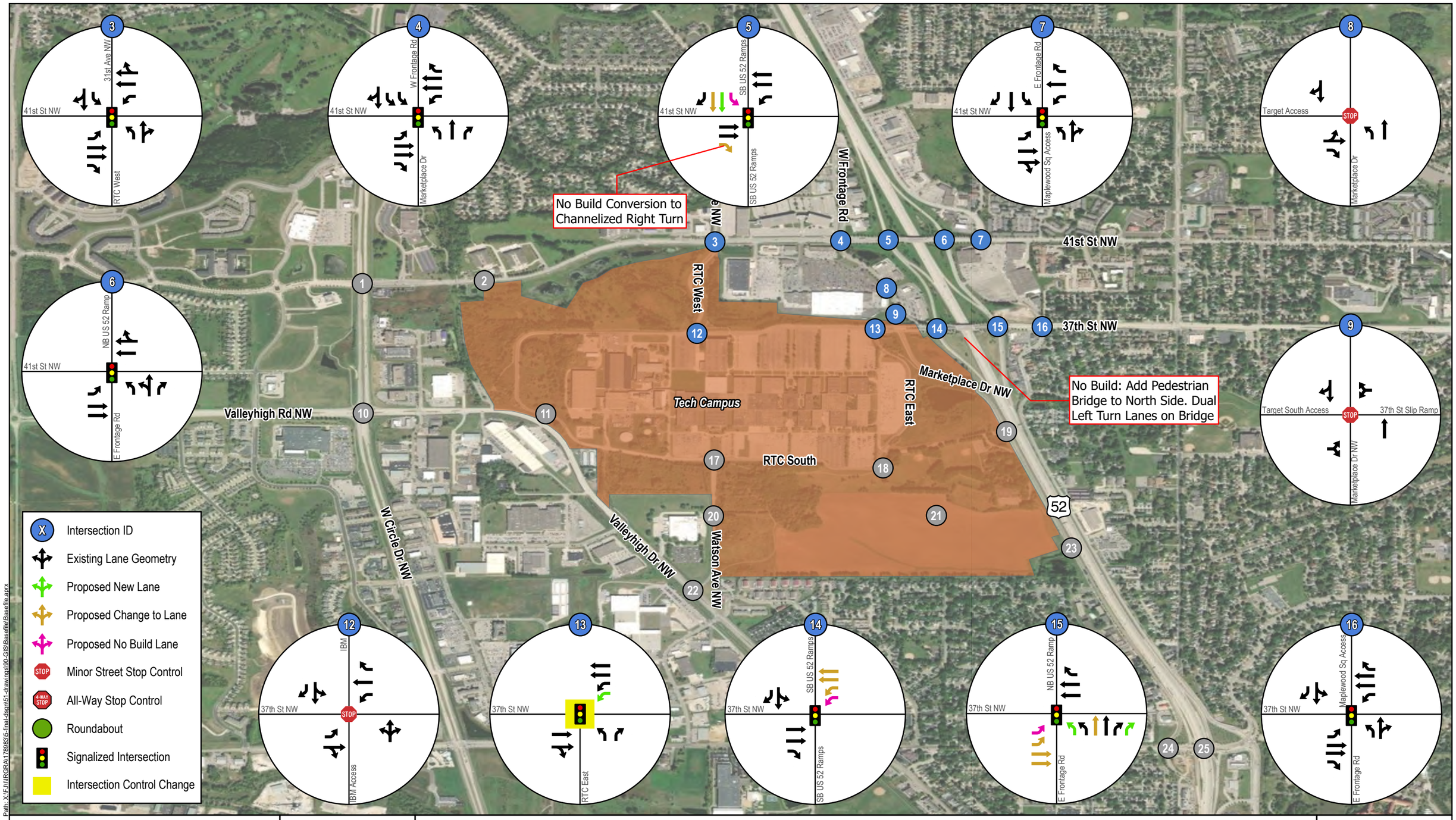
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Projection: Olmsted Co Coord
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Proposed Lane Geometry

Rochester Tech Campus
Rochester, MN

Figure
13 A

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.



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Project: IRGRA 178983
Print Date: 5/5/2025

User Name: ljohnson
Projection: Olmsted Co Coord
Source:

Proposed Lane Geometry

Rochester Tech Campus
Rochester, MN

Figure
13 B

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Rochester Technology Campus Improvement Matrix

		No Build	Phase 1	Phase 2	Phase 3	Notes
INT #	**Intersection**	**No Build 2027 Mitigations**	**Build 2027 Mitigations**	**Build 2028 Mitigations**	**Build 2029 Mitigations**	
1	W Circle Dr at 41st St (Signal)	Add Dual WBL Lane			Add Dual NBL Lane	
2	41st St at NW MF Access	N/A, Does not exist	Construct Minor Street Stop Intersection			
3	41st St at 31st Ave/RTC West (Signal)				Extend SBL pavement markings to 150 ft of storage	
4	41st St at W Frontage Rd/Marketplace Dr (Signal)					No Changes in any Phase
5	41st St at SB US 52 Ramp (Signal)	Add SBL Lane (SB approach from LT-R to L-T-R) EBR lane becomes a channelized right turn (yield, no add lane) WBL restripe taper to be 5 to 1, Storage 220, taper 60		Add Dual SBT Lane (SB approach: L-T-T-R)		
6	41st St at NB US 52 Ramp/E Frontage Rd (Signal)	EBL restripe taper to be 5 to 1, Storage 250, taper 60				
7	41st St at E Frontage Rd/Maplewood Sq Access (Signal)	Extend NB storage to 225 feet This will involve blocking the entrance to two rows of parking				
8	Marketplace Dr at SE Target Access					No Changes in any Phase
9	Marketplace Dr at Slip Ramp from 37th St					No Changes in any Phase
10	W Circle Dr at Valleyhigh Rd (Signal)				Add Dual SBL Lane Add Dual WBL Lane	
11	Valleyhigh Dr at 37th St (Roundabout)	N/A, Does not exist, No 37th St Connection	N/A, Does not exist, No 37th St Connection	Construct Roundabout Connect 37th St to Valleyhigh Dr		
12	37th St at RTC West			Change lane designation of southbound approach (SB approach: dedicated L, shared T/R) Remove channelization of WBR turn		
13	37th St at RTC East			Remove concrete bollards between lanes of WB approach westbound approach Remove gatehouse	Construct Signal Add Dual WBL Lane	
14	37th St at SB US 52 Ramp (Signal)	Add pedestrian bridge, Reconstruct median, Lane widths 11 ft. Add Dual WBL lane with 265 ft of storage, 110 ft taper (now 5 to 1)			Add Dual SBR Lane	
15	37th St at NB US 52 Ramp (Signal)	Add pedestrian Bridge, Reconstruct median, Lane widths 11 ft. Add Dual EBL lane with 175 ft of storage, 110 ft taper (now 5 to 1) Northbound approach add 1 lane (From L-LT-T-R to L-L-T-T-R)			Add Dual NBR Lane (L-L-T-T-R-R)	
16	37th St at 21st Ave/Maplewood Sq Access (Signal)		Extend NBL storage to 200 ft Will require pavement marking changes only			
17	Watson Ave at RTC South					No Changes in any Phase
18	RTC East at RTC South (Roundabout)	N/A, Does not exist	N/A, Does not exist	Construct Mini-Roundabout		
19	Marketplace Dr at E RTC Access					No Changes in any Phase
20	31st Ave at Internal Roadway	N/A, Does not exist		Construct Minor Street Stop Intersection		
21	Internal Roadway at Internal Roadway	N/A, Does not exist		Construct Minor Street Stop Intersection		
22	Valleyhigh Dr at Watson Ave			Add Dedicated WBR Lane	Construct Signal	
23	Marketplace Dr at SE MF Access	N/A, Does not exist		Construct Minor Street Stop Intersection		
24	19th St at W Frontage Rd (Signal)			Add a through-right lane Convert existing through-right lane to a Dual SBL Lane SB approach will be (L-L-T/R)		
25	19th St at US 52 Interchange (Signal)			Add Dual NBL Lane Reconfigure NB approach		

Figure 14

8 Cost Estimates

Appendix E contains preliminary cost estimates for the roadway, interchange, and intersection improvements of the above proposed mitigations.

- US 52 at 19th Street Northbound Dual Left Improvements
  - Total Estimated Cost: $1,465,340
- 19th Street at W. Frontage Road Southbound Approach Improvements
  - Total Estimated Cost: $416,091
- 37th Street Realignment and Roundabout at Valleyhigh Drive
  - Total Estimated Cost: $18,550,608
- 37th Street Interchange Improvements
  - Total Estimated Cost: $7,541,738
  - This cost includes No Build improvements.
- 41st Street Interchange Improvements
  - Total Estimated Cost: $905,494
  - This cost includes No Build improvements.
- 41st Street at W. Circle Drive Improvements
  - Total Estimated Cost: $2,034,819
  - This cost includes No Build improvements
- W Circle Drive at Valleyhigh Road Improvements
  - Total Estimated Cost: $817,916
- Valleyhigh Drive at Watson Avenue Improvements
  - Total Estimated Cost: $973,909

The total cost for all improvements to the network is $32,705,915. See **Appendix E** for a detailed cost breakdown for each improvement project.

9 Conclusion

Three phases of the Rochester Technology Campus development are currently planned. Mitigations to the roadway network to keep the network in compliance with Rochester's Traffic Service Standards are proposed for each of the three phases.

Also detailed are a set of preliminary No Build improvements that are needed whether or not the development is built. With these improvements the traffic network performs adequately. The network complies with Rochester's Traffic Service Standards for Level of Service and Volume to Capacity standards.

Rochester's 'Vehicle Storage' Standard requires that 95th percentile queues fit within available queue storage. Storage bays were extended to meet 95th percentile queues in the Mitigated Build scenarios when there was adequate space available to extend the lanes. Dual left turn lanes were added when necessary and feasible. Some turn lanes were not able to be mitigated and have 95th percentile queues exceeding available storage. These lanes are a mixture of existing problems, short pocket turn lanes, turn lanes that are not reasonable to extend, and through lanes that spill back to an adjacent closely spaced intersection. The overall impact and inefficiencies caused by these turning movement queues is minimal. There are no run-away queues that build over multiple cycles.

Improvement layouts and cost estimate breakdowns are provided. With these modifications the network is expected to handle the proposed development traffic adequately and with minimal inefficiencies due to queueing concerns.

Appendix A

Turning Movement Counts

Location: West Circle Dr NW at 41st St NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	West Circle Dr NW				41st st NW				West Circle Dr NW				41st st NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	2	24	3	0	19	11	2	0	3	21	17	0	0	13	15	0	130
6:15	5	58	2	0	25	7	0	0	10	34	21	0	0	23	17	0	202
6:30	4	71	2	0	21	10	1	0	10	28	30	1	1	19	11	0	208
6:45	5	88	2	0	29	10	1	0	7	38	30	0	1	22	14	0	247
7:00	7	99	1	1	32	18	1	0	6	39	32	1	6	17	8	0	266
7:15	5	123	7	0	34	10	3	0	10	65	50	0	3	25	24	0	359
7:30	9	124	3	1	44	29	4	0	17	62	54	0	3	44	22	1	415
7:45	9	125	5	0	46	22	3	0	19	91	76	0	6	34	12	0	448
8:00	8	110	7	0	40	28	4	0	20	84	37	0	1	38	7	0	384
8:15	12	83	10	0	46	25	5	0	15	90	69	1	7	32	16	0	410
8:30	11	99	5	0	36	13	3	0	17	74	52	0	6	37	12	0	365
8:45	11	89	8	0	37	17	10	0	21	88	70	0	3	27	13	0	394
9:00	5	64	5	0	48	26	8	0	17	74	61	0	5	27	6	1	346
9:15	13	82	2	0	44	25	3	0	18	75	54	0	4	23	10	0	353
9:30	7	109	5	0	57	25	6	0	11	91	52	0	7	24	7	0	401
9:45	9	109	8	0	66	28	8	0	23	84	69	0	11	25	16	0	456
10:00	14	97	4	0	55	32	6	0	22	95	61	0	4	23	17	0	430
10:15	9	119	1	0	49	30	4	0	21	95	72	0	10	17	18	0	445
10:30	17	94	5	1	60	29	5	0	24	104	75	0	4	16	23	0	456
10:45	15	109	5	0	62	31	11	0	29	96	73	0	7	25	21	0	484
11:00	13	100	12	0	86	36	6	0	37	124	95	0	10	36	15	0	570
11:15	14	107	9	1	65	40	6	0	34	131	98	0	5	29	24	0	562
11:30	15	97	9	0	67	35	11	0	29	130	85	0	8	33	22	0	541
11:45	13	101	6	1	81	32	10	0	27	120	99	0	13	32	30	0	564
12:00	11	104	14	0	67	53	14	0	40	133	97	0	11	41	22	0	607
12:15	13	121	12	0	75	44	16	0	29	125	94	0	12	39	32	0	612
12:30	14	104	12	0	88	44	12	0	29	128	90	0	9	41	26	0	597
12:45	23	113	11	0	78	32	8	0	28	110	83	0	8	46	27	0	567
13:00	16	107	8	0	83	42	11	0	53	118	98	0	6	28	18	0	588
13:15	14	111	10	0	59	30	7	0	21	105	91	0	12	31	22	0	513
13:30	12	94	11	0	67	30	6	0	33	130	60	0	8	33	34	0	518
13:45	10	131	4	0	73	48	9	0	31	119	72	0	13	23	26	0	559
14:00	13	97	4	0	67	48	9	0	29	121	89	0	8	30	27	0	542
14:15	21	142	5	0	54	38	11	0	37	110	92	0	5	28	22	0	565
14:30	12	82	9	2	68	43	14	0	25	122	73	0	9	32	25	0	514
14:45	13	106	6	0	76	40	7	0	28	114	74	0	11	42	18	0	535
15:00	13	113	4	0	61	48	11	0	31	128	99	0	9	23	16	0	556
15:15	19	114	4	0	94	57	8	0	27	121	84	0	16	34	10	0	588
15:30	19	125	7	1	74	42	8	0	33	160	92	0	12	26	23	1	621
15:45	14	110	5	1	77	57	11	0	29	134	92	0	9	39	15	0	592
16:00	19	130	14	0	78	69	10	0	40	185	89	0	12	24	26	0	696
16:15	20	147	9	1	67	45	7	0	23	168	90	0	13	33	15	0	637
16:30	10	115	9	1	92	51	12	0	38	164	86	0	9	33	23	0	642
16:45	9	161	9	0	71	49	11	0	64	158	94	0	12	34	23	0	695
17:00	17	105	7	1	103	58	11	1	36	177	92	0	10	40	24	0	680
17:15	14	125	4	3	97	82	7	0	40	151	101	0	9	34	21	0	685
17:30	12	112	11	0	72	41	9	0	45	149	82	0	8	33	18	0	592
17:45	9	82	9	0	72	37	11	0	41	120	67	0	6	27	20	0	501
18:00	18	108	4	0	67	34	6	0	47	141	67	0	12	34	24	0	562
18:15	9	83	9	0	43	38	6	0	26	96	63	1	9	38	22	0	442
18:30	9	78	2	0	61	55	3	0	26	94	56	0	6	27	20	0	437
18:45	8	77	5	1	41	36	3	0	34	98	48	0	9	25	18	0	402
Total	623	5378	344	16	3174	1860	379	1	1410	5612	3747	4	398	1559	997	3	25481
Cars+	615	5274	342	8	3132	1815	375	1	1397	5516	3692	3	393	1532	983	3	25066
Trucks	8	104	2	8	42	45	4	0	13	96	55	1	5	27	14	0	415
% Trucks	1.3	1.9	0.6	50.0	1.3	2.4	1.1	0.0	0.9	1.7	1.5	25.0	1.3	1.7	1.4	0.0	
	1.8				1.7				1.5				1.6				1.6

Location: West Circle Dr NW at 41st St NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	West Circle Dr NW				41st st NW				West Circle Dr NW				41st st NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	2	23	3	0	18	10	2	0	3	19	17	0	0	13	15	0	125
6:15	4	57	2	0	24	7	0	0	10	32	20	0	0	23	17	0	196
6:30	4	70	2	0	20	9	1	0	10	26	29	1	1	19	10	0	201
6:45	5	88	2	0	29	9	1	0	7	36	29	0	1	21	14	0	242
7:00	6	95	1	0	32	16	0	0	5	37	30	0	6	17	8	0	253
7:15	5	119	7	0	33	9	3	0	9	62	50	0	3	23	24	0	347
7:30	9	121	3	1	44	28	4	0	17	61	52	0	3	43	22	1	407
7:45	9	123	5	0	45	22	3	0	19	87	75	0	6	34	12	0	440
8:00	8	108	7	0	40	27	4	0	19	82	37	0	1	37	7	0	377
8:15	12	80	10	0	45	23	5	0	15	90	69	1	5	30	14	0	398
8:30	11	95	5	0	36	13	3	0	16	72	51	0	6	35	12	0	355
8:45	11	89	7	0	37	15	10	0	21	83	69	0	3	27	13	0	385
9:00	5	62	5	0	46	26	8	0	17	73	60	0	5	26	6	1	339
9:15	13	79	2	0	43	24	3	0	18	72	51	0	4	23	10	0	342
9:30	7	104	5	0	54	21	6	0	9	88	51	0	7	23	7	0	382
9:45	9	108	8	0	66	28	8	0	23	83	69	0	10	23	16	0	451
10:00	14	95	4	0	53	32	6	0	21	94	60	0	4	23	15	0	421
10:15	9	118	1	0	49	28	4	0	21	92	70	0	10	16	16	0	434
10:30	17	91	5	1	59	28	5	0	24	101	74	0	4	16	23	0	447
10:45	13	108	5	0	60	31	11	0	29	93	73	0	7	22	20	0	472
11:00	13	98	12	0	84	36	5	0	35	123	91	0	9	35	15	0	556
11:15	14	105	9	1	65	39	6	0	34	127	94	0	5	28	24	0	550
11:30	15	93	9	0	66	34	11	0	29	128	82	0	8	31	22	0	528
11:45	13	98	6	1	81	30	10	0	27	118	98	0	13	32	29	0	555
12:00	11	104	14	0	66	52	14	0	40	130	94	0	11	41	22	0	599
12:15	13	118	12	0	75	42	15	0	29	123	93	0	12	39	31	0	602
12:30	13	102	12	0	80	43	12	0	29	126	90	0	9	41	26	0	583
12:45	23	113	11	0	78	32	8	0	28	105	82	0	8	45	27	0	560
13:00	16	105	8	0	83	41	11	0	53	115	96	0	6	28	18	0	580
13:15	14	104	10	0	58	30	7	0	21	102	89	0	12	31	22	0	500
13:30	12	92	11	0	66	29	6	0	31	128	59	0	8	32	34	0	508
13:45	10	130	4	0	72	48	9	0	31	118	71	0	13	23	26	0	555
14:00	13	96	4	0	67	46	9	0	29	119	88	0	8	30	27	0	536
14:15	21	138	4	0	53	38	11	0	36	110	92	0	4	27	22	0	556
14:30	12	80	9	0	67	42	14	0	24	122	73	0	9	31	24	0	507
14:45	13	104	6	0	74	40	7	0	28	113	74	0	11	42	18	0	530
15:00	12	111	4	0	60	48	10	0	31	125	98	0	9	23	16	0	547
15:15	19	111	4	0	93	56	8	0	27	120	82	0	16	34	10	0	580
15:30	18	118	7	1	73	41	8	0	33	158	92	0	12	25	22	1	607
15:45	14	108	5	1	77	57	11	0	29	132	91	0	9	39	15	0	587
16:00	19	128	14	0	76	67	10	0	40	184	87	0	12	24	25	0	686
16:15	20	147	9	1	67	44	7	0	23	165	87	0	13	33	15	0	630
16:30	10	113	9	1	92	51	12	0	38	163	86	0	9	33	23	0	639
16:45	9	161	9	0	71	47	11	0	64	157	94	0	12	34	22	0	691
17:00	17	105	7	0	103	57	11	1	36	177	91	0	10	39	24	0	677
17:15	13	124	4	0	96	82	7	0	40	150	101	0	9	34	21	0	681
17:30	12	111	11	0	72	39	9	0	45	148	82	0	8	33	18	0	588
17:45	9	81	9	0	72	37	11	0	41	120	66	0	6	27	20	0	499
18:00	18	106	4	0	67	33	6	0	47	139	67	0	12	34	24	0	557
18:15	9	83	9	0	43	38	6	0	26	96	63	1	9	38	22	0	442
18:30	9	77	2	0	61	54	3	0	26	94	56	0	6	27	20	0	435
18:45	8	77	5	0	41	36	3	0	34	98	47	0	9	25	18	0	401
Total	615	5274	342	8	3132	1815	375	1	1397	5516	3692	3	393	1532	983	3	25066

Location: West Circle Dr NW at 41st St NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	West Circle Dr NW				41st st NW				West Circle Dr NW				41st st NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	1	0	0	1	1	0	0	0	2	0	0	0	0	0	0	5
6:15	1	1	0	0	1	0	0	0	0	2	1	0	0	0	0	0	6
6:30	0	1	0	0	1	1	0	0	0	2	1	0	0	0	1	0	7
6:45	0	0	0	0	0	1	0	0	0	2	1	0	0	1	0	0	5
7:00	1	4	0	1	0	2	1	0	1	2	2	1	0	0	0	0	13
7:15	0	4	0	0	1	1	0	0	1	3	0	0	0	2	0	0	12
7:30	0	3	0	0	0	1	0	0	0	1	2	0	0	1	0	0	8
7:45	0	2	0	0	1	0	0	0	0	4	1	0	0	0	0	0	8
8:00	0	2	0	0	0	1	0	0	1	2	0	0	0	1	0	0	7
8:15	0	3	0	0	1	2	0	0	0	0	0	0	2	2	2	0	12
8:30	0	4	0	0	0	0	0	0	1	2	1	0	0	2	0	0	10
8:45	0	0	1	0	0	2	0	0	0	5	1	0	0	0	0	0	9
9:00	0	2	0	0	2	0	0	0	0	1	1	0	0	1	0	0	7
9:15	0	3	0	0	1	1	0	0	0	3	3	0	0	0	0	0	11
9:30	0	5	0	0	3	4	0	0	2	3	1	0	0	1	0	0	19
9:45	0	1	0	0	0	0	0	0	0	1	0	0	1	2	0	0	5
10:00	0	2	0	0	2	0	0	0	1	1	1	0	0	0	2	0	9
10:15	0	1	0	0	0	2	0	0	0	3	2	0	0	1	2	0	11
10:30	0	3	0	0	1	1	0	0	0	3	1	0	0	0	0	0	9
10:45	2	1	0	0	2	0	0	0	0	3	0	0	0	3	1	0	12
11:00	0	2	0	0	2	0	1	0	2	1	4	0	1	1	0	0	14
11:15	0	2	0	0	0	1	0	0	0	4	4	0	0	1	0	0	12
11:30	0	4	0	0	1	1	0	0	0	2	3	0	0	2	0	0	13
11:45	0	3	0	0	0	2	0	0	0	2	1	0	0	0	1	0	9
12:00	0	0	0	0	1	1	0	0	0	3	3	0	0	0	0	0	8
12:15	0	3	0	0	0	2	1	0	0	2	1	0	0	0	1	0	10
12:30	1	2	0	0	8	1	0	0	0	2	0	0	0	0	0	0	14
12:45	0	0	0	0	0	0	0	0	0	5	1	0	0	1	0	0	7
13:00	0	2	0	0	0	1	0	0	0	3	2	0	0	0	0	0	8
13:15	0	7	0	0	1	0	0	0	0	3	2	0	0	0	0	0	13
13:30	0	2	0	0	1	1	0	0	2	2	1	0	0	1	0	0	10
13:45	0	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	4
14:00	0	1	0	0	0	2	0	0	0	2	1	0	0	0	0	0	6
14:15	0	4	1	0	1	0	0	0	1	0	0	0	1	1	0	0	9
14:30	0	2	0	2	1	1	0	0	1	0	0	0	0	1	1	0	7
14:45	0	2	0	0	2	0	0	0	0	1	0	0	0	0	0	0	5
15:00	1	2	0	0	1	0	1	0	0	3	1	0	0	0	0	0	9
15:15	0	3	0	0	1	1	0	0	0	1	2	0	0	0	0	0	8
15:30	1	7	0	0	1	1	0	0	0	2	0	0	0	1	1	0	14
15:45	0	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	5
16:00	0	2	0	0	2	2	0	0	0	1	2	0	0	0	1	0	10
16:15	0	0	0	0	0	1	0	0	0	3	3	0	0	0	0	0	7
16:30	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
16:45	0	0	0	0	0	2	0	0	0	1	0	0	0	0	1	0	4
17:00	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	3
17:15	1	1	0	3	1	0	0	0	0	1	0	0	0	0	0	0	4
17:30	0	1	0	0	0	2	0	0	0	1	0	0	0	0	0	0	4
17:45	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
18:00	0	2	0	0	0	1	0	0	0	2	0	0	0	0	0	0	5
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
18:45	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1
Total	8	104	2	8	42	45	4	0	13	96	55	1	5	27	14	0	415

Location: 41st Street NW at 31st Avenue NW International Business Machine
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	31st Avenue NW				42nd ST NW				IBM Road				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	5	8	3	0	6	20	3	0	7	1	0	0	4	27	10	0	94
6:15	10	10	5	0	3	25	3	0	3	3	1	0	9	30	12	0	114
6:30	17	4	4	0	8	28	4	0	2	2	0	0	7	32	16	0	124
6:45	19	8	5	0	4	31	3	0	14	1	1	1	6	35	10	0	137
7:00	12	8	10	0	8	31	6	1	11	7	3	2	10	35	16	0	157
7:15	15	12	6	1	7	40	10	0	13	8	1	0	12	49	12	0	185
7:30	30	19	9	3	8	63	12	0	14	4	1	0	23	56	32	0	271
7:45	24	13	8	1	11	54	9	1	14	16	1	0	18	80	21	0	269
8:00	14	12	10	0	7	63	5	0	11	5	1	1	12	53	20	0	213
8:15	15	8	5	0	3	66	15	0	12	11	2	1	14	75	20	0	246
8:30	19	13	8	0	8	42	13	1	9	7	1	1	10	73	15	0	218
8:45	27	11	7	1	5	55	10	2	8	13	0	0	6	84	14	0	240
9:00	23	11	7	1	5	71	12	1	11	8	3	1	8	83	8	1	250
9:15	18	3	10	0	0	54	12	1	8	10	1	1	9	68	14	0	207
9:30	17	15	11	0	3	62	10	1	8	7	5	0	8	65	8	0	219
9:45	28	10	5	0	4	94	18	0	13	7	3	0	15	85	7	0	289
10:00	27	6	5	0	3	67	9	0	7	9	2	1	11	77	8	0	231
10:15	18	8	5	0	3	80	12	0	13	13	4	0	9	83	4	0	252
10:30	25	14	9	0	1	70	15	0	12	5	4	2	8	89	4	0	256
10:45	17	8	10	0	3	98	20	0	8	12	6	1	11	97	9	0	299
11:00	32	10	14	0	5	103	26	0	8	9	4	1	16	117	13	0	357
11:15	29	4	9	0	1	81	17	0	14	12	11	1	6	107	10	0	301
11:30	25	9	15	0	5	85	16	0	13	13	6	0	14	110	8	0	319
11:45	29	10	14	1	7	92	11	0	10	11	11	1	13	127	9	0	344
12:00	33	11	19	0	4	103	16	2	24	15	19	0	18	119	18	0	399
12:15	27	8	9	0	12	100	24	0	17	10	11	2	20	102	20	0	360
12:30	29	7	13	0	10	110	19	1	19	11	5	0	24	118	13	0	378
12:45	32	20	15	0	10	112	19	0	15	15	9	1	19	118	16	0	400
13:00	27	12	12	1	6	105	26	2	15	17	6	0	13	117	16	0	372
13:15	28	11	7	0	8	83	20	1	20	14	3	0	8	118	8	0	328
13:30	33	10	4	0	2	98	16	0	9	9	1	0	17	88	8	0	295
13:45	29	9	10	0	4	93	22	0	14	15	3	0	16	85	10	0	310
14:00	28	6	20	0	8	87	17	0	9	10	6	0	9	101	15	2	316
14:15	18	8	13	0	1	84	15	0	9	12	2	0	14	104	18	0	298
14:30	28	8	9	1	6	113	21	0	5	5	12	1	9	108	8	0	332
14:45	33	11	9	0	4	104	19	1	18	9	5	0	13	104	17	0	346
15:00	30	5	13	0	5	99	19	0	23	9	5	0	14	109	6	0	337
15:15	26	8	12	2	4	125	11	2	20	15	11	0	10	121	7	0	370
15:30	22	5	10	0	2	100	15	0	29	23	6	1	10	113	11	0	346
15:45	38	6	13	0	4	99	24	3	23	23	5	0	13	122	12	0	382
16:00	39	9	14	0	1	106	16	1	32	31	7	0	11	105	18	0	389
16:15	26	10	11	0	8	101	22	1	27	17	8	0	10	124	7	0	371
16:30	24	11	22	0	6	103	15	0	16	16	11	0	11	121	10	1	366
16:45	35	9	18	0	6	101	16	1	23	27	15	0	11	111	8	0	380
17:00	38	16	27	2	4	112	15	0	33	25	9	0	10	139	17	0	445
17:15	33	14	14	0	5	125	16	0	35	20	12	1	12	124	13	0	423
17:30	29	7	19	0	5	103	8	0	17	10	8	0	13	108	12	0	339
17:45	21	4	9	0	2	82	20	0	20	13	5	1	11	90	4	0	281
18:00	18	7	5	0	3	83	11	0	10	6	7	0	11	113	2	0	276
18:15	11	7	6	0	3	84	19	0	18	10	4	0	12	92	9	0	275
18:30	17	1	8	0	4	82	16	0	14	10	4	0	8	72	9	1	245
18:45	14	4	9	0	6	68	16	0	11	16	1	0	5	74	4	0	228
Total	1261	478	544	14	261	4240	764	23	768	607	272	22	611	4757	616	5	15179
Cars+	1230	475	535	10	205	4169	740	18	763	606	271	9	597	4691	607	1	14889
Trucks	31	3	9	4	56	71	24	5	5	1	1	13	14	66	9	4	290
% Trucks	2.5	0.6	1.7	28.6	21.5	1.7	3.1	21.7	0.7	0.2	0.4	59.1	2.3	1.4	1.5	80.0	
	1.9				2.9				0.4				1.5				1.9

Location: 41st Street NW at 31st Avenue NW International Business Machine
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	31st Avenue NW				42nd ST NW				IBM Road				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	4	8	3	0	3	18	2	0	7	1	0	0	4	27	10	0	87
6:15	10	10	4	0	2	25	3	0	3	3	1	0	9	28	12	0	110
6:30	16	4	4	0	6	26	3	0	2	2	0	0	6	32	16	0	117
6:45	19	8	5	0	3	31	3	0	14	1	1	0	5	35	10	0	135
7:00	11	8	9	0	5	28	4	1	11	7	3	0	10	31	15	0	142
7:15	15	12	6	1	7	39	10	0	13	8	1	0	11	49	12	0	183
7:30	29	19	9	2	5	62	11	0	14	4	1	0	22	53	32	0	261
7:45	22	13	8	1	9	54	9	1	14	15	1	0	18	76	21	0	260
8:00	13	12	10	0	5	62	3	0	11	5	1	1	12	52	20	0	206
8:15	15	8	5	0	3	64	15	0	12	11	2	1	13	75	20	0	243
8:30	17	13	8	0	5	42	12	0	9	7	1	0	10	71	15	0	210
8:45	26	11	7	0	5	54	10	2	8	13	0	0	6	82	14	0	236
9:00	22	11	6	1	4	70	12	1	11	8	3	1	8	83	8	1	246
9:15	18	3	10	0	0	50	12	0	8	10	1	1	9	67	14	0	202
9:30	17	15	11	0	3	58	10	1	8	7	5	0	8	63	7	0	212
9:45	28	10	5	0	4	93	18	0	13	7	3	0	15	83	7	0	286
10:00	26	6	5	0	3	65	9	0	7	9	2	0	11	76	8	0	227
10:15	18	8	5	0	3	78	12	0	13	13	4	0	9	80	4	0	247
10:30	25	14	9	0	1	68	15	0	12	5	3	0	7	89	4	0	252
10:45	16	8	10	0	3	95	19	0	8	12	6	0	11	94	8	0	290
11:00	32	9	14	0	4	101	26	0	8	9	4	0	15	111	13	0	346
11:15	28	4	8	0	1	81	16	0	14	12	11	0	5	105	10	0	295
11:30	23	9	14	0	4	84	16	0	12	13	6	0	13	108	7	0	309
11:45	29	10	14	0	7	91	11	0	10	11	11	1	13	125	9	0	341
12:00	33	11	19	0	4	102	16	1	23	15	19	0	16	117	18	0	393
12:15	26	6	9	0	11	97	22	0	17	10	11	0	19	102	20	0	350
12:30	28	7	12	0	10	106	18	1	17	11	5	0	24	117	13	0	368
12:45	30	20	15	0	6	112	19	0	15	15	9	0	19	117	15	0	392
13:00	27	12	12	1	6	105	26	2	15	17	6	0	13	116	16	0	371
13:15	28	11	6	0	8	83	20	1	20	14	3	0	8	116	8	0	325
13:30	33	10	4	0	2	96	16	0	9	9	1	0	17	88	7	0	292
13:45	29	9	10	0	4	92	22	0	14	15	3	0	16	83	10	0	307
14:00	28	6	20	0	8	85	17	0	9	10	6	0	9	100	15	0	313
14:15	18	8	13	0	1	83	14	0	9	12	2	0	13	104	18	0	295
14:30	28	8	9	1	5	111	21	0	5	5	12	1	9	108	7	0	328
14:45	33	11	9	0	4	103	19	1	18	9	5	0	13	104	17	0	345
15:00	30	5	13	0	3	98	19	0	22	9	5	0	14	107	6	0	331
15:15	25	8	12	2	3	123	11	2	20	15	11	0	10	120	7	0	365
15:30	22	5	10	0	1	98	14	0	29	23	6	1	10	110	11	0	339
15:45	36	6	13	0	1	99	22	2	23	23	5	0	13	122	12	0	375
16:00	38	9	13	0	0	103	16	1	32	31	7	0	11	104	17	0	381
16:15	25	10	11	0	6	100	21	0	27	17	8	0	10	122	7	0	364
16:30	24	11	22	0	4	103	15	0	16	16	11	0	11	120	10	0	363
16:45	34	9	17	0	4	100	15	1	23	27	15	0	11	111	8	0	374
17:00	38	16	27	1	4	111	14	0	33	25	9	0	9	139	16	0	441
17:15	31	14	14	0	2	124	16	0	35	20	12	1	12	123	13	0	416
17:30	29	7	19	0	3	101	7	0	17	10	8	0	13	108	12	0	334
17:45	21	4	9	0	0	82	19	0	20	13	5	1	11	90	4	0	278
18:00	17	7	5	0	2	82	11	0	10	6	7	0	11	112	2	0	272
18:15	10	7	6	0	1	84	19	0	18	10	4	0	12	92	9	0	272
18:30	17	1	8	0	3	80	15	0	14	10	4	0	8	72	9	0	241
18:45	13	4	9	0	4	67	15	0	11	16	1	0	5	72	4	0	221
Total	1230	475	535	10	205	4169	740	18	763	606	271	9	597	4691	607	1	14889

Location: 41st Street NW at 31st Avenue NW International Business Machine
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	31st Avenue NW				42nd ST NW				IBM Road				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	1	0	0	0	3	2	1	0	0	0	0	0	0	0	0	0	7
6:15	0	0	1	0	1	0	0	0	0	0	0	0	0	2	0	0	4
6:30	1	0	0	0	2	2	1	0	0	0	0	0	1	0	0	0	7
6:45	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	2
7:00	1	0	1	0	3	3	2	0	0	0	0	2	0	4	1	0	15
7:15	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:30	1	0	0	1	3	1	1	0	0	0	0	0	1	3	0	0	10
7:45	2	0	0	0	2	0	0	0	0	1	0	0	0	4	0	0	9
8:00	1	0	0	0	2	1	2	0	0	0	0	0	0	1	0	0	7
8:15	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3
8:30	2	0	0	0	3	0	1	1	0	0	0	1	0	2	0	0	8
8:45	1	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	4
9:00	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	4
9:15	0	0	0	0	0	4	0	1	0	0	0	0	0	1	0	0	5
9:30	0	0	0	0	0	4	0	0	0	0	0	0	0	2	1	0	7
9:45	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
10:00	1	0	0	0	0	2	0	0	0	0	0	1	0	1	0	0	4
10:15	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
10:30	0	0	0	0	0	2	0	0	0	0	1	2	1	0	0	0	4
10:45	1	0	0	0	0	3	1	0	0	0	0	1	0	3	1	0	9
11:00	0	1	0	0	1	2	0	0	0	0	0	1	1	6	0	0	11
11:15	1	0	1	0	0	0	1	0	0	0	0	1	1	2	0	0	6
11:30	2	0	1	0	1	1	0	0	1	0	0	0	1	2	1	0	10
11:45	0	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	3
12:00	0	0	0	0	0	1	0	1	1	0	0	0	2	2	0	0	6
12:15	1	2	0	0	1	3	2	0	0	0	0	2	1	0	0	0	10
12:30	1	0	1	0	0	4	1	0	2	0	0	0	0	1	0	0	10
12:45	2	0	0	0	4	0	0	0	0	0	0	1	0	1	1	0	8
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
13:15	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	3
13:30	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	3
13:45	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
14:00	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	2	3
14:15	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	3
14:30	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	0	4
14:45	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
15:00	0	0	0	0	2	1	0	0	1	0	0	0	0	2	0	0	6
15:15	1	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	5
15:30	0	0	0	0	1	2	1	0	0	0	0	0	0	3	0	0	7
15:45	2	0	0	0	3	0	2	1	0	0	0	0	0	0	0	0	7
16:00	1	0	1	0	1	3	0	0	0	0	0	0	0	1	1	0	8
16:15	1	0	0	0	2	1	1	1	0	0	0	0	0	2	0	0	7
16:30	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	1	3
16:45	1	0	1	0	2	1	1	0	0	0	0	0	0	0	0	0	6
17:00	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	0	4
17:15	2	0	0	0	3	1	0	0	0	0	0	0	0	1	0	0	7
17:30	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	5
17:45	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
18:00	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	4
18:15	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
18:30	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	1	4
18:45	1	0	0	0	2	1	1	0	0	0	0	0	0	2	0	0	7
Total	31	3	9	4	56	71	24	5	5	1	1	13	14	66	9	4	290

Location: 41st Street NW at W Frontage Road Marketplace Drive
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	W Frontage Rd				41st St NW				Marketplace Dr NW				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	29	4	8	0	2	22	19	3	3	6	8	0	4	32	4	0	141
6:15	21	2	2	0	7	32	20	0	1	10	7	0	1	42	0	0	145
6:30	30	5	3	1	12	33	29	0	3	6	6	0	4	49	6	0	186
6:45	31	10	5	1	13	38	46	0	6	5	10	0	4	43	3	2	214
7:00	37	8	4	0	10	52	31	0	5	10	15	0	8	47	5	0	232
7:15	30	5	12	0	16	67	50	0	15	10	12	0	3	51	4	1	275
7:30	27	10	4	5	16	92	53	0	15	16	16	14	2	91	5	1	347
7:45	36	16	12	0	18	101	62	0	13	18	14	0	10	70	6	0	376
8:00	32	17	8	0	16	77	59	1	16	21	19	1	6	63	9	2	343
8:15	37	14	8	0	15	71	53	0	11	16	24	0	8	64	4	0	325
8:30	43	16	10	0	19	62	43	0	10	21	18	0	14	78	12	3	346
8:45	45	14	13	2	32	88	49	0	10	20	34	0	9	92	4	0	410
9:00	46	10	11	0	19	72	35	0	13	15	26	0	9	93	9	1	358
9:15	33	20	11	0	25	53	44	0	15	25	36	0	14	86	8	0	370
9:30	51	15	20	0	27	78	59	0	17	21	30	0	12	85	11	0	426
9:45	46	29	10	0	24	57	51	1	19	23	32	1	14	92	11	0	408
10:00	54	18	14	0	40	72	55	0	9	24	26	0	14	97	8	1	431
10:15	52	28	14	1	35	64	42	1	18	23	43	0	11	99	8	0	437
10:30	51	22	19	0	25	62	54	0	12	36	49	0	18	114	12	1	474
10:45	50	31	14	0	40	64	43	0	23	21	51	4	14	105	13	0	469
11:00	63	29	14	3	34	69	43	1	20	28	47	0	23	97	17	4	484
11:15	52	35	19	0	44	68	54	0	19	31	61	0	16	132	22	0	553
11:30	68	51	19	1	40	74	48	1	22	27	66	1	21	137	22	1	595
11:45	57	35	14	0	50	90	50	0	30	49	70	0	25	138	20	6	628
12:00	68	26	18	0	29	78	57	0	34	35	73	1	28	138	28	0	612
12:15	64	34	17	0	41	99	63	0	32	41	74	0	18	135	32	2	650
12:30	70	39	10	0	36	78	52	0	34	39	103	0	15	137	27	1	640
12:45	71	33	10	0	35	78	54	2	26	48	94	0	18	141	18	0	626
13:00	50	37	16	0	35	63	37	0	32	46	69	0	21	129	18	0	553
13:15	56	38	18	0	42	69	60	0	25	36	71	0	18	119	16	0	568
13:30	60	36	13	0	46	80	42	0	29	35	92	0	25	149	14	1	621
13:45	55	31	15	0	49	85	60	0	23	30	74	0	19	143	17	1	601
14:00	70	28	15	0	26	67	46	0	24	34	75	0	16	131	16	1	548
14:15	52	26	10	0	25	75	56	1	27	36	74	0	18	127	13	0	539
14:30	65	34	18	0	33	66	63	0	19	37	61	1	18	135	18	0	567
14:45	53	25	9	0	42	92	46	1	29	38	57	1	23	113	9	1	536
15:00	71	38	11	0	38	77	40	0	22	32	72	0	13	132	7	0	553
15:15	71	35	14	1	32	75	46	0	18	25	62	0	26	172	17	3	593
15:30	81	24	16	1	37	86	45	1	18	41	85	0	8	134	11	5	586
15:45	73	27	12	0	44	97	68	0	23	39	66	1	25	167	18	0	659
16:00	80	39	14	0	39	82	62	2	23	30	89	3	20	172	9	2	659
16:15	97	43	13	2	32	89	60	1	14	35	93	0	18	194	20	0	708
16:30	100	38	9	2	43	64	45	0	28	32	81	0	20	162	16	3	638
16:45	92	42	18	0	38	102	62	2	24	32	82	1	15	170	15	0	692
17:00	112	35	9	0	41	62	53	1	21	46	106	1	17	167	19	1	688
17:15	79	32	13	1	41	99	62	0	17	38	82	0	17	183	10	3	673
17:30	78	23	4	0	38	77	53	0	18	43	95	2	15	148	19	0	611
17:45	53	34	10	0	38	71	42	0	26	29	74	0	14	143	10	2	544
18:00	63	23	10	0	48	56	33	5	24	32	91	0	18	133	18	6	549
18:15	57	33	10	1	36	54	50	0	20	29	71	0	9	120	10	1	499
18:30	53	33	5	1	35	44	38	2	20	33	81	0	18	90	11	1	461
18:45	65	31	11	0	21	57	41	5	22	31	73	5	16	102	17	3	487
Total	2980	1361	616	23	1619	3680	2528	31	997	1484	2940	37	770	5983	676	60	25634
Cars+	2927	1356	596	11	1594	3572	2505	24	983	1473	2924	15	753	5878	671	47	25232
Trucks	53	5	20	12	25	108	23	7	14	11	16	22	17	105	5	13	402
% Trucks	1.8	0.4	3.2	52.2	1.5	2.9	0.9	22.6	1.4	0.7	0.5	59.5	2.2	1.8	0.7	21.7	
	1.6				2.0				0.8				1.7				1.6

Location: 41st Street NW at W Frontage Road Marketplace Drive
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	W Frontage Rd				41st St NW				Marketplace Dr NW				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	28	4	8	0	1	17	18	0	3	6	8	0	4	30	4	0	131
6:15	21	1	2	0	7	30	20	0	1	9	6	0	1	38	0	0	136
6:30	30	5	2	0	10	29	29	0	3	6	6	0	3	45	6	0	174
6:45	30	10	3	0	13	36	46	0	6	5	9	0	4	41	3	1	206
7:00	36	8	4	0	10	44	31	0	5	10	15	0	8	43	4	0	218
7:15	29	5	11	0	16	63	50	0	15	10	12	0	3	49	4	1	267
7:30	26	10	4	1	14	88	53	0	15	15	16	2	1	87	5	1	334
7:45	32	16	11	0	18	98	62	0	13	18	14	0	10	67	6	0	365
8:00	32	17	7	0	15	74	59	1	16	21	19	1	6	58	9	2	333
8:15	35	13	8	0	15	68	52	0	10	16	23	0	7	60	4	0	311
8:30	43	16	9	0	18	59	42	0	10	21	18	0	13	72	12	2	333
8:45	45	14	13	0	32	86	49	0	9	20	33	0	9	88	4	0	402
9:00	45	9	9	0	19	70	34	0	13	15	26	0	8	89	9	0	346
9:15	31	20	11	0	25	52	44	0	15	25	36	0	14	83	8	0	364
9:30	50	15	20	0	26	77	59	0	16	20	30	0	12	84	11	0	420
9:45	45	29	10	0	23	56	51	1	18	23	29	1	14	91	11	0	400
10:00	52	18	13	0	40	71	54	0	8	24	26	0	13	95	7	1	421
10:15	48	28	13	1	34	63	42	1	17	23	42	0	11	97	8	0	426
10:30	50	22	19	0	24	60	53	0	12	35	49	0	18	112	12	0	466
10:45	49	31	14	0	40	63	42	0	23	21	50	0	14	102	13	0	462
11:00	63	29	14	3	34	69	43	0	19	28	44	0	22	97	17	3	479
11:15	50	35	19	0	44	68	54	0	19	31	60	0	16	129	22	0	547
11:30	67	51	19	1	40	71	47	1	22	27	66	1	21	137	22	1	590
11:45	56	35	14	0	49	90	49	0	28	48	70	0	24	134	20	5	617
12:00	66	26	18	0	28	78	56	0	34	35	73	1	27	138	28	0	607
12:15	62	33	17	0	40	96	63	0	31	41	74	0	18	134	32	2	641
12:30	69	39	10	0	35	77	51	0	34	39	103	0	15	135	26	0	633
12:45	70	33	9	0	35	78	54	2	26	48	94	0	18	138	18	0	621
13:00	49	37	15	0	35	63	36	0	30	45	69	0	20	128	18	0	545
13:15	55	38	18	0	41	69	60	0	24	36	71	0	17	119	16	0	564
13:30	60	36	13	0	45	79	41	0	29	35	91	0	25	147	14	1	615
13:45	53	31	15	0	49	84	60	0	23	29	74	0	19	139	16	1	592
14:00	68	28	15	0	26	65	45	0	24	34	75	0	15	130	16	1	541
14:15	50	26	10	0	25	75	55	1	27	35	74	0	18	125	13	0	533
14:30	64	34	18	0	33	65	62	0	19	37	61	0	18	135	18	0	564
14:45	52	25	9	0	41	92	45	1	29	38	56	1	22	112	8	0	529
15:00	70	38	11	0	38	75	39	0	22	32	72	0	12	132	7	0	548
15:15	69	35	14	0	32	73	45	0	18	25	62	0	26	169	17	2	585
15:30	81	24	16	1	36	81	44	0	18	40	85	0	8	134	11	3	578
15:45	71	27	11	0	44	95	67	0	22	38	66	0	25	165	18	0	649
16:00	80	39	14	0	38	79	61	2	23	30	89	1	20	171	9	2	653
16:15	96	43	12	2	32	86	60	1	14	35	93	0	18	193	20	0	702
16:30	100	38	9	2	42	61	45	0	28	31	81	0	20	160	16	3	631
16:45	92	42	17	0	38	99	61	2	24	32	82	1	15	168	15	0	685
17:00	111	35	9	0	39	59	53	1	21	46	106	1	16	167	19	0	681
17:15	79	32	12	0	41	97	62	0	17	38	82	0	17	180	10	3	667
17:30	78	23	4	0	37	73	53	0	18	43	95	0	15	148	19	0	606
17:45	52	34	9	0	38	68	42	0	26	29	73	0	14	142	10	2	537
18:00	63	23	10	0	48	56	33	4	24	32	91	0	18	132	18	5	548
18:15	57	33	9	0	36	50	50	0	20	29	71	0	9	119	10	1	493
18:30	52	33	5	0	34	42	38	2	20	33	81	0	16	90	11	1	455
18:45	65	30	10	0	21	55	41	4	22	31	73	5	16	100	17	3	481
Total	2927	1356	596	11	1594	3572	2505	24	983	1473	2924	15	753	5878	671	47	25232

Location: 41st Street NW at W Frontage Road Marketplace Drive
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	W Frontage Rd				41st St NW				Marketplace Dr NW				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	1	0	0	0	1	5	1	3	0	0	0	0	0	2	0	0	10
6:15	0	1	0	0	0	2	0	0	0	1	1	0	0	4	0	0	9
6:30	0	0	1	1	2	4	0	0	0	0	0	0	1	4	0	0	12
6:45	1	0	2	1	0	2	0	0	0	0	1	0	0	2	0	1	8
7:00	1	0	0	0	0	8	0	0	0	0	0	0	0	4	1	0	14
7:15	1	0	1	0	0	4	0	0	0	0	0	0	0	2	0	0	8
7:30	1	0	0	4	2	4	0	0	0	1	0	12	1	4	0	0	13
7:45	4	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	11
8:00	0	0	1	0	1	3	0	0	0	0	0	0	0	5	0	0	10
8:15	2	1	0	0	0	3	1	0	1	0	1	0	1	4	0	0	14
8:30	0	0	1	0	1	3	1	0	0	0	0	0	1	6	0	1	13
8:45	0	0	0	2	0	2	0	0	1	0	1	0	0	4	0	0	8
9:00	1	1	2	0	0	2	1	0	0	0	0	0	1	4	0	1	12
9:15	2	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	6
9:30	1	0	0	0	1	1	0	0	1	1	0	0	0	1	0	0	6
9:45	1	0	0	0	1	1	0	0	1	0	3	0	0	1	0	0	8
10:00	2	0	1	0	0	1	1	0	1	0	0	0	1	2	1	0	10
10:15	4	0	1	0	1	1	0	0	1	0	1	0	0	2	0	0	11
10:30	1	0	0	0	1	2	1	0	0	1	0	0	0	2	0	1	8
10:45	1	0	0	0	0	1	1	0	0	0	1	4	0	3	0	0	7
11:00	0	0	0	0	0	0	0	1	1	0	3	0	1	0	0	1	5
11:15	2	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	6
11:30	1	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	5
11:45	1	0	0	0	1	0	1	0	2	1	0	0	1	4	0	1	11
12:00	2	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	5
12:15	2	1	0	0	1	3	0	0	1	0	0	0	0	1	0	0	9
12:30	1	0	0	0	1	1	1	0	0	0	0	0	0	2	1	1	7
12:45	1	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	5
13:00	1	0	1	0	0	0	1	0	2	1	0	0	1	1	0	0	8
13:15	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	4
13:30	0	0	0	0	1	1	1	0	0	0	1	0	0	2	0	0	6
13:45	2	0	0	0	0	1	0	0	0	1	0	0	0	4	1	0	9
14:00	2	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	7
14:15	2	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	6
14:30	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	3
14:45	1	0	0	0	1	0	1	0	0	0	1	0	1	1	1	1	7
15:00	1	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	5
15:15	2	0	0	1	0	2	1	0	0	0	0	0	0	3	0	1	8
15:30	0	0	0	0	1	5	1	1	0	1	0	0	0	0	0	2	8
15:45	2	0	1	0	0	2	1	0	1	1	0	1	0	2	0	0	10
16:00	0	0	0	0	1	3	1	0	0	0	0	2	0	1	0	0	6
16:15	1	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	6
16:30	0	0	0	0	1	3	0	0	0	1	0	0	0	2	0	0	7
16:45	0	0	1	0	0	3	1	0	0	0	0	0	0	2	0	0	7
17:00	1	0	0	0	2	3	0	0	0	0	0	0	1	0	0	1	7
17:15	0	0	1	1	0	2	0	0	0	0	0	0	0	3	0	0	6
17:30	0	0	0	0	1	4	0	0	0	0	0	2	0	0	0	0	5
17:45	1	0	1	0	0	3	0	0	0	0	1	0	0	1	0	0	7
18:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1
18:15	0	0	1	1	0	4	0	0	0	0	0	0	0	1	0	0	6
18:30	1	0	0	1	1	2	0	0	0	0	0	0	2	0	0	0	6
18:45	0	1	1	0	0	2	0	1	0	0	0	0	0	2	0	0	6
Total	53	5	20	12	25	108	23	7	14	11	16	22	17	105	5	13	402

Location: 41st Street NW at SB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	US 52 Ramp				41st St NW				N/A				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	4	15	9	0	35	36	0	0	0	0	0	0	0	20	49	0	168
6:15	5	21	13	0	38	47	0	0	0	0	0	0	0	15	55	0	194
6:30	6	24	11	2	44	60	0	0	0	0	0	2	0	35	47	1	227
6:45	4	27	20	2	51	79	0	0	0	0	0	0	0	26	59	0	266
7:00	9	33	19	2	50	67	0	0	0	0	0	0	0	39	59	0	276
7:15	6	28	24	3	52	113	0	0	0	0	0	0	0	43	50	0	316
7:30	13	41	71	19	86	108	0	0	0	0	0	1	0	46	77	0	442
7:45	8	47	32	3	77	147	0	0	0	0	0	0	0	61	66	0	438
8:00	10	36	43	4	52	119	0	0	0	0	0	1	0	59	50	1	369
8:15	7	35	29	1	48	108	0	0	0	0	0	0	0	70	57	0	354
8:30	10	32	31	1	53	105	0	0	0	0	0	1	0	67	75	0	373
8:45	12	31	35	2	66	126	0	0	0	0	0	0	0	92	80	0	442
9:00	13	20	30	0	34	101	0	0	0	0	0	0	0	75	86	0	359
9:15	8	24	28	0	32	93	0	0	0	0	0	0	0	82	73	0	340
9:30	11	17	26	2	48	131	0	0	0	0	0	0	0	83	86	0	402
9:45	4	24	36	1	44	100	0	0	0	0	0	0	0	89	78	0	375
10:00	14	21	36	1	35	131	0	0	0	0	0	0	0	91	86	0	414
10:15	12	20	29	2	58	107	0	0	0	0	0	0	0	97	93	0	416
10:30	10	22	36	1	60	116	0	0	0	0	0	0	0	123	95	0	462
10:45	15	23	29	0	50	113	0	0	0	0	0	2	0	117	88	0	435
11:00	15	18	34	1	42	109	0	0	0	0	0	0	0	102	106	0	426
11:15	16	27	33	5	47	135	0	0	0	0	0	0	0	124	119	0	501
11:30	15	14	27	2	56	132	0	0	0	0	0	0	0	142	124	0	510
11:45	17	24	39	3	56	147	0	0	0	0	0	0	0	142	126	0	551
12:00	10	16	29	2	63	140	0	0	0	0	0	0	0	141	129	0	528
12:15	11	29	50	1	65	141	0	0	0	0	0	0	0	141	139	0	576
12:30	19	22	37	1	68	131	0	0	0	0	0	1	0	163	145	0	585
12:45	18	21	39	0	62	128	0	0	0	0	0	1	0	167	125	0	560
13:00	12	14	27	3	62	114	0	0	0	0	0	0	0	140	128	1	497
13:15	16	20	38	0	61	139	0	0	0	0	0	0	0	135	112	0	521
13:30	13	22	34	0	57	129	0	0	0	0	0	0	0	151	142	0	548
13:45	16	13	35	1	72	150	0	0	0	0	0	0	0	141	127	0	554
14:00	15	17	24	0	55	115	0	0	0	0	0	0	0	153	127	0	506
14:15	12	20	23	2	61	142	0	0	0	0	0	0	0	140	114	0	512
14:30	16	21	28	2	74	128	0	0	0	0	0	1	0	135	127	0	529
14:45	22	11	31	0	66	146	0	0	0	0	0	1	0	132	98	0	506
15:00	20	18	30	1	54	117	0	1	0	0	0	1	0	141	135	0	515
15:15	18	15	28	0	57	138	0	0	0	0	0	2	0	175	133	0	564
15:30	14	21	26	2	72	132	0	0	0	0	0	1	0	167	144	0	576
15:45	14	23	31	0	71	181	0	0	0	0	0	0	0	162	143	0	625
16:00	19	28	34	3	64	154	0	0	0	0	0	1	0	197	156	1	652
16:15	22	30	29	3	82	142	0	0	0	0	0	4	0	197	186	0	688
16:30	20	20	19	2	68	131	0	0	0	0	0	0	0	185	162	0	605
16:45	18	31	45	6	90	158	0	0	0	0	0	2	0	184	154	0	680
17:00	21	42	33	1	83	127	0	0	0	0	0	0	0	221	167	0	694
17:15	13	23	33	3	95	170	0	0	0	0	0	0	0	166	163	0	663
17:30	22	31	26	2	64	140	0	0	0	0	0	2	0	173	164	0	620
17:45	18	23	24	0	71	129	0	0	0	0	0	3	0	157	121	0	543
18:00	17	19	34	3	67	108	0	0	0	0	0	0	0	149	128	1	522
18:15	14	16	17	3	51	111	0	0	0	0	0	2	0	126	133	1	468
18:30	18	12	20	4	40	99	0	0	0	0	0	0	0	109	110	0	408
18:45	10	18	12	2	64	107	0	0	0	0	0	1	0	126	115	0	452
Total	702	1220	1556	104	3073	6277	0	1	0	0	0	30	0	6214	5711	6	24753
Cars+	694	1196	1537	67	3053	6140	0	0	0	0	0	18	0	6149	5602	4	24371
Trucks	8	24	19	37	20	137	0	1	0	0	0	12	0	65	109	2	382
% Trucks	1.1	2.0	1.2	35.6	0.7	2.2	0.0	100.0	0.0	0.0	0.0	40.0	0.0	1.0	1.9	33.3	
	1.5				1.7				0.0				1.5				1.5

Location: 41st Street NW at SB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	US 52 Ramp				41st St NW				N/A				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	4	15	7	0	35	31	0	0	0	0	0	0	0	19	47	0	158
6:15	5	21	13	0	37	45	0	0	0	0	0	0	0	14	51	0	186
6:30	6	24	10	1	44	55	0	0	0	0	0	2	0	32	45	1	216
6:45	4	27	19	1	51	77	0	0	0	0	0	0	0	24	56	0	258
7:00	8	32	18	1	48	61	0	0	0	0	0	0	0	37	56	0	260
7:15	6	28	24	3	51	108	0	0	0	0	0	0	0	41	49	0	307
7:30	13	40	69	3	86	105	0	0	0	0	0	1	0	46	73	0	432
7:45	8	47	30	2	77	146	0	0	0	0	0	0	0	60	59	0	427
8:00	10	35	42	4	52	116	0	0	0	0	0	0	0	58	48	0	361
8:15	6	35	28	1	47	105	0	0	0	0	0	0	0	65	54	0	340
8:30	10	31	29	0	52	102	0	0	0	0	0	1	0	65	71	0	360
8:45	12	31	35	0	66	124	0	0	0	0	0	0	0	90	75	0	433
9:00	13	19	30	0	34	98	0	0	0	0	0	0	0	75	82	0	351
9:15	8	24	28	0	31	92	0	0	0	0	0	0	0	81	68	0	332
9:30	11	17	26	1	47	128	0	0	0	0	0	0	0	82	85	0	396
9:45	4	24	36	1	43	99	0	0	0	0	0	0	0	88	74	0	368
10:00	14	20	36	1	34	129	0	0	0	0	0	0	0	91	83	0	407
10:15	12	18	27	2	58	107	0	0	0	0	0	0	0	96	88	0	406
10:30	9	22	35	1	59	113	0	0	0	0	0	0	0	121	93	0	452
10:45	15	21	29	0	50	111	0	0	0	0	0	0	0	115	86	0	427
11:00	14	18	33	1	42	109	0	0	0	0	0	0	0	101	104	0	421
11:15	16	25	33	4	47	135	0	0	0	0	0	0	0	121	116	0	493
11:30	15	14	27	2	55	128	0	0	0	0	0	0	0	142	123	0	504
11:45	17	22	39	3	55	145	0	0	0	0	0	0	0	138	125	0	541
12:00	10	16	29	2	63	138	0	0	0	0	0	0	0	141	127	0	524
12:15	11	29	49	0	64	138	0	0	0	0	0	0	0	140	137	0	568
12:30	19	22	37	0	68	128	0	0	0	0	0	1	0	162	143	0	579
12:45	17	21	39	0	61	128	0	0	0	0	0	0	0	165	123	0	554
13:00	12	13	27	3	62	113	0	0	0	0	0	0	0	139	127	1	493
13:15	16	19	38	0	60	138	0	0	0	0	0	0	0	135	111	0	517
13:30	13	21	34	0	57	126	0	0	0	0	0	0	0	149	142	0	542
13:45	16	11	35	1	72	149	0	0	0	0	0	0	0	138	124	0	545
14:00	15	17	24	0	55	112	0	0	0	0	0	0	0	151	126	0	500
14:15	12	20	23	1	61	141	0	0	0	0	0	0	0	138	112	0	507
14:30	16	21	28	1	74	126	0	0	0	0	0	0	0	135	126	0	526
14:45	22	11	31	0	66	145	0	0	0	0	0	1	0	130	97	0	502
15:00	20	18	29	0	54	115	0	0	0	0	0	1	0	141	134	0	511
15:15	18	15	28	0	57	135	0	0	0	0	0	2	0	173	130	0	556
15:30	14	20	26	2	70	126	0	0	0	0	0	0	0	167	144	0	567
15:45	14	23	31	0	71	178	0	0	0	0	0	0	0	160	141	0	618
16:00	18	28	34	3	64	149	0	0	0	0	0	0	0	197	155	1	645
16:15	21	29	29	3	81	139	0	0	0	0	0	2	0	196	185	0	680
16:30	20	20	19	2	68	126	0	0	0	0	0	0	0	185	160	0	598
16:45	18	31	45	6	90	154	0	0	0	0	0	1	0	183	154	0	675
17:00	20	40	33	0	82	122	0	0	0	0	0	0	0	221	165	0	683
17:15	13	23	33	1	95	168	0	0	0	0	0	0	0	164	162	0	658
17:30	22	31	26	2	64	135	0	0	0	0	0	0	0	173	164	0	615
17:45	18	23	24	0	71	126	0	0	0	0	0	3	0	155	120	0	537
18:00	17	19	34	3	67	107	0	0	0	0	0	0	0	149	127	0	520
18:15	14	16	17	2	51	108	0	0	0	0	0	2	0	126	132	1	464
18:30	18	11	20	1	40	96	0	0	0	0	0	0	0	109	109	0	403
18:45	10	18	12	2	64	105	0	0	0	0	0	1	0	125	114	0	448
Total	694	1196	1537	67	3053	6140	0	0	0	0	0	18	0	6149	5602	4	24371

Location: 41st Street NW at SB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	US 52 Ramp				41st St NW				N/A				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	2	0	0	5	0	0	0	0	0	0	0	1	2	0	10
6:15	0	0	0	0	1	2	0	0	0	0	0	0	0	1	4	0	8
6:30	0	0	1	1	0	5	0	0	0	0	0	0	0	3	2	0	11
6:45	0	0	1	1	0	2	0	0	0	0	0	0	0	2	3	0	8
7:00	1	1	1	1	2	6	0	0	0	0	0	0	0	2	3	0	16
7:15	0	0	0	0	1	5	0	0	0	0	0	0	0	2	1	0	9
7:30	0	1	2	16	0	3	0	0	0	0	0	0	0	0	4	0	10
7:45	0	0	2	1	0	1	0	0	0	0	0	0	0	1	7	0	11
8:00	0	1	1	0	0	3	0	0	0	0	0	1	0	1	2	1	8
8:15	1	0	1	0	1	3	0	0	0	0	0	0	0	5	3	0	14
8:30	0	1	2	1	1	3	0	0	0	0	0	0	0	2	4	0	13
8:45	0	0	0	2	0	2	0	0	0	0	0	0	0	2	5	0	9
9:00	0	1	0	0	0	3	0	0	0	0	0	0	0	0	4	0	8
9:15	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5	0	8
9:30	0	0	0	1	1	3	0	0	0	0	0	0	0	1	1	0	6
9:45	0	0	0	0	1	1	0	0	0	0	0	0	0	1	4	0	7
10:00	0	1	0	0	1	2	0	0	0	0	0	0	0	0	3	0	7
10:15	0	2	2	0	0	0	0	0	0	0	0	0	0	1	5	0	10
10:30	1	0	1	0	1	3	0	0	0	0	0	0	0	2	2	0	10
10:45	0	2	0	0	0	2	0	0	0	0	0	2	0	2	2	0	8
11:00	1	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0	5
11:15	0	2	0	1	0	0	0	0	0	0	0	0	0	3	3	0	8
11:30	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1	0	6
11:45	0	2	0	0	1	2	0	0	0	0	0	0	0	4	1	0	10
12:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	4
12:15	0	0	1	1	1	3	0	0	0	0	0	0	0	1	2	0	8
12:30	0	0	0	1	0	3	0	0	0	0	0	0	0	1	2	0	6
12:45	1	0	0	0	1	0	0	0	0	0	0	1	0	2	2	0	6
13:00	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	4
13:15	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0	4
13:30	0	1	0	0	0	3	0	0	0	0	0	0	0	2	0	0	6
13:45	0	2	0	0	0	1	0	0	0	0	0	0	0	3	3	0	9
14:00	0	0	0	0	0	3	0	0	0	0	0	0	0	2	1	0	6
14:15	0	0	0	1	0	1	0	0	0	0	0	0	0	2	2	0	5
14:30	0	0	0	1	0	2	0	0	0	0	0	1	0	0	1	0	3
14:45	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	0	4
15:00	0	0	1	1	0	2	0	1	0	0	0	0	0	0	1	0	4
15:15	0	0	0	0	0	3	0	0	0	0	0	0	0	2	3	0	8
15:30	0	1	0	0	2	6	0	0	0	0	0	1	0	0	0	0	9
15:45	0	0	0	0	0	3	0	0	0	0	0	0	0	2	2	0	7
16:00	1	0	0	0	0	5	0	0	0	0	0	1	0	0	1	0	7
16:15	1	1	0	0	1	3	0	0	0	0	0	2	0	1	1	0	8
16:30	0	0	0	0	0	5	0	0	0	0	0	0	0	0	2	0	7
16:45	0	0	0	0	0	4	0	0	0	0	0	1	0	1	0	0	5
17:00	1	2	0	1	1	5	0	0	0	0	0	0	0	0	2	0	11
17:15	0	0	0	2	0	2	0	0	0	0	0	0	0	2	1	0	5
17:30	0	0	0	0	0	5	0	0	0	0	0	2	0	0	0	0	5
17:45	0	0	0	0	0	3	0	0	0	0	0	0	0	2	1	0	6
18:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2
18:15	0	0	0	1	0	3	0	0	0	0	0	0	0	0	1	0	4
18:30	0	1	0	3	0	3	0	0	0	0	0	0	0	0	1	0	5
18:45	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	4
Total	8	24	19	37	20	137	0	1	0	0	0	12	0	65	109	2	382

Location: 41st Street NW at NB US 52 Ramp E Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	N/A				41st St NW				E Frontage Rd				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	0	0	0	0	58	8	0	15	0	13	0	8	17	0	0	119
6:15	0	0	0	0	0	62	8	0	23	0	12	1	3	16	0	0	124
6:30	0	0	0	2	0	73	7	0	31	0	15	1	7	34	0	0	167
6:45	0	0	0	2	0	96	3	0	37	0	16	0	3	29	0	0	184
7:00	0	0	0	2	0	97	6	0	24	0	24	0	7	40	0	0	198
7:15	0	0	0	4	0	111	3	0	52	0	17	0	6	41	0	0	230
7:30	0	0	0	19	0	138	8	0	60	0	27	1	7	55	0	0	295
7:45	0	0	0	3	0	150	8	0	74	0	38	1	12	58	0	0	340
8:00	0	0	0	5	0	116	11	0	57	0	22	1	10	60	0	0	276
8:15	0	0	0	0	0	118	6	0	36	1	26	0	21	52	0	0	260
8:30	0	0	0	1	0	110	13	0	49	0	36	1	17	60	0	0	285
8:45	0	0	0	2	0	152	18	0	39	0	43	0	17	88	0	0	357
9:00	0	0	0	0	0	91	11	0	44	0	24	0	26	61	0	0	257
9:15	0	0	0	0	0	94	10	0	36	1	24	0	17	71	0	0	253
9:30	0	0	0	2	0	137	13	0	40	1	19	0	22	76	0	0	308
9:45	0	0	0	1	0	101	19	0	44	0	32	0	17	77	0	0	290
10:00	0	0	0	1	0	121	12	0	49	2	26	0	20	82	0	0	312
10:15	0	0	0	2	0	119	7	0	47	3	28	2	27	88	0	0	319
10:30	0	0	0	1	0	137	13	0	35	2	23	0	21	114	0	0	345
10:45	0	0	0	0	0	121	14	0	44	2	26	2	31	96	0	0	334
11:00	0	0	0	1	0	122	14	0	36	0	21	0	37	84	0	0	314
11:15	0	0	0	5	0	130	12	0	52	3	31	0	29	102	0	0	359
11:30	0	0	0	2	0	154	18	0	40	2	33	1	38	125	0	0	410
11:45	0	0	0	3	0	156	19	0	49	1	37	0	21	131	0	0	414
12:00	0	0	0	0	0	150	19	0	48	5	36	0	32	129	0	0	419
12:15	0	0	0	1	0	162	14	0	54	4	35	3	36	118	0	0	423
12:30	0	0	0	1	0	141	14	0	51	1	36	1	38	136	0	0	417
12:45	0	0	0	0	0	135	14	0	58	2	52	1	45	139	0	0	445
13:00	0	0	0	3	0	134	17	0	41	2	46	0	30	124	0	0	394
13:15	0	0	0	2	0	157	10	0	53	1	31	0	32	119	0	0	403
13:30	0	0	0	0	0	149	17	0	35	3	40	2	49	118	0	0	411
13:45	0	0	0	0	0	176	18	0	50	2	44	1	30	126	0	0	446
14:00	0	0	0	1	0	128	11	0	37	6	35	0	33	130	0	0	380
14:15	0	0	0	2	0	140	11	0	67	6	28	0	40	114	0	0	406
14:30	0	0	0	1	0	160	19	0	52	3	42	0	35	115	0	0	426
14:45	0	0	0	0	0	149	26	0	58	5	42	0	29	125	0	0	434
15:00	0	0	0	0	0	128	16	0	42	6	31	3	33	130	0	0	386
15:15	0	0	0	0	0	140	19	0	53	3	42	2	42	149	0	0	448
15:30	0	0	0	2	0	158	23	0	51	5	40	1	56	129	0	0	462
15:45	0	0	0	0	0	167	23	0	82	4	60	0	36	138	0	0	510
16:00	0	0	0	3	0	160	24	0	61	4	46	1	49	154	0	0	498
16:15	0	0	0	4	0	164	21	0	55	5	52	4	66	148	0	0	511
16:30	0	0	0	5	0	155	40	0	46	4	57	0	58	154	0	0	514
16:45	0	0	0	2	0	182	24	0	61	4	64	2	61	142	0	0	538
17:00	0	0	0	4	0	171	25	0	53	4	59	0	47	191	0	0	550
17:15	0	0	0	3	0	195	23	0	58	3	50	0	45	143	0	0	517
17:30	0	0	0	1	0	159	27	0	51	0	60	2	55	132	0	0	484
17:45	0	0	0	1	0	145	16	0	48	3	46	3	45	134	0	0	437
18:00	0	0	0	3	0	146	17	0	35	3	44	0	31	137	1	0	414
18:15	0	0	0	4	0	123	13	0	42	4	43	2	26	113	0	0	364
18:30	0	0	0	2	0	97	17	0	41	4	36	0	27	101	0	0	323
18:45	0	0	0	3	0	128	9	0	42	1	35	1	29	109	1	0	354
Total	0	0	0	106	0	6963	788	0	2438	115	1845	40	1559	5354	2	0	19064
Cars+	0	0	0	72	0	6884	781	0	2361	115	1783	28	1542	5298	2	0	18766
Trucks	0	0	0	34	0	79	7	0	77	0	62	12	17	56	0	0	298
% Trucks	0.0	0.0	0.0	32.1	0.0	1.1	0.9	0.0	3.2	0.0	3.4	30.0	1.1	1.0	0.0	0.0	
	0.0				1.1				3.2				1.1				1.6

Location: 41st Street NW at NB US 52 Ramp E Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	N/A				41st St NW				E Frontage Rd				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	0	0	0	0	56	8	0	12	0	11	0	7	17	0	0	111
6:15	0	0	0	0	0	60	8	0	22	0	12	1	3	15	0	0	120
6:30	0	0	0	1	0	71	7	0	28	0	13	1	6	32	0	0	157
6:45	0	0	0	1	0	94	3	0	36	0	15	0	3	27	0	0	178
7:00	0	0	0	1	0	94	6	0	20	0	21	0	7	37	0	0	185
7:15	0	0	0	4	0	106	3	0	51	0	17	0	6	39	0	0	222
7:30	0	0	0	3	0	137	8	0	58	0	25	1	7	55	0	0	290
7:45	0	0	0	2	0	150	8	0	73	0	38	1	12	57	0	0	338
8:00	0	0	0	5	0	114	11	0	56	0	20	0	9	59	0	0	269
8:15	0	0	0	0	0	116	6	0	35	1	26	0	20	48	0	0	252
8:30	0	0	0	0	0	107	13	0	48	0	35	1	17	58	0	0	278
8:45	0	0	0	0	0	152	18	0	37	0	42	0	16	87	0	0	352
9:00	0	0	0	0	0	90	11	0	42	0	23	0	26	61	0	0	253
9:15	0	0	0	0	0	92	10	0	36	1	24	0	16	71	0	0	250
9:30	0	0	0	1	0	134	13	0	39	1	18	0	22	75	0	0	302
9:45	0	0	0	1	0	100	19	0	43	0	30	0	17	76	0	0	285
10:00	0	0	0	1	0	118	12	0	49	2	25	0	20	82	0	0	308
10:15	0	0	0	2	0	119	7	0	47	3	27	2	27	87	0	0	317
10:30	0	0	0	1	0	133	13	0	35	2	22	0	19	113	0	0	337
10:45	0	0	0	0	0	121	14	0	42	2	25	0	30	95	0	0	329
11:00	0	0	0	1	0	122	14	0	36	0	20	0	37	82	0	0	311
11:15	0	0	0	4	0	130	12	0	52	3	31	0	28	100	0	0	356
11:30	0	0	0	2	0	149	18	0	40	2	32	1	38	125	0	0	404
11:45	0	0	0	3	0	154	19	0	47	1	35	0	20	128	0	0	404
12:00	0	0	0	0	0	150	18	0	47	5	34	0	32	129	0	0	415
12:15	0	0	0	1	0	161	14	0	51	4	35	3	35	118	0	0	418
12:30	0	0	0	1	0	139	14	0	50	1	34	1	38	135	0	0	411
12:45	0	0	0	0	0	134	12	0	58	2	48	0	45	136	0	0	435
13:00	0	0	0	2	0	133	17	0	41	2	43	0	30	123	0	0	389
13:15	0	0	0	2	0	155	10	0	53	1	31	0	32	119	0	0	401
13:30	0	0	0	0	0	147	16	0	34	3	39	2	48	117	0	0	404
13:45	0	0	0	0	0	176	18	0	49	2	42	1	30	123	0	0	440
14:00	0	0	0	1	0	127	11	0	35	6	34	0	33	128	0	0	374
14:15	0	0	0	1	0	140	11	0	66	6	28	0	39	113	0	0	403
14:30	0	0	0	1	0	158	19	0	51	3	41	0	35	115	0	0	422
14:45	0	0	0	0	0	149	25	0	58	5	41	0	28	124	0	0	430
15:00	0	0	0	0	0	127	16	0	41	6	30	2	33	130	0	0	383
15:15	0	0	0	0	0	140	19	0	50	3	40	2	42	147	0	0	441
15:30	0	0	0	2	0	153	23	0	48	5	39	0	56	129	0	0	453
15:45	0	0	0	0	0	167	23	0	79	4	58	0	35	137	0	0	503
16:00	0	0	0	3	0	157	24	0	58	4	46	0	49	153	0	0	491
16:15	0	0	0	4	0	163	21	0	53	5	50	2	66	146	0	0	504
16:30	0	0	0	5	0	153	40	0	43	4	57	0	58	154	0	0	509
16:45	0	0	0	1	0	182	24	0	57	4	62	1	61	141	0	0	531
17:00	0	0	0	3	0	166	25	0	51	4	59	0	47	191	0	0	543
17:15	0	0	0	1	0	195	23	0	57	3	48	0	44	141	0	0	511
17:30	0	0	0	1	0	157	27	0	48	0	60	0	55	132	0	0	479
17:45	0	0	0	1	0	145	16	0	45	3	44	3	45	132	0	0	430
18:00	0	0	0	3	0	146	15	0	34	3	43	0	31	137	1	0	410
18:15	0	0	0	3	0	122	13	0	40	4	41	2	26	113	0	0	359
18:30	0	0	0	0	0	95	17	0	40	4	36	0	27	101	0	0	320
18:45	0	0	0	3	0	128	9	0	40	1	33	1	29	108	1	0	349
Total	0	0	0	72	0	6884	781	0	2361	115	1783	28	1542	5298	2	0	18766

Location: 41st Street NW at NB US 52 Ramp E Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	N/A				41st St NW				E Frontage Rd				41st ST NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	0	2	0	0	3	0	2	0	1	0	0	0	8
6:15	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	4
6:30	0	0	0	1	0	2	0	0	3	0	2	0	1	2	0	0	10
6:45	0	0	0	1	0	2	0	0	1	0	1	0	0	2	0	0	6
7:00	0	0	0	1	0	3	0	0	4	0	3	0	0	3	0	0	13
7:15	0	0	0	0	0	5	0	0	1	0	0	0	0	2	0	0	8
7:30	0	0	0	16	0	1	0	0	2	0	2	0	0	0	0	0	5
7:45	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	2
8:00	0	0	0	0	0	2	0	0	1	0	2	1	1	1	0	0	7
8:15	0	0	0	0	0	2	0	0	1	0	0	0	1	4	0	0	8
8:30	0	0	0	1	0	3	0	0	1	0	1	0	0	2	0	0	7
8:45	0	0	0	2	0	0	0	0	2	0	1	0	1	1	0	0	5
9:00	0	0	0	0	0	1	0	0	2	0	1	0	0	0	0	0	4
9:15	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3
9:30	0	0	0	1	0	3	0	0	1	0	1	0	0	1	0	0	6
9:45	0	0	0	0	0	1	0	0	1	0	2	0	0	1	0	0	5
10:00	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	4
10:15	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
10:30	0	0	0	0	0	4	0	0	0	0	1	0	2	1	0	0	8
10:45	0	0	0	0	0	0	0	0	2	0	1	2	1	1	0	0	5
11:00	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3
11:15	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	0	3
11:30	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	6
11:45	0	0	0	0	0	2	0	0	2	0	2	0	1	3	0	0	10
12:00	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	4
12:15	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	0	5
12:30	0	0	0	0	0	2	0	0	1	0	2	0	0	1	0	0	6
12:45	0	0	0	0	0	1	2	0	0	0	4	1	0	3	0	0	10
13:00	0	0	0	1	0	1	0	0	0	0	3	0	0	1	0	0	5
13:15	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
13:30	0	0	0	0	0	2	1	0	1	0	1	0	1	1	0	0	7
13:45	0	0	0	0	0	0	0	0	1	0	2	0	0	3	0	0	6
14:00	0	0	0	0	0	1	0	0	2	0	1	0	0	2	0	0	6
14:15	0	0	0	1	0	0	0	0	1	0	0	0	1	1	0	0	3
14:30	0	0	0	0	0	2	0	0	1	0	1	0	0	0	0	0	4
14:45	0	0	0	0	0	0	1	0	0	0	1	0	1	1	0	0	4
15:00	0	0	0	0	0	1	0	0	1	0	1	1	0	0	0	0	3
15:15	0	0	0	0	0	0	0	0	3	0	2	0	0	2	0	0	7
15:30	0	0	0	0	0	5	0	0	3	0	1	1	0	0	0	0	9
15:45	0	0	0	0	0	0	0	0	3	0	2	0	1	1	0	0	7
16:00	0	0	0	0	0	3	0	0	3	0	0	1	0	1	0	0	7
16:15	0	0	0	0	0	1	0	0	2	0	2	2	0	2	0	0	7
16:30	0	0	0	0	0	2	0	0	3	0	0	0	0	0	0	0	5
16:45	0	0	0	1	0	0	0	0	4	0	2	1	0	1	0	0	7
17:00	0	0	0	1	0	5	0	0	2	0	0	0	0	0	0	0	7
17:15	0	0	0	2	0	0	0	0	1	0	2	0	1	2	0	0	6
17:30	0	0	0	0	0	2	0	0	3	0	0	2	0	0	0	0	5
17:45	0	0	0	0	0	0	0	0	3	0	2	0	0	2	0	0	7
18:00	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	4
18:15	0	0	0	1	0	1	0	0	2	0	2	0	0	0	0	0	5
18:30	0	0	0	2	0	2	0	0	1	0	0	0	0	0	0	0	3
18:45	0	0	0	0	0	0	0	0	2	0	2	0	0	1	0	0	5
Total	0	0	0	34	0	79	7	0	77	0	62	12	17	56	0	0	298

Location: 41st Street NW at E Frontage Rd
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	E Frontage Rd				41st St NW				No name road				41st St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	1	1	32	0	1	34	2	1	1	0	1	0	10	18	2	0	103
6:15	2	1	27	0	0	41	4	1	1	0	1	1	11	17	1	0	106
6:30	0	2	31	3	0	46	1	0	2	1	0	0	19	29	1	1	132
6:45	1	0	40	1	1	59	8	0	2	1	4	0	22	22	1	0	161
7:00	4	2	34	0	1	66	9	0	3	1	3	0	30	28	4	0	185
7:15	5	0	54	1	3	57	9	0	3	3	2	0	22	32	5	0	195
7:30	4	3	67	19	1	77	3	1	2	2	2	0	29	48	5	0	243
7:45	15	2	61	3	3	92	15	1	2	0	3	0	49	40	7	0	289
8:00	13	5	52	2	4	71	20	1	10	7	3	1	32	41	9	0	267
8:15	2	4	51	1	5	63	9	1	4	3	1	0	29	49	3	0	223
8:30	7	7	37	0	3	76	16	1	9	6	1	1	34	51	9	0	256
8:45	9	7	55	0	1	107	16	2	10	5	5	0	37	83	12	0	347
9:00	5	4	31	0	7	61	10	3	8	8	3	0	27	41	18	0	223
9:15	9	3	31	0	5	57	12	2	19	7	2	0	32	45	19	0	241
9:30	8	8	53	1	5	80	9	0	17	9	7	0	28	53	17	0	294
9:45	9	12	45	1	2	58	8	2	17	7	4	0	33	49	22	0	266
10:00	7	8	39	2	5	69	8	2	24	3	6	0	31	53	22	1	275
10:15	9	5	49	1	4	62	7	1	14	12	3	2	44	58	19	0	286
10:30	7	13	57	1	10	71	12	1	21	5	13	0	43	70	23	1	345
10:45	12	11	43	1	6	65	10	1	24	7	4	2	36	64	22	0	304
11:00	8	9	42	0	4	71	13	0	25	10	5	0	32	58	18	0	295
11:15	12	4	51	4	12	67	11	1	32	6	13	0	47	60	29	0	344
11:30	13	10	60	1	5	74	15	0	29	3	15	0	49	80	26	0	379
11:45	18	12	70	3	3	74	14	3	32	17	12	0	58	81	25	2	416
12:00	18	18	73	0	4	66	12	3	23	10	5	0	63	82	23	0	397
12:15	18	6	73	0	8	76	21	1	25	11	6	2	49	79	24	3	396
12:30	23	11	71	0	7	54	14	0	28	10	7	0	64	81	28	0	398
12:45	15	15	68	0	8	55	16	3	28	14	6	1	68	96	27	0	416
13:00	13	9	54	2	4	66	11	0	32	13	7	0	46	84	33	0	372
13:15	18	12	65	2	3	71	11	0	31	17	5	0	52	71	31	0	387
13:30	14	8	65	0	4	66	15	1	33	11	7	1	51	79	23	0	376
13:45	20	5	65	0	5	93	13	2	33	15	7	0	53	100	24	0	433
14:00	22	7	54	1	8	60	12	1	26	11	5	0	51	83	29	1	368
14:15	15	18	56	2	3	73	12	0	28	19	11	0	47	73	23	0	378
14:30	23	16	73	0	7	67	17	1	34	13	11	1	53	78	25	0	417
14:45	20	8	58	0	13	86	21	0	29	9	9	0	55	97	22	0	427
15:00	15	10	48	0	5	71	7	4	26	14	9	0	46	83	31	0	365
15:15	18	7	60	0	4	80	8	1	20	13	9	2	60	95	32	2	406
15:30	11	12	62	1	4	78	10	1	38	20	6	1	52	97	27	0	417
15:45	22	9	74	1	8	88	16	1	32	16	12	0	68	99	28	0	472
16:00	24	9	71	2	9	84	13	0	27	17	13	0	65	119	20	0	471
16:15	15	15	65	5	3	93	12	2	26	4	12	2	63	102	35	0	445
16:30	28	15	77	3	9	94	6	1	29	12	12	0	77	102	33	0	494
16:45	23	11	85	0	3	89	14	1	37	12	17	1	76	113	21	0	501
17:00	27	18	85	4	12	76	14	1	26	14	11	0	78	128	34	0	523
17:15	26	19	88	5	12	95	17	5	35	20	13	0	67	116	20	0	528
17:30	23	12	65	1	13	86	13	0	34	16	14	2	65	104	18	0	463
17:45	26	14	73	1	7	62	14	2	28	11	11	0	48	114	25	0	433
18:00	30	8	68	5	9	65	12	1	33	17	21	3	57	106	21	0	447
18:15	10	9	45	2	6	70	9	0	18	11	12	1	52	84	16	0	342
18:30	22	14	38	1	5	59	8	1	17	8	8	0	45	71	17	0	312
18:45	5	6	57	2	5	72	13	2	7	15	13	0	46	88	12	0	339
Total	724	454	2948	85	279	3693	602	60	1094	496	392	24	2401	3794	1021	11	17898
Cars+	720	453	2908	57	279	3648	594	43	1092	495	390	14	2342	3737	1019	10	17677
Trucks	4	1	40	28	0	45	8	17	2	1	2	10	59	57	2	1	221
% Trucks	0.6	0.2	1.4	32.9	0.0	1.2	1.3	28.3	0.2	0.2	0.5	41.7	2.5	1.5	0.2	9.1	
	1.1				1.2				0.3				1.6				1.2

Location: 41st Street NW at E Frontage Rd
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	E Frontage Rd				41st St NW				No name road				41st St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	1	1	31	0	1	33	2	1	1	0	1	0	8	18	2	0	99
6:15	2	1	26	0	0	40	4	1	1	0	1	1	11	16	1	0	103
6:30	0	2	30	2	0	45	0	0	2	1	0	0	17	27	1	1	125
6:45	1	0	38	1	1	59	8	0	2	1	4	0	21	20	1	0	156
7:00	4	1	33	0	1	64	9	0	3	1	3	0	26	26	4	0	175
7:15	5	0	52	1	3	54	9	0	3	3	2	0	22	30	5	0	188
7:30	4	3	67	3	1	76	3	1	2	2	2	0	27	48	5	0	240
7:45	15	2	61	2	3	92	15	1	2	0	3	0	49	39	7	0	288
8:00	13	5	51	2	4	70	20	1	10	7	3	0	30	41	8	0	262
8:15	2	4	51	1	5	61	8	1	4	3	1	0	28	45	3	0	215
8:30	7	7	36	0	3	74	15	0	9	6	1	1	33	49	9	0	249
8:45	8	7	55	0	1	107	16	1	10	5	4	0	36	82	12	0	343
9:00	5	4	31	0	7	60	10	3	8	7	3	0	26	41	18	0	220
9:15	9	3	30	0	5	56	11	2	19	7	2	0	32	45	19	0	238
9:30	8	8	51	0	5	79	9	0	17	9	7	0	27	52	17	0	289
9:45	9	12	44	1	2	58	8	2	17	7	4	0	31	48	22	0	262
10:00	7	8	38	2	5	67	8	2	24	3	6	0	30	53	22	1	271
10:15	9	5	49	0	4	62	7	1	14	12	3	2	43	57	19	0	284
10:30	7	13	54	1	10	70	12	0	21	5	13	0	42	69	23	0	339
10:45	11	11	43	0	6	65	10	0	24	7	4	0	35	63	22	0	301
11:00	7	9	42	0	4	71	13	0	25	10	5	0	31	56	18	0	291
11:15	12	4	51	3	12	67	10	1	32	6	13	0	47	59	28	0	341
11:30	13	10	58	1	5	72	15	0	28	3	15	0	48	80	26	0	373
11:45	18	12	69	3	3	73	14	3	32	17	12	0	57	77	25	2	409
12:00	18	18	73	0	4	65	12	2	23	10	5	0	61	82	23	0	394
12:15	18	6	73	0	8	75	21	1	25	11	6	2	49	79	24	3	395
12:30	23	11	70	0	7	53	14	0	28	10	7	0	61	81	28	0	393
12:45	15	15	65	0	8	55	16	0	28	14	6	0	66	91	27	0	406
13:00	13	9	54	1	4	65	11	0	32	13	7	0	45	82	33	0	368
13:15	17	12	64	2	3	70	10	0	31	17	5	0	52	70	31	0	382
13:30	14	8	63	0	4	65	15	0	33	11	7	1	50	78	23	0	371
13:45	20	5	65	0	5	93	13	1	33	15	6	0	51	97	24	0	427
14:00	22	7	54	1	8	59	12	1	26	11	5	0	50	81	29	1	364
14:15	15	18	56	1	3	73	12	0	28	19	11	0	47	72	23	0	377
14:30	23	16	72	0	7	66	16	0	34	13	11	0	52	78	25	0	413
14:45	20	8	58	0	13	86	21	0	28	9	9	0	54	96	22	0	424
15:00	15	10	47	0	5	71	7	2	26	14	9	0	45	83	31	0	363
15:15	18	7	60	0	4	80	8	1	20	13	9	2	58	94	32	2	403
15:30	11	12	61	1	4	74	10	1	38	20	6	0	52	96	27	0	411
15:45	22	9	74	1	8	88	16	0	32	16	12	0	66	98	28	0	469
16:00	24	9	69	2	9	83	13	0	27	17	13	0	65	118	20	0	467
16:15	15	15	64	5	3	93	12	2	26	4	12	0	61	101	35	0	441
16:30	28	15	76	3	9	93	6	1	29	12	12	0	77	102	33	0	492
16:45	23	11	85	0	3	89	14	1	37	12	17	1	74	112	21	0	498
17:00	27	18	84	3	12	72	14	0	26	14	11	0	78	127	34	0	517
17:15	26	19	87	4	12	95	17	4	35	20	13	0	65	114	20	0	523
17:30	23	12	64	1	13	85	13	0	34	16	14	0	65	104	18	0	461
17:45	26	14	73	1	7	62	14	2	28	11	11	0	46	112	25	0	429
18:00	30	8	68	5	9	63	11	1	33	17	21	3	56	106	21	0	443
18:15	10	9	44	1	6	70	9	0	18	11	12	1	50	84	16	0	339
18:30	22	14	37	0	5	58	8	1	17	8	8	0	45	71	17	0	310
18:45	5	6	57	2	5	72	13	1	7	15	13	0	44	87	12	0	336
Total	720	453	2908	57	279	3648	594	43	1092	495	390	14	2342	3737	1019	10	17677

Location: 41st Street NW at E Frontage Rd
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	E Frontage Rd				41st St NW				No name road				41st St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	4
6:15	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	3
6:30	0	0	1	1	0	1	1	0	0	0	0	0	2	2	0	0	7
6:45	0	0	2	0	0	0	0	0	0	0	0	0	1	2	0	0	5
7:00	0	1	1	0	0	2	0	0	0	0	0	0	4	2	0	0	10
7:15	0	0	2	0	0	3	0	0	0	0	0	0	0	2	0	0	7
7:30	0	0	0	16	0	1	0	0	0	0	0	0	2	0	0	0	3
7:45	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00	0	0	1	0	0	1	0	0	0	0	0	1	2	0	1	0	5
8:15	0	0	0	0	0	2	1	0	0	0	0	0	1	4	0	0	8
8:30	0	0	1	0	0	2	1	1	0	0	0	0	1	2	0	0	7
8:45	1	0	0	0	0	0	0	1	0	0	1	0	1	1	0	0	4
9:00	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	3
9:15	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3
9:30	0	0	2	1	0	1	0	0	0	0	0	0	1	1	0	0	5
9:45	0	0	1	0	0	0	0	0	0	0	0	0	2	1	0	0	4
10:00	0	0	1	0	0	2	0	0	0	0	0	0	1	0	0	0	4
10:15	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	2
10:30	0	0	3	0	0	1	0	1	0	0	0	0	1	1	0	1	6
10:45	1	0	0	1	0	0	0	1	0	0	0	2	1	1	0	0	3
11:00	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	4
11:15	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	3
11:30	0	0	2	0	0	2	0	0	1	0	0	0	1	0	0	0	6
11:45	0	0	1	0	0	1	0	0	0	0	0	0	1	4	0	0	7
12:00	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	3
12:15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:30	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	5
12:45	0	0	3	0	0	0	0	3	0	0	0	1	2	5	0	0	10
13:00	0	0	0	1	0	1	0	0	0	0	0	0	1	2	0	0	4
13:15	1	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	5
13:30	0	0	2	0	0	1	0	1	0	0	0	0	1	1	0	0	5
13:45	0	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	6
14:00	0	0	0	0	0	1	0	0	0	0	0	0	1	2	0	0	4
14:15	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
14:30	0	0	1	0	0	1	1	1	0	0	0	1	1	0	0	0	4
14:45	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
15:00	0	0	1	0	0	0	0	2	0	0	0	0	1	0	0	0	2
15:15	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3
15:30	0	0	1	0	0	4	0	0	0	0	0	1	0	1	0	0	6
15:45	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	3
16:00	0	0	2	0	0	1	0	0	0	0	0	0	0	1	0	0	4
16:15	0	0	1	0	0	0	0	0	0	0	0	2	2	1	0	0	4
16:30	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3
17:00	0	0	1	1	0	4	0	1	0	0	0	0	0	1	0	0	6
17:15	0	0	1	1	0	0	0	1	0	0	0	0	2	2	0	0	5
17:30	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4
18:00	0	0	0	0	0	2	1	0	0	0	0	0	1	0	0	0	4
18:15	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0	3
18:30	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	2
18:45	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	3
Total	4	1	40	28	0	45	8	17	2	1	2	10	59	57	2	1	221

Location: Marketplace Dr NW at SE Target Access
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	Marketplace Dr NW				N/A				Marketplace Dr NW				Target access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	9	1	0	0	0	0	0	3	17	0	0	0	0	1	0	31
6:15	0	5	1	0	0	0	0	0	1	16	0	0	0	0	0	0	23
6:30	0	16	1	0	0	0	0	0	9	11	0	0	0	0	0	0	37
6:45	0	11	1	0	0	0	0	0	11	17	0	0	2	0	0	0	42
7:00	0	15	1	0	0	0	0	0	9	19	0	1	0	0	0	0	44
7:15	0	17	2	0	0	0	0	0	11	35	0	0	3	0	2	0	70
7:30	0	16	5	0	0	0	0	0	10	40	0	0	1	0	4	0	76
7:45	0	20	1	0	0	0	0	0	19	52	0	0	0	0	2	0	94
8:00	0	20	3	0	0	0	0	0	12	42	0	0	3	0	2	0	82
8:15	0	18	3	0	0	0	0	0	17	43	0	0	2	0	3	0	86
8:30	0	20	2	0	0	0	0	0	28	40	0	0	3	0	2	1	95
8:45	0	26	2	0	0	0	0	0	24	54	0	0	4	0	1	0	111
9:00	0	20	2	0	0	0	0	0	40	43	0	0	0	0	3	0	108
9:15	0	25	3	0	0	0	0	0	37	50	0	0	11	0	3	0	129
9:30	0	30	3	0	0	0	0	0	32	54	0	0	11	0	11	0	141
9:45	0	31	4	0	0	0	0	0	45	54	0	0	5	0	8	1	147
10:00	0	33	6	0	0	0	0	0	46	48	0	0	6	0	6	1	145
10:15	0	32	8	1	0	0	0	0	51	56	0	0	11	0	17	0	175
10:30	0	36	4	0	0	0	0	0	44	72	0	0	14	0	15	1	185
10:45	0	29	10	1	0	0	0	0	44	71	0	0	8	0	13	0	175
11:00	0	39	11	0	0	0	0	0	49	64	0	0	11	0	12	1	186
11:15	0	38	14	0	0	0	0	0	51	72	0	0	16	0	19	1	210
11:30	0	51	13	0	0	0	0	0	52	87	0	0	16	0	22	0	241
11:45	0	58	9	0	0	0	0	0	63	124	0	0	16	0	12	1	282
12:00	0	54	6	0	0	0	0	0	56	102	0	0	25	0	9	1	252
12:15	0	57	11	0	0	0	0	0	54	123	0	0	15	0	11	0	271
12:30	0	57	7	0	0	0	0	0	55	108	0	0	20	0	12	1	259
12:45	0	48	8	0	0	0	0	0	61	109	0	0	15	0	18	0	259
13:00	0	59	8	0	0	0	0	0	59	93	0	0	17	0	7	2	243
13:15	0	58	5	0	0	0	0	2	38	93	0	0	11	0	17	0	222
13:30	0	54	9	0	0	0	0	0	55	108	0	0	12	0	12	0	250
13:45	0	59	6	0	0	0	0	0	64	104	0	3	16	0	18	0	267
14:00	0	41	6	0	0	0	0	0	62	86	0	0	14	0	14	1	223
14:15	0	40	9	0	0	0	0	0	52	87	0	0	21	0	15	0	224
14:30	0	55	5	0	0	0	0	0	65	76	0	0	13	0	17	0	231
14:45	0	43	10	0	0	0	0	0	48	92	0	0	16	0	17	0	226
15:00	0	45	6	0	0	0	0	0	64	91	0	0	10	0	13	2	229
15:15	0	40	9	0	0	0	0	0	69	68	0	0	13	0	15	0	214
15:30	0	45	4	0	0	0	0	0	51	88	0	0	16	0	8	5	212
15:45	0	51	3	0	0	0	0	0	62	103	0	0	15	0	10	0	244
16:00	0	53	3	0	0	0	0	0	65	92	0	0	10	0	14	1	237
16:15	0	57	8	0	0	0	0	0	77	109	0	2	15	0	20	0	286
16:30	0	56	10	0	0	0	0	0	68	109	0	1	8	0	18	0	269
16:45	0	68	11	0	0	0	0	0	56	112	0	0	15	0	15	1	277
17:00	0	63	10	0	0	0	0	0	63	103	0	0	16	0	16	1	271
17:15	0	57	6	0	0	0	0	0	73	91	0	3	12	0	13	1	252
17:30	0	56	7	0	0	0	0	0	62	93	0	0	14	0	10	0	242
17:45	0	43	5	0	0	0	0	0	63	74	0	0	18	0	12	0	215
18:00	0	55	5	0	0	0	0	0	61	100	0	0	25	0	12	0	258
18:15	0	51	8	0	0	0	0	0	37	82	0	1	15	0	6	3	199
18:30	0	48	11	0	0	0	0	0	50	93	0	0	13	0	12	2	227
18:45	0	50	8	0	0	0	0	0	33	83	0	0	17	0	13	1	204
Total	0	2078	314	2	0	0	0	2	2331	3853	0	11	570	0	532	29	9678
Cars+	0	2061	295	2	0	0	0	0	2323	3818	0	8	564	0	531	17	9592
Trucks	0	17	19	0	0	0	0	2	8	35	0	3	6	0	1	12	86
% Trucks	0.0	0.8	6.1	0.0	0.0	0.0	0.0	100.0	0.3	0.9	0.0	27.3	1.1	0.0	0.2	41.4	
	1.5				0.0				0.7				0.6				0.9

Location: Marketplace Dr NW at SE Target Access
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	Marketplace Dr NW				N/A				Marketplace Dr NW				Target access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	8	0	0	0	0	0	0	3	17	0	0	0	0	1	0	29
6:15	0	4	1	0	0	0	0	0	1	14	0	0	0	0	0	0	20
6:30	0	15	0	0	0	0	0	0	8	11	0	0	0	0	0	0	34
6:45	0	11	1	0	0	0	0	0	10	16	0	0	2	0	0	0	40
7:00	0	14	0	0	0	0	0	0	9	19	0	0	0	0	0	0	42
7:15	0	16	2	0	0	0	0	0	11	34	0	0	3	0	2	0	68
7:30	0	16	3	0	0	0	0	0	10	39	0	0	1	0	4	0	73
7:45	0	20	1	0	0	0	0	0	19	52	0	0	0	0	2	0	94
8:00	0	20	2	0	0	0	0	0	12	42	0	0	3	0	2	0	81
8:15	0	17	3	0	0	0	0	0	17	42	0	0	1	0	3	0	83
8:30	0	20	1	0	0	0	0	0	28	40	0	0	3	0	2	0	94
8:45	0	26	2	0	0	0	0	0	24	51	0	0	4	0	1	0	108
9:00	0	19	2	0	0	0	0	0	40	43	0	0	0	0	3	0	107
9:15	0	25	3	0	0	0	0	0	37	50	0	0	11	0	3	0	129
9:30	0	30	2	0	0	0	0	0	32	52	0	0	11	0	11	0	138
9:45	0	30	4	0	0	0	0	0	44	52	0	0	4	0	8	1	142
10:00	0	33	6	0	0	0	0	0	46	47	0	0	6	0	6	1	144
10:15	0	31	8	1	0	0	0	0	50	55	0	0	11	0	17	0	172
10:30	0	36	4	0	0	0	0	0	44	72	0	0	12	0	15	0	183
10:45	0	29	9	1	0	0	0	0	44	71	0	0	8	0	12	0	173
11:00	0	39	11	0	0	0	0	0	48	60	0	0	11	0	12	0	181
11:15	0	38	14	0	0	0	0	0	51	72	0	0	16	0	19	1	210
11:30	0	51	13	0	0	0	0	0	52	87	0	0	16	0	22	0	241
11:45	0	57	8	0	0	0	0	0	63	121	0	0	16	0	12	0	277
12:00	0	54	6	0	0	0	0	0	56	102	0	0	25	0	9	1	252
12:15	0	55	11	0	0	0	0	0	54	122	0	0	15	0	11	0	268
12:30	0	56	6	0	0	0	0	0	55	108	0	0	20	0	12	1	257
12:45	0	48	8	0	0	0	0	0	61	109	0	0	15	0	18	0	259
13:00	0	59	8	0	0	0	0	0	59	91	0	0	16	0	7	0	240
13:15	0	57	5	0	0	0	0	0	38	92	0	0	11	0	17	0	220
13:30	0	54	9	0	0	0	0	0	55	108	0	0	12	0	12	0	250
13:45	0	58	5	0	0	0	0	0	63	102	0	3	16	0	18	0	262
14:00	0	41	6	0	0	0	0	0	62	86	0	0	14	0	14	1	223
14:15	0	40	9	0	0	0	0	0	52	86	0	0	21	0	15	0	223
14:30	0	55	5	0	0	0	0	0	64	76	0	0	13	0	17	0	230
14:45	0	42	9	0	0	0	0	0	48	92	0	0	15	0	17	0	223
15:00	0	45	6	0	0	0	0	0	64	91	0	0	10	0	13	1	229
15:15	0	40	9	0	0	0	0	0	68	68	0	0	13	0	15	0	213
15:30	0	45	3	0	0	0	0	0	51	87	0	0	16	0	8	2	210
15:45	0	51	3	0	0	0	0	0	62	101	0	0	15	0	10	0	242
16:00	0	53	3	0	0	0	0	0	65	92	0	0	10	0	14	0	237
16:15	0	57	7	0	0	0	0	0	77	109	0	1	15	0	20	0	285
16:30	0	56	9	0	0	0	0	0	68	108	0	1	8	0	18	0	267
16:45	0	68	11	0	0	0	0	0	56	112	0	0	15	0	15	1	277
17:00	0	62	9	0	0	0	0	0	63	103	0	0	16	0	16	0	269
17:15	0	57	6	0	0	0	0	0	73	91	0	2	12	0	13	1	252
17:30	0	56	6	0	0	0	0	0	62	93	0	0	14	0	10	0	241
17:45	0	43	5	0	0	0	0	0	63	73	0	0	18	0	12	0	214
18:00	0	55	5	0	0	0	0	0	61	100	0	0	25	0	12	0	258
18:15	0	51	8	0	0	0	0	0	37	82	0	1	15	0	6	3	199
18:30	0	48	10	0	0	0	0	0	50	92	0	0	13	0	12	2	225
18:45	0	50	8	0	0	0	0	0	33	83	0	0	17	0	13	1	204
Total	0	2061	295	2	0	0	0	0	2323	3818	0	8	564	0	531	17	9592

Location: Marketplace Dr NW at SE Target Access
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	Marketplace Dr NW				N/A				Marketplace Dr NW				Target access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
6:30	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
6:45	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
7:00	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
7:15	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:30	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	3
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3
8:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:45	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
9:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3
9:45	0	1	0	0	0	0	0	0	1	2	0	0	1	0	0	0	5
10:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
10:15	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3
10:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	2
10:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
11:00	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	1	5
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	1	1	0	0	0	0	0	0	3	0	0	0	0	0	1	5
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
12:30	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	2	3
13:15	0	1	0	0	0	0	0	2	0	1	0	0	0	0	0	0	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	1	1	0	0	0	0	0	1	2	0	0	0	0	0	0	5
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
14:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
14:45	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
15:30	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	3	2
15:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:15	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
16:30	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
17:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
17:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	17	19	0	0	0	0	2	8	35	0	3	6	0	1	12	86

Location: Marketplace Dr NW at slip ramp from 37th St NW
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	Marketplace Dr NW				Slip Ramp				Marketplace Dr NW				Potbelly store access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	8	0	2	0	0	8	2	0	11	0	1	0	0	0	2	27
6:15	0	3	1	1	1	0	6	0	0	11	0	0	0	0	0	0	22
6:30	0	9	1	0	0	0	15	0	0	5	0	0	0	0	1	0	31
6:45	0	10	0	0	0	0	29	0	0	6	0	0	0	0	0	0	45
7:00	0	14	0	0	1	1	21	0	0	9	0	0	0	0	1	0	47
7:15	0	14	0	0	1	1	27	0	0	14	0	0	0	0	1	0	58
7:30	0	14	0	0	6	0	37	0	0	11	0	0	0	0	0	1	68
7:45	0	17	0	0	2	0	48	0	2	32	0	0	0	0	0	0	101
8:00	0	21	0	0	1	0	32	0	0	16	0	0	0	0	1	0	71
8:15	0	16	1	0	2	2	35	0	0	25	0	0	0	0	1	0	82
8:30	0	20	0	0	4	0	50	0	1	24	0	0	1	0	3	1	103
8:45	0	22	0	2	1	2	55	0	1	20	0	0	0	0	1	0	102
9:00	0	19	1	1	4	1	69	0	1	15	0	0	0	0	0	0	110
9:15	0	21	0	0	6	1	60	0	1	29	0	0	0	0	1	0	119
9:30	0	31	0	0	3	1	69	0	1	13	0	0	0	0	3	1	121
9:45	0	31	1	0	3	2	71	0	0	35	0	0	0	0	2	1	145
10:00	0	25	0	0	4	2	69	0	1	24	0	0	0	0	3	1	128
10:15	0	41	4	0	3	1	68	0	0	32	0	0	1	0	1	0	151
10:30	0	40	2	1	9	1	73	0	0	29	0	0	2	0	1	1	157
10:45	0	27	0	0	7	0	83	0	0	22	0	0	0	0	1	0	140
11:00	0	38	2	2	10	1	79	0	0	31	0	0	1	0	6	2	168
11:15	0	41	2	1	4	4	82	0	0	35	0	0	0	0	5	1	173
11:30	0	49	0	1	4	1	97	0	2	37	0	0	1	0	6	1	197
11:45	0	49	0	0	4	5	121	0	0	42	0	0	0	0	0	1	221
12:00	0	41	3	0	2	2	100	1	1	45	0	0	2	0	7	0	203
12:15	0	44	0	1	9	3	123	0	0	38	0	0	1	0	3	1	221
12:30	0	58	0	0	2	1	100	0	0	39	0	0	0	0	2	1	202
12:45	0	54	1	0	5	2	102	0	2	49	0	0	0	0	4	0	219
13:00	0	49	0	0	6	1	91	0	0	50	0	0	1	0	2	1	200
13:15	0	60	0	0	5	1	85	0	0	42	0	0	0	0	2	0	195
13:30	0	59	0	0	5	2	109	0	1	39	0	0	0	0	0	0	215
13:45	0	65	0	0	5	2	102	0	1	50	0	0	0	0	1	1	226
14:00	0	48	1	1	3	0	98	0	0	39	0	0	1	0	2	1	192
14:15	0	49	0	0	5	0	88	1	0	34	0	0	1	0	3	1	180
14:30	0	67	0	0	8	2	93	0	1	35	0	0	1	0	4	0	211
14:45	0	50	0	0	6	2	87	0	2	41	0	0	0	0	5	1	193
15:00	0	55	0	0	5	1	111	0	1	33	0	0	2	0	2	1	210
15:15	0	46	0	1	4	2	96	0	0	32	0	0	0	0	1	2	181
15:30	0	51	1	0	8	1	89	0	0	33	0	0	1	0	1	1	185
15:45	0	45	0	0	7	2	106	0	0	52	0	0	0	0	2	0	214
16:00	0	54	0	2	6	3	98	0	0	42	0	0	0	0	3	2	206
16:15	0	57	0	1	4	3	127	0	2	50	0	0	1	0	0	0	244
16:30	0	58	1	0	8	0	106	1	0	55	0	0	0	0	2	0	230
16:45	0	64	0	2	3	2	98	0	0	56	0	0	0	0	1	0	224
17:00	0	69	1	0	7	1	82	0	0	69	0	0	0	0	5	1	234
17:15	0	60	0	0	4	0	108	0	0	54	0	0	1	0	0	0	227
17:30	0	52	0	0	3	1	96	0	1	38	0	0	0	0	1	0	192
17:45	0	43	1	0	2	2	96	0	0	33	0	0	0	0	0	0	177
18:00	0	46	1	0	5	2	92	0	0	42	0	0	0	0	4	1	192
18:15	0	41	1	0	8	3	67	0	0	33	0	0	2	0	2	4	157
18:30	0	47	2	1	5	3	79	0	0	35	0	0	2	0	2	0	175
18:45	0	50	1	0	7	4	83	0	1	25	0	0	0	0	2	2	173
Total	0	2062	29	20	227	74	4016	5	23	1711	0	1	22	0	101	34	8265
Cars+	0	2049	25	14	225	73	3990	2	23	1701	0	0	19	0	97	17	8202
Trucks	0	13	4	6	2	1	26	3	0	10	0	1	3	0	4	17	63
% Trucks	0.0	0.6	13.8	30.0	0.9	1.4	0.6	60.0	0.0	0.6	0.0	100.0	13.6	0.0	4.0	50.0	
	0.8				0.7				0.6				5.7				0.8

Location: Marketplace Dr NW at slip ramp from 37th St NW
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	Marketplace Dr NW				Slip Ramp				Marketplace Dr NW				Potbelly store access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	8	0	0	0	0	8	0	0	11	0	0	0	0	0	0	27
6:15	0	3	0	0	1	0	6	0	0	10	0	0	0	0	0	0	20
6:30	0	9	0	0	0	0	14	0	0	5	0	0	0	0	1	0	29
6:45	0	10	0	0	0	0	27	0	0	6	0	0	0	0	0	0	43
7:00	0	13	0	0	1	1	21	0	0	8	0	0	0	0	1	0	45
7:15	0	13	0	0	1	1	27	0	0	14	0	0	0	0	0	0	56
7:30	0	14	0	0	6	0	36	0	0	11	0	0	0	0	0	0	67
7:45	0	17	0	0	2	0	48	0	2	32	0	0	0	0	0	0	101
8:00	0	21	0	0	1	0	32	0	0	16	0	0	0	0	1	0	71
8:15	0	15	1	0	2	1	35	0	0	24	0	0	0	0	1	0	79
8:30	0	20	0	0	4	0	50	0	1	24	0	0	0	0	2	0	101
8:45	0	22	0	2	1	2	53	0	1	20	0	0	0	0	1	0	100
9:00	0	19	0	1	4	1	68	0	1	15	0	0	0	0	0	0	108
9:15	0	21	0	0	6	1	59	0	1	29	0	0	0	0	0	0	117
9:30	0	31	0	0	3	1	68	0	1	13	0	0	0	0	3	0	120
9:45	0	31	0	0	2	2	70	0	0	34	0	0	0	0	2	1	141
10:00	0	25	0	0	4	2	68	0	1	24	0	0	0	0	3	1	127
10:15	0	40	4	0	3	1	66	0	0	32	0	0	0	0	1	0	147
10:30	0	40	2	1	9	1	73	0	0	29	0	0	2	0	1	0	157
10:45	0	26	0	0	7	0	83	0	0	22	0	0	0	0	1	0	139
11:00	0	38	2	1	10	1	78	0	0	30	0	0	0	0	6	1	165
11:15	0	41	2	1	4	4	82	0	0	35	0	0	0	0	5	1	173
11:30	0	49	0	1	4	1	97	0	2	37	0	0	1	0	6	1	197
11:45	0	48	0	0	4	5	119	0	0	42	0	0	0	0	0	0	218
12:00	0	41	3	0	2	2	100	1	1	45	0	0	2	0	7	0	203
12:15	0	42	0	0	9	3	123	0	0	37	0	0	1	0	3	0	218
12:30	0	57	0	0	2	1	100	0	0	39	0	0	0	0	2	0	201
12:45	0	54	1	0	5	2	102	0	2	49	0	0	0	0	4	0	219
13:00	0	49	0	0	6	1	89	0	0	50	0	0	1	0	2	0	198
13:15	0	59	0	0	5	1	84	0	0	42	0	0	0	0	2	0	193
13:30	0	59	0	0	5	2	109	0	1	39	0	0	0	0	0	0	215
13:45	0	64	0	0	5	2	100	0	1	49	0	0	0	0	1	1	222
14:00	0	48	1	1	3	0	98	0	0	39	0	0	1	0	2	1	192
14:15	0	49	0	0	5	0	87	1	0	34	0	0	1	0	3	1	179
14:30	0	67	0	0	8	2	92	0	1	35	0	0	1	0	3	0	209
14:45	0	49	0	0	6	2	87	0	2	41	0	0	0	0	5	0	192
15:00	0	55	0	0	5	1	111	0	1	33	0	0	2	0	2	1	210
15:15	0	46	0	0	4	2	95	0	0	32	0	0	0	0	1	2	180
15:30	0	51	1	0	8	1	88	0	0	33	0	0	1	0	1	0	184
15:45	0	45	0	0	6	2	105	0	0	51	0	0	0	0	2	0	211
16:00	0	54	0	2	6	3	98	0	0	42	0	0	0	0	3	2	206
16:15	0	57	0	1	4	3	127	0	2	50	0	0	1	0	0	0	244
16:30	0	58	1	0	8	0	106	0	0	54	0	0	0	0	2	0	229
16:45	0	64	0	2	3	2	98	0	0	56	0	0	0	0	1	0	224
17:00	0	68	1	0	7	1	82	0	0	69	0	0	0	0	5	0	233
17:15	0	60	0	0	4	0	108	0	0	54	0	0	1	0	0	0	227
17:30	0	52	0	0	3	1	96	0	1	38	0	0	0	0	1	0	192
17:45	0	43	1	0	2	2	96	0	0	32	0	0	0	0	0	0	176
18:00	0	46	1	0	5	2	92	0	0	42	0	0	0	0	4	0	192
18:15	0	41	1	0	8	3	67	0	0	33	0	0	2	0	2	3	157
18:30	0	47	2	1	5	3	79	0	0	35	0	0	2	0	2	0	175
18:45	0	50	1	0	7	4	83	0	1	25	0	0	0	0	2	1	173
Total	0	2049	25	14	225	73	3990	2	23	1701	0	0	19	0	97	17	8202

Location: Marketplace Dr NW at slip ramp from 37th St NW
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	Marketplace Dr NW				Slip Ramp				Marketplace Dr NW				Potbelly store access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	2	0
6:15	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	2
6:30	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
6:45	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
7:00	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
7:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
8:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2
8:45	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
9:00	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
9:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
9:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
9:45	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	4
10:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
10:15	0	1	0	0	0	0	2	0	0	0	0	0	1	0	0	0	4
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	3
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	1	3
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	1	3
12:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	2
13:15	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45	0	1	0	0	0	0	2	0	0	1	0	0	0	0	0	0	4
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
14:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
14:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
15:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
15:45	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	13	4	6	2	1	26	3	0	10	0	1	3	0	4	17	63

Location: West Circle Dr NW at Valleyhigh Dr NW looking N
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	West Circle Dr NW				Valleyhigh Dr NW				West Circle Dr NW				Valleyhigh Dr NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	12	38	13	0	5	12	6	1	7	34	11	1	4	15	27	0	184
6:15	20	67	19	0	7	13	12	0	18	37	5	0	14	26	33	0	271
6:30	25	58	20	0	4	10	14	0	13	41	8	0	15	24	46	0	278
6:45	35	68	27	0	9	21	10	0	20	52	16	0	10	40	36	0	344
7:00	35	79	16	0	8	18	19	0	16	51	17	0	12	30	34	0	335
7:15	50	110	27	0	7	16	16	0	26	87	32	2	20	42	52	0	485
7:30	52	122	30	0	11	25	25	0	12	93	18	0	21	43	36	0	488
7:45	40	102	30	0	12	40	29	1	40	121	17	1	36	70	47	0	584
8:00	36	118	21	0	10	22	21	0	28	104	21	1	14	41	37	0	473
8:15	31	100	19	0	9	21	28	1	16	111	19	0	33	37	47	2	471
8:30	26	109	25	0	7	16	27	4	25	100	16	5	25	31	44	0	451
8:45	19	99	19	0	8	23	26	0	20	127	17	0	24	23	29	0	434
9:00	20	91	12	0	9	12	19	1	17	109	17	0	20	34	45	0	405
9:15	14	109	16	0	8	29	19	0	29	110	9	0	18	17	41	0	419
9:30	20	142	15	0	14	16	21	0	15	113	10	0	16	27	42	1	451
9:45	31	151	17	0	6	20	31	0	20	137	11	0	21	25	42	0	512
10:00	15	148	12	2	9	16	19	0	27	142	5	0	19	17	37	0	466
10:15	18	149	13	0	6	18	32	0	27	123	14	0	22	19	41	0	482
10:30	17	116	25	0	5	18	23	0	24	156	24	0	18	17	34	0	477
10:45	20	154	15	0	10	17	26	0	35	156	16	5	23	13	47	0	532
11:00	25	158	19	0	10	19	38	0	28	179	15	0	23	17	39	0	570
11:15	26	130	18	0	15	33	31	0	26	179	27	0	37	26	40	0	588
11:30	29	156	13	0	5	22	42	0	37	175	19	0	23	25	39	0	585
11:45	26	159	19	0	13	22	32	0	34	192	19	0	32	33	58	0	639
12:00	20	151	23	0	13	32	46	0	41	192	23	2	33	24	55	0	653
12:15	31	179	12	0	14	31	29	0	44	171	21	1	24	32	43	1	631
12:30	34	160	25	0	15	22	34	0	40	178	20	1	29	18	50	0	625
12:45	33	166	28	0	11	28	39	0	37	178	19	0	29	35	54	0	657
13:00	28	160	17	0	17	23	39	0	46	187	20	0	28	26	50	0	641
13:15	25	142	17	0	11	35	28	0	31	160	23	0	14	28	61	0	575
13:30	33	157	19	0	15	28	35	0	40	170	16	0	17	23	38	0	591
13:45	38	163	23	0	12	25	35	0	31	180	20	0	20	30	34	0	611
14:00	38	133	15	0	8	22	36	0	34	170	25	1	18	24	36	0	559
14:15	24	165	23	0	21	44	40	0	31	173	19	1	22	20	23	0	605
14:30	25	138	27	0	17	38	38	1	33	152	8	1	24	24	33	0	557
14:45	32	141	24	0	12	39	33	0	27	184	22	0	17	25	37	0	593
15:00	29	135	25	0	18	30	43	0	34	171	14	1	37	22	37	0	595
15:15	35	146	29	0	15	33	50	0	35	151	23	0	31	26	46	0	620
15:30	27	157	19	0	13	32	47	0	39	190	22	0	47	24	42	0	659
15:45	38	146	27	0	14	37	47	0	43	192	18	1	24	24	49	0	659
16:00	31	154	23	0	22	52	63	0	28	188	16	1	47	30	41	0	695
16:15	37	149	36	0	18	50	66	0	42	177	14	0	38	39	62	0	728
16:30	27	169	32	0	28	49	48	1	42	201	18	0	42	35	51	0	742
16:45	27	163	31	0	16	48	55	0	63	215	18	0	37	35	49	0	757
17:00	25	164	32	0	17	39	58	0	58	224	16	0	30	23	52	0	738
17:15	32	171	28	0	22	51	55	0	51	187	13	0	37	25	53	0	725
17:30	19	141	32	0	11	26	52	0	47	191	8	2	34	29	46	0	636
17:45	18	141	19	0	11	27	37	0	34	191	9	1	20	18	52	3	577
18:00	8	138	22	0	12	27	43	0	36	145	5	0	23	13	45	0	517
18:15	17	114	15	0	6	27	15	0	29	147	3	0	19	12	38	0	442
18:30	17	114	22	0	2	10	18	0	30	149	6	0	21	16	28	0	433
18:45	18	95	12	0	2	12	23	0	37	132	3	0	22	12	30	0	398
Total	1408	6885	1117	2	600	1396	1718	10	1643	7675	825	28	1284	1384	2208	7	28143
Cars+	1354	6795	1097	0	554	1337	1667	4	1589	7577	748	12	1273	1328	2138	4	27457
Trucks	54	90	20	2	46	59	51	6	54	98	77	16	11	56	70	3	686
% Trucks	3.8	1.3	1.8	100.0	7.7	4.2	3.0	60.0	3.3	1.3	9.3	57.1	0.9	4.0	3.2	42.9	
	1.7				4.2				2.3				2.8				2.4

Location: West Circle Dr NW at Valleyhigh Dr NW looking N
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	West Circle Dr NW				Valleyhigh Dr NW				West Circle Dr NW				Valleyhigh Dr NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	11	38	13	0	4	12	6	1	7	32	10	1	4	14	27	0	178
6:15	20	65	19	0	6	12	10	0	18	36	5	0	14	26	33	0	264
6:30	24	56	20	0	3	9	13	0	9	39	7	0	15	24	46	0	265
6:45	35	68	27	0	6	20	8	0	20	51	16	0	10	40	35	0	336
7:00	33	79	16	0	8	16	18	0	15	47	15	0	12	30	34	0	323
7:15	49	106	26	0	6	15	15	0	25	84	31	1	20	42	50	0	469
7:30	49	121	29	0	11	21	25	0	12	90	18	0	21	41	34	0	472
7:45	40	101	28	0	9	37	25	0	39	119	16	0	36	70	46	0	566
8:00	36	115	20	0	9	22	20	0	28	103	20	0	14	41	35	0	463
8:15	29	96	19	0	8	17	28	1	16	111	16	0	33	34	46	2	453
8:30	26	106	24	0	7	14	26	0	23	97	12	1	25	31	42	0	433
8:45	19	99	19	0	7	22	26	0	19	121	16	0	24	21	29	0	422
9:00	20	89	12	0	7	10	17	0	17	108	15	0	20	28	43	0	386
9:15	12	107	16	0	7	27	18	0	27	107	8	0	16	17	40	0	402
9:30	18	137	15	0	12	15	18	0	14	110	8	0	16	23	41	1	427
9:45	30	151	16	0	5	19	31	0	19	136	9	0	21	23	40	0	500
10:00	14	145	10	0	9	14	19	0	27	139	5	0	19	17	35	0	453
10:15	17	145	13	0	4	16	30	0	25	122	11	0	21	18	39	0	461
10:30	16	114	24	0	4	16	22	0	21	153	21	0	18	16	33	0	458
10:45	20	152	14	0	10	15	26	0	35	152	16	5	23	12	46	0	521
11:00	23	157	18	0	9	18	37	0	27	174	15	0	23	15	35	0	551
11:15	25	129	18	0	14	33	29	0	26	176	21	0	35	24	38	0	568
11:30	26	154	13	0	5	20	40	0	34	172	15	0	23	23	37	0	562
11:45	25	155	19	0	12	21	30	0	33	191	18	0	32	33	58	0	627
12:00	20	151	23	0	12	32	45	0	39	187	20	2	32	23	54	0	638
12:15	31	175	12	0	13	29	28	0	44	170	19	0	24	32	39	1	616
12:30	30	155	23	0	14	21	34	0	37	176	19	0	29	17	48	0	603
12:45	33	166	28	0	8	28	36	0	36	174	17	0	29	33	53	0	641
13:00	26	159	16	0	15	22	36	0	46	184	20	0	27	26	47	0	624
13:15	22	140	16	0	11	35	26	0	30	159	20	0	14	27	58	0	558
13:30	30	155	19	0	12	27	34	0	38	166	14	0	17	20	36	0	568
13:45	38	161	23	0	12	24	34	0	29	180	19	0	19	28	33	0	600
14:00	37	133	15	0	7	19	36	0	33	167	25	0	18	24	35	0	549
14:15	23	162	23	0	20	44	39	0	29	172	16	0	22	17	23	0	590
14:30	22	137	27	0	16	36	38	1	30	152	8	1	24	23	33	0	546
14:45	31	139	23	0	11	35	32	0	23	183	19	0	17	23	35	0	571
15:00	27	134	25	0	18	30	42	0	31	169	12	0	37	19	37	0	581
15:15	33	146	28	0	12	32	50	0	35	149	21	0	31	26	43	0	606
15:30	26	150	18	0	13	32	46	0	39	189	20	0	47	23	40	0	643
15:45	36	145	27	0	14	37	45	0	40	190	18	0	24	21	47	0	644
16:00	31	151	23	0	22	50	63	0	27	188	14	1	46	29	40	0	684
16:15	36	149	35	0	17	49	64	0	42	175	14	0	36	37	59	0	713
16:30	26	168	32	0	28	49	48	1	42	200	18	0	42	34	48	0	735
16:45	27	163	31	0	16	47	55	0	61	215	16	0	37	35	49	0	752
17:00	25	163	32	0	17	39	58	0	58	223	15	0	30	23	52	0	735
17:15	31	170	28	0	22	50	55	0	51	186	12	0	37	25	50	0	717
17:30	19	140	32	0	10	26	51	0	47	191	7	0	34	29	46	0	632
17:45	17	141	19	0	11	27	37	0	34	191	7	0	20	18	52	0	574
18:00	8	136	22	0	12	27	43	0	36	143	3	0	23	13	44	0	510
18:15	17	114	15	0	5	27	15	0	29	147	3	0	19	12	38	0	441
18:30	17	112	22	0	2	10	18	0	30	149	5	0	21	16	27	0	429
18:45	18	95	12	0	2	12	22	0	37	132	3	0	22	12	30	0	397
Total	1354	6795	1097	0	554	1337	1667	4	1589	7577	748	12	1273	1328	2138	4	27457

Location: West Circle Dr NW at Valleyhigh Dr NW looking N
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	West Circle Dr NW				Valleyhigh Dr NW				West Circle Dr NW				Valleyhigh Dr NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	1	0	0	0	1	0	0	0	0	2	1	0	0	1	0	0	6
6:15	0	2	0	0	1	1	2	0	0	1	0	0	0	0	0	0	7
6:30	1	2	0	0	1	1	1	0	4	2	1	0	0	0	0	0	13
6:45	0	0	0	0	3	1	2	0	0	1	0	0	0	0	1	0	8
7:00	2	0	0	0	0	2	1	0	1	4	2	0	0	0	0	0	12
7:15	1	4	1	0	1	1	1	0	1	3	1	1	0	0	2	0	16
7:30	3	1	1	0	0	4	0	0	0	3	0	0	0	2	2	0	16
7:45	0	1	2	0	3	3	4	1	1	2	1	1	0	0	1	0	18
8:00	0	3	1	0	1	0	1	0	0	1	1	1	0	0	2	0	10
8:15	2	4	0	0	1	4	0	0	0	0	3	0	0	3	1	0	18
8:30	0	3	1	0	0	2	1	4	2	3	4	4	0	0	2	0	18
8:45	0	0	0	0	1	1	0	0	1	6	1	0	0	2	0	0	12
9:00	0	2	0	0	2	2	2	1	0	1	2	0	0	6	2	0	19
9:15	2	2	0	0	1	2	1	0	2	3	1	0	2	0	1	0	17
9:30	2	5	0	0	2	1	3	0	1	3	2	0	0	4	1	0	24
9:45	1	0	1	0	1	1	0	0	1	1	2	0	0	2	2	0	12
10:00	1	3	2	2	0	2	0	0	0	3	0	0	0	0	2	0	13
10:15	1	4	0	0	2	2	2	0	2	1	3	0	1	1	2	0	21
10:30	1	2	1	0	1	2	1	0	3	3	3	0	0	1	1	0	19
10:45	0	2	1	0	0	2	0	0	0	4	0	0	0	1	1	0	11
11:00	2	1	1	0	1	1	1	0	1	5	0	0	0	2	4	0	19
11:15	1	1	0	0	1	0	2	0	0	3	6	0	2	2	2	0	20
11:30	3	2	0	0	0	2	2	0	3	3	4	0	0	2	2	0	23
11:45	1	4	0	0	1	1	2	0	1	1	1	0	0	0	0	0	12
12:00	0	0	0	0	1	0	1	0	2	5	3	0	1	1	1	0	15
12:15	0	4	0	0	1	2	1	0	0	1	2	1	0	0	4	0	15
12:30	4	5	2	0	1	1	0	0	3	2	1	1	0	1	2	0	22
12:45	0	0	0	0	3	0	3	0	1	4	2	0	0	2	1	0	16
13:00	2	1	1	0	2	1	3	0	0	3	0	0	1	0	3	0	17
13:15	3	2	1	0	0	0	2	0	1	1	3	0	0	1	3	0	17
13:30	3	2	0	0	3	1	1	0	2	4	2	0	0	3	2	0	23
13:45	0	2	0	0	0	1	1	0	2	0	1	0	1	2	1	0	11
14:00	1	0	0	0	1	3	0	0	1	3	0	1	0	0	1	0	10
14:15	1	3	0	0	1	0	1	0	2	1	3	1	0	3	0	0	15
14:30	3	1	0	0	1	2	0	0	3	0	0	0	0	1	0	0	11
14:45	1	2	1	0	1	4	1	0	4	1	3	0	0	2	2	0	22
15:00	2	1	0	0	0	0	1	0	3	2	2	1	0	3	0	0	14
15:15	2	0	1	0	3	1	0	0	0	2	2	0	0	0	3	0	14
15:30	1	7	1	0	0	0	1	0	0	1	2	0	0	1	2	0	16
15:45	2	1	0	0	0	0	2	0	3	2	0	1	0	3	2	0	15
16:00	0	3	0	0	0	2	0	0	1	0	2	0	1	1	1	0	11
16:15	1	0	1	0	1	1	2	0	0	2	0	0	2	2	3	0	15
16:30	1	1	0	0	0	0	0	0	0	1	0	0	0	1	3	0	7
16:45	0	0	0	0	0	1	0	0	2	0	2	0	0	0	0	0	5
17:00	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
17:15	1	1	0	0	0	1	0	0	0	1	1	0	0	0	3	0	8
17:30	0	1	0	0	1	0	1	0	0	0	1	2	0	0	0	0	4
17:45	1	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
18:00	0	2	0	0	0	0	0	0	0	2	2	0	0	0	1	0	7
18:15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18:30	0	2	0	0	0	0	0	0	0	0	1	0	0	0	1	0	4
18:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	54	90	20	2	46	59	51	6	54	98	77	16	11	56	70	3	686

Location: Valleyhigh Drive NW at Instrument Drive NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	Valleyhigh Dr NW				N/A				Valleyhigh Dr NW				Instrument Drive NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	28	0	0	0	0	0	0	0	25	0	0	0	0	0	0	53
6:15	0	37	0	0	0	0	0	0	3	35	0	0	0	0	0	1	75
6:30	0	38	0	0	0	0	0	0	0	26	0	0	0	0	0	1	64
6:45	0	50	1	0	0	0	0	0	6	53	0	0	0	0	1	0	111
7:00	0	57	1	0	0	0	0	0	2	51	0	0	0	0	1	0	112
7:15	0	73	0	0	0	0	0	0	1	63	0	0	0	0	1	4	138
7:30	0	80	1	0	0	0	0	0	1	57	0	0	0	0	0	0	139
7:45	0	74	2	0	0	0	0	0	6	86	0	0	0	0	0	3	168
8:00	0	54	2	0	0	0	0	0	3	51	0	0	0	0	0	0	110
8:15	0	65	1	0	0	0	0	1	1	57	0	0	0	0	0	2	124
8:30	0	59	0	0	0	0	0	0	1	52	0	0	0	0	2	1	114
8:45	0	41	0	0	0	0	0	0	1	66	0	0	1	0	0	0	109
9:00	0	58	0	0	0	0	0	0	2	46	0	0	0	0	1	3	107
9:15	0	38	1	0	0	0	0	0	1	54	0	0	1	0	0	0	95
9:30	0	41	0	0	0	0	0	0	1	36	0	0	2	0	1	1	81
9:45	0	50	1	0	0	0	0	0	0	47	0	0	0	0	1	2	99
10:00	0	40	1	0	0	0	0	0	4	41	0	1	0	0	0	3	86
10:15	0	37	4	0	0	0	0	0	0	53	0	0	0	0	1	0	95
10:30	0	46	1	0	0	0	0	1	2	39	0	0	0	0	1	0	89
10:45	0	36	1	0	0	0	0	0	1	44	0	0	0	0	1	0	83
11:00	0	48	1	0	0	0	0	0	1	47	0	0	0	0	3	10	100
11:15	0	53	1	0	0	0	0	0	1	61	0	0	1	0	1	2	118
11:30	0	61	0	0	0	0	0	0	2	46	0	1	0	0	1	1	110
11:45	0	64	0	0	0	0	0	0	1	58	0	0	2	0	2	1	127
12:00	0	53	1	0	0	0	0	0	4	78	0	0	4	0	0	0	140
12:15	0	69	0	0	0	0	0	0	1	63	0	0	0	0	1	3	134
12:30	0	58	0	0	0	0	0	0	0	41	0	0	0	0	1	2	100
12:45	0	58	1	0	0	0	0	0	2	79	0	0	1	0	1	0	142
13:00	0	51	3	0	0	0	0	0	0	64	0	0	0	0	6	1	124
13:15	0	49	1	0	0	0	0	0	1	53	0	0	1	0	3	2	108
13:30	0	59	2	0	0	0	0	1	3	55	0	0	1	0	4	3	124
13:45	0	60	0	0	0	0	0	0	1	67	0	0	0	0	1	1	129
14:00	0	61	0	0	0	0	0	0	2	56	0	0	2	0	1	4	122
14:15	0	57	2	0	0	0	0	0	1	72	0	0	2	0	2	1	136
14:30	0	61	0	0	0	0	0	0	5	70	0	0	1	0	5	0	142
14:45	0	54	2	0	0	0	0	0	1	76	0	0	3	0	4	0	140
15:00	0	66	4	0	0	0	0	0	3	75	0	0	1	0	4	1	153
15:15	0	77	4	0	0	0	0	0	0	71	0	0	1	0	0	2	153
15:30	0	55	6	0	0	0	0	0	4	65	0	0	1	0	0	0	131
15:45	0	69	3	0	0	0	0	0	6	69	0	0	9	0	5	3	161
16:00	0	77	1	0	0	0	0	0	2	87	0	0	11	0	4	0	182
16:15	0	84	1	0	0	0	0	0	0	97	0	0	2	0	9	1	193
16:30	0	78	0	0	0	0	0	0	1	94	0	0	1	0	3	3	177
16:45	0	66	1	0	0	0	0	0	1	93	0	0	0	0	1	2	162
17:00	0	84	0	0	0	0	0	0	2	95	0	0	1	0	0	0	182
17:15	0	70	0	0	0	0	0	0	0	92	0	0	0	0	1	2	163
17:30	0	73	0	0	0	0	0	0	0	70	0	0	0	0	0	3	143
17:45	0	43	0	0	0	0	0	0	0	48	0	0	0	0	0	0	91
18:00	0	35	0	0	0	0	0	0	1	53	0	0	0	0	0	0	89
18:15	0	33	0	0	0	0	0	0	0	35	0	0	0	0	0	0	68
18:30	0	43	1	0	0	0	0	0	0	26	0	0	1	0	0	0	71
18:45	0	28	1	0	0	0	0	0	1	26	0	0	0	0	1	0	57
Total	0	2899	53	0	0	0	0	3	83	3064	0	2	50	0	75	69	6224
Cars+	0	2774	44	0	0	0	0	0	76	2965	0	0	43	0	67	12	5969
Trucks	0	125	9	0	0	0	0	3	7	99	0	2	7	0	8	57	255
% Trucks	0.0	4.3	17.0	0.0	0.0	0.0	0.0	100.0	8.4	3.2	0.0	100.0	14.0	0.0	10.7	82.6	
	4.5				0.0				3.4				12.0				4.1

Location: Valleyhigh Drive NW at Instrument Drive NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	Valleyhigh Dr NW				N/A				Valleyhigh Dr NW				Instrument Drive NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	27	0	0	0	0	0	0	0	25	0	0	0	0	0	0	52
6:15	0	37	0	0	0	0	0	0	3	34	0	0	0	0	0	0	74
6:30	0	37	0	0	0	0	0	0	0	26	0	0	0	0	0	0	63
6:45	0	49	1	0	0	0	0	0	6	52	0	0	0	0	1	0	109
7:00	0	57	1	0	0	0	0	0	2	51	0	0	0	0	1	0	112
7:15	0	72	0	0	0	0	0	0	1	60	0	0	0	0	1	0	134
7:30	0	77	1	0	0	0	0	0	1	55	0	0	0	0	0	0	134
7:45	0	74	2	0	0	0	0	0	6	82	0	0	0	0	0	0	164
8:00	0	54	2	0	0	0	0	0	3	49	0	0	0	0	0	0	108
8:15	0	62	1	0	0	0	0	0	1	55	0	0	0	0	0	0	119
8:30	0	57	0	0	0	0	0	0	1	51	0	0	0	0	1	0	110
8:45	0	39	0	0	0	0	0	0	1	65	0	0	1	0	0	0	106
9:00	0	45	0	0	0	0	0	0	2	42	0	0	0	0	1	0	90
9:15	0	37	0	0	0	0	0	0	0	50	0	0	1	0	0	0	88
9:30	0	37	0	0	0	0	0	0	1	35	0	0	1	0	1	0	75
9:45	0	47	0	0	0	0	0	0	0	46	0	0	0	0	1	0	94
10:00	0	39	1	0	0	0	0	0	3	38	0	0	0	0	0	0	81
10:15	0	34	1	0	0	0	0	0	0	48	0	0	0	0	1	0	84
10:30	0	41	1	0	0	0	0	0	2	37	0	0	0	0	0	0	81
10:45	0	33	0	0	0	0	0	0	1	41	0	0	0	0	1	0	76
11:00	0	43	1	0	0	0	0	0	1	46	0	0	0	0	3	7	94
11:15	0	53	1	0	0	0	0	0	1	57	0	0	1	0	1	0	114
11:30	0	56	0	0	0	0	0	0	2	46	0	0	0	0	0	0	104
11:45	0	59	0	0	0	0	0	0	1	55	0	0	2	0	2	0	119
12:00	0	50	0	0	0	0	0	0	3	76	0	0	3	0	0	0	132
12:15	0	67	0	0	0	0	0	0	0	58	0	0	0	0	1	0	126
12:30	0	55	0	0	0	0	0	0	0	39	0	0	0	0	1	0	95
12:45	0	56	1	0	0	0	0	0	1	76	0	0	0	0	1	0	135
13:00	0	48	2	0	0	0	0	0	0	59	0	0	0	0	4	1	113
13:15	0	47	1	0	0	0	0	0	1	52	0	0	0	0	3	0	104
13:30	0	53	1	0	0	0	0	0	3	55	0	0	0	0	3	0	115
13:45	0	58	0	0	0	0	0	0	0	65	0	0	0	0	1	0	124
14:00	0	59	0	0	0	0	0	0	2	53	0	0	2	0	0	0	116
14:15	0	54	2	0	0	0	0	0	1	70	0	0	2	0	2	0	131
14:30	0	59	0	0	0	0	0	0	5	69	0	0	0	0	5	0	138
14:45	0	50	2	0	0	0	0	0	1	70	0	0	3	0	4	0	130
15:00	0	61	4	0	0	0	0	0	3	74	0	0	1	0	3	0	146
15:15	0	75	4	0	0	0	0	0	0	70	0	0	1	0	0	2	150
15:30	0	53	6	0	0	0	0	0	4	64	0	0	1	0	0	0	128
15:45	0	64	3	0	0	0	0	0	5	67	0	0	8	0	5	1	152
16:00	0	75	1	0	0	0	0	0	2	85	0	0	11	0	4	0	178
16:15	0	82	1	0	0	0	0	0	0	91	0	0	2	0	9	0	185
16:30	0	74	0	0	0	0	0	0	1	93	0	0	1	0	3	1	172
16:45	0	65	1	0	0	0	0	0	1	93	0	0	0	0	1	0	161
17:00	0	83	0	0	0	0	0	0	2	94	0	0	1	0	0	0	180
17:15	0	69	0	0	0	0	0	0	0	91	0	0	0	0	1	0	161
17:30	0	71	0	0	0	0	0	0	0	68	0	0	0	0	0	0	139
17:45	0	42	0	0	0	0	0	0	0	48	0	0	0	0	0	0	90
18:00	0	35	0	0	0	0	0	0	1	52	0	0	0	0	0	0	88
18:15	0	33	0	0	0	0	0	0	0	35	0	0	0	0	0	0	68
18:30	0	42	1	0	0	0	0	0	0	26	0	0	1	0	0	0	70
18:45	0	28	1	0	0	0	0	0	1	26	0	0	0	0	1	0	57
Total	0	2774	44	0	0	0	0	0	76	2965	0	0	43	0	67	12	5969

Location: Valleyhigh Drive NW at Instrument Drive NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	Valleyhigh Dr NW				N/A				Valleyhigh Dr NW				Instrument Drive NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
6:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6:45	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	4	4
7:30	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
7:45	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	3	4
8:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:15	0	3	0	0	0	0	0	1	0	2	0	0	0	0	0	2	5
8:30	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	4
8:45	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
9:00	0	13	0	0	0	0	0	0	0	4	0	0	0	0	0	3	17
9:15	0	1	1	0	0	0	0	0	1	4	0	0	0	0	0	0	7
9:30	0	4	0	0	0	0	0	0	0	1	0	0	1	0	0	1	6
9:45	0	3	1	0	0	0	0	0	0	1	0	0	0	0	0	2	5
10:00	0	1	0	0	0	0	0	0	1	3	0	1	0	0	0	3	5
10:15	0	3	3	0	0	0	0	0	0	5	0	0	0	0	0	0	11
10:30	0	5	0	0	0	0	0	1	0	2	0	0	0	0	1	0	8
10:45	0	3	1	0	0	0	0	0	0	3	0	0	0	0	0	0	7
11:00	0	5	0	0	0	0	0	0	0	1	0	0	0	0	0	3	6
11:15	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	2	4
11:30	0	5	0	0	0	0	0	0	0	0	0	1	0	0	1	1	6
11:45	0	5	0	0	0	0	0	0	0	3	0	0	0	0	0	1	8
12:00	0	3	1	0	0	0	0	0	1	2	0	0	1	0	0	0	8
12:15	0	2	0	0	0	0	0	0	1	5	0	0	0	0	0	3	8
12:30	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	2	5
12:45	0	2	0	0	0	0	0	0	1	3	0	0	1	0	0	0	7
13:00	0	3	1	0	0	0	0	0	0	5	0	0	0	0	2	0	11
13:15	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	2	4
13:30	0	6	1	0	0	0	0	1	0	0	0	0	1	0	1	3	9
13:45	0	2	0	0	0	0	0	0	1	2	0	0	0	0	0	1	5
14:00	0	2	0	0	0	0	0	0	0	3	0	0	0	0	1	4	6
14:15	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	1	5
14:30	0	2	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4
14:45	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0	0	10
15:00	0	5	0	0	0	0	0	0	0	1	0	0	0	0	1	1	7
15:15	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
15:30	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
15:45	0	5	0	0	0	0	0	0	1	2	0	0	1	0	0	2	9
16:00	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
16:15	0	2	0	0	0	0	0	0	0	6	0	0	0	0	0	1	8
16:30	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	2	5
16:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
17:00	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
17:15	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	2
17:30	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	3	4
17:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	125	9	0	0	0	0	3	7	99	0	2	7	0	8	57	255

Location: 37th Street NW at International Business Machine (West)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	IBM Road				IBM Road				Parking lot road				IBM Road				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	14	0	4	1	0	3	4	0	0	0	0	0	1	2	0	0	28
6:15	20	0	8	0	0	5	7	0	0	0	0	0	2	1	0	0	43
6:30	22	0	4	1	0	6	11	0	0	0	0	0	0	1	0	0	44
6:45	20	0	4	0	0	9	15	0	0	0	0	0	1	7	1	0	57
7:00	28	0	2	0	0	2	14	0	0	0	0	0	1	0	0	0	47
7:15	33	1	3	0	0	4	22	0	0	0	0	0	2	5	0	0	70
7:30	34	0	7	0	0	6	20	0	0	0	0	0	2	2	0	0	71
7:45	46	0	6	0	1	11	26	0	0	0	0	0	1	7	0	0	98
8:00	29	0	5	0	1	12	19	0	0	0	0	0	0	4	0	0	70
8:15	24	1	9	0	2	11	18	1	0	0	1	0	3	2	0	0	71
8:30	20	1	5	2	1	9	17	0	1	0	0	0	2	3	0	0	59
8:45	22	0	14	0	1	15	12	0	0	0	1	1	1	1	0	0	67
9:00	17	0	6	0	0	13	26	0	0	0	0	0	2	4	0	0	68
9:15	11	0	6	2	1	7	14	1	0	0	1	0	1	3	0	0	44
9:30	11	0	7	0	1	4	21	0	0	0	0	0	3	4	0	0	51
9:45	17	0	8	1	0	3	19	1	0	0	0	0	1	2	0	0	50
10:00	8	0	6	0	1	3	15	0	0	0	1	0	3	1	0	0	38
10:15	11	0	5	0	0	2	18	0	0	0	0	0	2	3	0	0	41
10:30	10	0	3	0	0	6	16	0	0	0	0	2	2	1	0	0	38
10:45	10	1	6	1	0	2	24	0	0	0	0	0	2	0	0	0	45
11:00	14	0	9	1	0	5	18	0	0	0	2	0	5	2	0	0	55
11:15	13	0	9	3	1	6	21	0	0	0	0	0	7	6	0	0	63
11:30	16	0	12	4	1	4	28	1	0	0	0	0	11	12	0	0	84
11:45	13	1	6	3	0	6	25	0	1	0	0	0	9	3	0	0	64
12:00	18	0	12	2	2	5	41	0	0	0	0	0	15	10	0	0	103
12:15	23	0	14	0	0	5	30	0	0	1	0	0	8	8	0	0	89
12:30	20	0	3	0	1	6	30	2	0	0	0	0	7	4	0	0	71
12:45	33	2	5	0	0	10	23	2	0	0	0	0	6	5	0	0	84
13:00	21	1	11	1	1	7	29	0	0	0	0	0	11	3	0	0	84
13:15	16	0	3	2	0	5	36	0	0	0	0	0	0	2	0	0	62
13:30	15	0	11	0	1	8	27	0	0	0	0	0	5	8	0	0	75
13:45	21	0	7	0	0	7	19	0	0	0	1	1	6	3	0	0	64
14:00	14	0	4	0	0	9	22	0	0	0	0	0	7	4	0	0	60
14:15	17	0	6	2	0	12	25	0	0	0	0	0	3	5	0	0	68
14:30	11	0	1	0	0	4	24	0	0	0	0	0	10	20	0	0	70
14:45	18	0	1	1	0	6	28	0	0	0	1	0	5	4	0	0	63
15:00	17	0	4	0	0	3	34	0	0	0	0	0	5	8	0	0	71
15:15	15	0	4	0	0	2	35	0	0	0	0	0	4	6	0	0	66
15:30	29	1	1	0	0	6	33	0	0	0	0	0	2	8	0	0	80
15:45	18	0	0	1	0	2	42	0	0	0	0	0	3	8	0	0	73
16:00	22	0	3	3	0	3	69	0	0	0	0	0	13	8	0	0	118
16:15	19	0	1	1	0	5	55	0	0	0	0	0	11	3	0	0	94
16:30	29	0	6	0	0	7	43	0	0	0	0	0	4	14	0	0	103
16:45	22	0	3	0	0	7	42	0	0	0	0	0	9	10	0	0	93
17:00	27	0	3	1	0	6	61	1	0	0	0	0	20	13	0	0	130
17:15	31	0	6	1	0	3	59	1	0	0	0	0	7	11	0	0	117
17:30	14	0	2	0	1	5	24	0	0	0	1	0	9	5	0	0	61
17:45	16	0	1	2	0	2	25	1	0	0	0	0	2	4	0	0	50
18:00	14	0	3	0	0	2	44	0	0	0	0	0	2	6	0	0	71
18:15	16	0	1	0	0	1	17	0	0	0	0	0	5	4	0	0	44
18:30	21	0	2	0	0	1	19	0	0	0	0	0	5	3	0	0	51
18:45	10	0	2	3	0	1	29	0	0	0	0	0	3	5	0	0	50
Total	1010	9	274	39	17	294	1395	11	2	1	9	4	251	268	1	0	3531
Cars+	950	9	271	17	17	256	1386	9	2	1	9	2	244	241	1	0	3387
Trucks	60	0	3	22	0	38	9	2	0	0	0	2	7	27	0	0	144
% Trucks	5.9	0.0	1.1	56.4	0.0	12.9	0.6	18.2	0.0	0.0	0.0	50.0	2.8	10.1	0.0	0.0	
	4.9				2.8				0.0				6.5				4.1

Location: 37th Street NW at International Business Machine (West)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	IBM Road				IBM Road				Parking lot road				IBM Road				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	12	0	4	1	0	3	4	0	0	0	0	0	0	1	0	0	24
6:15	19	0	8	0	0	3	7	0	0	0	0	0	0	0	0	0	37
6:30	19	0	4	1	0	5	10	0	0	0	0	0	0	1	0	0	39
6:45	19	0	4	0	0	9	15	0	0	0	0	0	1	3	1	0	52
7:00	24	0	2	0	0	2	14	0	0	0	0	0	1	0	0	0	43
7:15	32	1	3	0	0	4	21	0	0	0	0	0	2	4	0	0	67
7:30	31	0	7	0	0	6	20	0	0	0	0	0	2	2	0	0	68
7:45	45	0	5	0	1	11	26	0	0	0	0	0	1	7	0	0	96
8:00	27	0	5	0	1	11	18	0	0	0	0	0	0	3	0	0	65
8:15	23	1	9	0	2	9	18	1	0	0	1	0	3	1	0	0	67
8:30	17	1	5	0	1	7	17	0	1	0	0	0	2	3	0	0	54
8:45	22	0	14	0	1	14	11	0	0	0	1	0	1	0	0	0	64
9:00	16	0	6	0	0	12	26	0	0	0	0	0	2	3	0	0	65
9:15	11	0	6	1	1	6	14	1	0	0	1	0	1	2	0	0	42
9:30	10	0	7	0	1	4	20	0	0	0	0	0	3	2	0	0	47
9:45	17	0	8	0	0	3	19	0	0	0	0	0	1	2	0	0	50
10:00	8	0	6	0	1	3	15	0	0	0	1	0	3	0	0	0	37
10:15	11	0	5	0	0	1	17	0	0	0	0	0	2	3	0	0	39
10:30	10	0	3	0	0	5	16	0	0	0	0	2	2	1	0	0	37
10:45	9	1	6	1	0	1	24	0	0	0	0	0	2	0	0	0	43
11:00	14	0	9	0	0	4	18	0	0	0	2	0	5	2	0	0	54
11:15	13	0	9	1	1	5	21	0	0	0	0	0	7	5	0	0	61
11:30	15	0	12	4	1	4	28	1	0	0	0	0	11	11	0	0	82
11:45	13	1	6	2	0	3	25	0	1	0	0	0	8	3	0	0	60
12:00	18	0	12	2	2	5	41	0	0	0	0	0	15	9	0	0	102
12:15	22	0	14	0	0	4	30	0	0	1	0	0	8	7	0	0	86
12:30	19	0	2	0	1	5	30	2	0	0	0	0	7	4	0	0	68
12:45	33	2	5	0	0	10	22	2	0	0	0	0	6	3	0	0	81
13:00	20	1	11	1	1	5	29	0	0	0	0	0	9	2	0	0	78
13:15	16	0	3	0	0	4	35	0	0	0	0	0	0	2	0	0	60
13:30	15	0	11	0	1	5	27	0	0	0	0	0	5	6	0	0	70
13:45	20	0	7	0	0	4	19	0	0	0	1	0	5	3	0	0	59
14:00	14	0	4	0	0	8	22	0	0	0	0	0	7	2	0	0	57
14:15	17	0	6	1	0	11	25	0	0	0	0	0	3	5	0	0	67
14:30	11	0	1	0	0	4	24	0	0	0	0	0	10	20	0	0	70
14:45	17	0	1	1	0	4	28	0	0	0	1	0	5	4	0	0	60
15:00	15	0	4	0	0	3	34	0	0	0	0	0	5	8	0	0	69
15:15	14	0	4	0	0	2	35	0	0	0	0	0	4	6	0	0	65
15:30	27	1	1	0	0	6	33	0	0	0	0	0	2	8	0	0	78
15:45	17	0	0	0	0	2	42	0	0	0	0	0	3	8	0	0	72
16:00	19	0	3	0	0	3	69	0	0	0	0	0	13	8	0	0	115
16:15	17	0	1	1	0	4	55	0	0	0	0	0	11	3	0	0	91
16:30	26	0	5	0	0	7	43	0	0	0	0	0	4	13	0	0	98
16:45	20	0	3	0	0	6	42	0	0	0	0	0	9	10	0	0	90
17:00	26	0	3	0	0	5	61	1	0	0	0	0	20	13	0	0	128
17:15	29	0	6	0	0	3	59	1	0	0	0	0	7	11	0	0	115
17:30	12	0	2	0	1	5	24	0	0	0	1	0	9	5	0	0	59
17:45	14	0	1	0	0	2	24	0	0	0	0	0	2	4	0	0	47
18:00	14	0	3	0	0	1	44	0	0	0	0	0	2	6	0	0	70
18:15	13	0	1	0	0	1	17	0	0	0	0	0	5	4	0	0	41
18:30	20	0	2	0	0	1	19	0	0	0	0	0	5	3	0	0	50
18:45	8	0	2	0	0	1	29	0	0	0	0	0	3	5	0	0	48
Total	950	9	271	17	17	256	1386	9	2	1	9	2	244	241	1	0	3387

Location: 37th Street NW at International Business Machine (West)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	IBM Road				IBM Road				Parking lot road				IBM Road				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4
6:15	1	0	0	0	0	2	0	0	0	0	0	0	2	1	0	0	6
6:30	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5
6:45	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	5
7:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	3
7:30	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00	2	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	5
8:15	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	4
8:30	3	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	5
8:45	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	3
9:00	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3
9:15	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	2
9:30	1	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	4
9:45	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
10:15	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
10:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
10:45	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
11:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
11:15	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	2
11:30	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
11:45	0	0	0	1	0	3	0	0	0	0	0	0	1	0	0	0	4
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
12:15	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3
12:30	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:45	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3
13:00	1	0	0	0	0	2	0	0	0	0	0	0	2	1	0	0	6
13:15	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	0	2
13:30	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
13:45	1	0	0	0	0	3	0	0	0	0	0	1	1	0	0	0	5
14:00	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
14:15	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
15:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15:30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15:45	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16:00	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
16:15	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
16:30	3	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	5
16:45	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
17:00	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
17:15	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
17:30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
17:45	2	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	3
18:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
18:15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
18:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:45	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	60	0	3	22	0	38	9	2	0	0	0	2	7	27	0	0	144

Location: 37th Street NW at International Business Machine (East)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	N/A				37th Street NW				IBM ROAD				37th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	0	0	0	17	22	0	0	1	0	5	0	0	5	1	0	51
6:15	0	0	0	0	23	32	0	0	0	0	3	0	0	6	0	0	64
6:30	0	0	0	0	19	39	0	0	0	0	4	0	0	10	1	0	73
6:45	0	0	0	0	27	50	0	0	0	0	1	0	0	12	1	0	91
7:00	0	0	0	0	35	40	0	1	0	0	10	0	0	14	1	0	100
7:15	0	0	0	0	43	47	0	0	0	0	7	0	0	19	2	0	118
7:30	0	0	0	0	40	55	0	0	1	0	12	0	0	16	2	0	126
7:45	0	0	0	0	79	55	0	0	1	0	7	0	0	28	2	0	172
8:00	0	0	0	0	60	46	0	0	0	0	14	0	0	18	0	0	138
8:15	0	0	0	0	56	47	0	0	1	0	6	0	0	16	2	0	128
8:30	0	0	0	0	35	46	0	0	1	0	9	0	0	13	6	0	110
8:45	0	0	0	0	41	45	0	0	1	0	7	2	0	11	7	0	112
9:00	0	0	0	0	25	56	0	0	0	0	5	0	0	15	3	0	104
9:15	0	0	0	0	18	35	0	0	0	0	10	0	0	20	0	0	83
9:30	0	0	0	0	17	28	0	0	1	0	11	0	0	15	3	0	75
9:45	0	0	0	0	23	25	0	0	0	0	12	0	0	19	1	0	80
10:00	0	0	0	0	18	20	0	0	1	0	16	0	0	14	1	0	70
10:15	0	0	0	0	17	23	0	0	0	0	8	0	0	9	1	0	58
10:30	0	0	0	0	10	23	0	1	3	0	12	0	0	17	1	1	66
10:45	0	0	0	0	10	29	0	0	1	0	15	0	0	13	5	0	73
11:00	0	0	0	0	21	18	0	3	2	0	20	1	0	23	0	0	84
11:15	0	0	0	1	12	17	0	0	1	0	24	0	0	26	2	0	82
11:30	0	0	0	0	20	27	0	1	3	0	25	0	0	38	3	2	116
11:45	0	0	0	0	16	30	0	3	6	0	25	2	0	28	2	0	107
12:00	0	0	0	0	20	41	0	0	4	0	28	0	0	32	4	1	129
12:15	0	0	0	0	32	36	0	0	3	0	15	0	0	26	4	5	116
12:30	0	0	0	0	24	36	0	1	5	0	18	1	0	24	3	1	110
12:45	0	0	0	0	26	46	0	0	1	0	12	0	0	29	7	0	121
13:00	0	0	0	0	23	45	0	1	1	0	25	0	0	29	2	0	125
13:15	0	0	0	1	18	45	0	0	2	0	13	1	0	18	1	0	97
13:30	0	0	0	0	13	33	0	0	1	0	13	0	0	31	1	0	92
13:45	0	0	0	0	16	26	0	0	0	0	20	1	0	22	2	0	86
14:00	0	0	0	0	10	34	0	0	0	0	20	0	0	26	0	0	90
14:15	0	0	0	0	8	34	0	0	0	0	15	0	0	24	0	0	81
14:30	0	0	0	0	9	25	0	0	1	0	56	0	0	34	1	0	126
14:45	0	0	0	0	13	34	0	0	0	0	19	0	0	23	3	0	92
15:00	0	0	0	0	12	29	0	0	3	0	41	0	0	27	1	0	113
15:15	0	0	0	0	8	25	0	0	0	0	32	0	0	30	1	0	96
15:30	0	0	0	0	13	28	0	0	2	0	17	0	0	60	1	0	121
15:45	0	0	0	0	6	35	0	0	7	0	29	0	0	44	0	0	121
16:00	0	0	0	0	10	46	0	0	4	0	72	0	0	48	1	0	181
16:15	0	0	0	0	20	48	0	0	3	0	61	0	0	66	1	0	199
16:30	0	0	0	0	15	32	0	0	4	0	50	0	0	69	2	0	172
16:45	0	0	0	0	12	41	0	0	6	0	55	0	0	61	2	0	177
17:00	0	0	0	0	11	47	0	0	6	0	42	0	0	85	0	0	191
17:15	0	0	0	0	15	42	0	0	3	0	47	1	0	84	2	0	193
17:30	0	0	0	0	4	25	0	0	0	0	26	0	0	40	0	0	95
17:45	0	0	0	0	7	28	0	1	2	0	26	0	0	38	0	0	101
18:00	0	0	0	0	5	32	0	0	2	0	22	0	0	34	0	0	95
18:15	0	0	0	0	5	13	0	0	2	0	24	0	0	34	1	0	79
18:30	0	0	0	0	3	20	0	0	2	0	6	0	0	32	2	0	65
18:45	0	0	0	0	2	26	0	0	0	0	10	0	0	21	0	0	59
Total	0	0	0	2	1042	1807	0	12	88	0	1082	9	0	1496	89	10	5604
Cars+	0	0	0	0	1028	1742	0	9	86	0	1046	5	0	1409	87	10	5398
Trucks	0	0	0	2	14	65	0	3	2	0	36	4	0	87	2	0	206
% Trucks	0.0	0.0	0.0	100.0	1.3	3.6	0.0	25.0	2.3	0.0	3.3	44.4	0.0	5.8	2.2	0.0	
	0.0				2.8				3.2				5.6				3.7

Location: 37th Street NW at International Business Machine (East)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	N/A				37th Street NW				IBM ROAD				37th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	0	0	0	17	21	0	0	1	0	3	0	0	3	1	0	46
6:15	0	0	0	0	23	30	0	0	0	0	3	0	0	5	0	0	61
6:30	0	0	0	0	17	37	0	0	0	0	2	0	0	6	1	0	63
6:45	0	0	0	0	27	50	0	0	0	0	1	0	0	9	1	0	88
7:00	0	0	0	0	35	39	0	1	0	0	8	0	0	10	1	0	93
7:15	0	0	0	0	43	46	0	0	0	0	6	0	0	17	2	0	114
7:30	0	0	0	0	40	54	0	0	1	0	10	0	0	14	2	0	121
7:45	0	0	0	0	79	54	0	0	1	0	7	0	0	28	2	0	171
8:00	0	0	0	0	60	44	0	0	0	0	12	0	0	15	0	0	131
8:15	0	0	0	0	56	45	0	0	1	0	5	0	0	15	2	0	124
8:30	0	0	0	0	34	45	0	0	0	0	9	0	0	9	6	0	103
8:45	0	0	0	0	41	43	0	0	0	0	6	2	0	10	6	0	106
9:00	0	0	0	0	25	55	0	0	0	0	5	0	0	13	3	0	101
9:15	0	0	0	0	18	34	0	0	0	0	10	0	0	19	0	0	81
9:30	0	0	0	0	17	26	0	0	1	0	11	0	0	12	3	0	70
9:45	0	0	0	0	23	24	0	0	0	0	11	0	0	18	1	0	77
10:00	0	0	0	0	18	19	0	0	1	0	16	0	0	13	1	0	68
10:15	0	0	0	0	17	22	0	0	0	0	8	0	0	8	1	0	56
10:30	0	0	0	0	10	21	0	1	3	0	12	0	0	16	0	1	62
10:45	0	0	0	0	10	27	0	0	1	0	14	0	0	13	5	0	70
11:00	0	0	0	0	20	17	0	2	2	0	20	1	0	22	0	0	81
11:15	0	0	0	0	12	15	0	0	1	0	23	0	0	25	2	0	78
11:30	0	0	0	0	20	27	0	1	3	0	24	0	0	36	3	2	113
11:45	0	0	0	0	16	26	0	1	6	0	23	2	0	28	2	0	101
12:00	0	0	0	0	20	41	0	0	4	0	28	0	0	30	4	1	127
12:15	0	0	0	0	30	35	0	0	3	0	15	0	0	26	4	5	113
12:30	0	0	0	0	24	36	0	1	5	0	17	0	0	23	3	1	108
12:45	0	0	0	0	26	43	0	0	1	0	11	0	0	26	7	0	114
13:00	0	0	0	0	23	43	0	1	1	0	25	0	0	26	2	0	120
13:15	0	0	0	0	18	42	0	0	2	0	13	0	0	18	1	0	94
13:30	0	0	0	0	13	30	0	0	1	0	13	0	0	29	1	0	87
13:45	0	0	0	0	16	21	0	0	0	0	19	0	0	21	2	0	79
14:00	0	0	0	0	10	34	0	0	0	0	20	0	0	23	0	0	87
14:15	0	0	0	0	8	32	0	0	0	0	14	0	0	23	0	0	77
14:30	0	0	0	0	8	25	0	0	1	0	55	0	0	33	1	0	123
14:45	0	0	0	0	12	32	0	0	0	0	18	0	0	23	3	0	88
15:00	0	0	0	0	12	29	0	0	3	0	41	0	0	26	1	0	112
15:15	0	0	0	0	7	25	0	0	0	0	31	0	0	28	1	0	92
15:30	0	0	0	0	12	28	0	0	2	0	17	0	0	59	1	0	119
15:45	0	0	0	0	5	35	0	0	7	0	28	0	0	42	0	0	117
16:00	0	0	0	0	10	46	0	0	4	0	72	0	0	46	1	0	179
16:15	0	0	0	0	20	46	0	0	3	0	59	0	0	64	1	0	193
16:30	0	0	0	0	15	31	0	0	4	0	50	0	0	66	2	0	168
16:45	0	0	0	0	12	38	0	0	6	0	53	0	0	59	2	0	170
17:00	0	0	0	0	11	46	0	0	6	0	42	0	0	83	0	0	188
17:15	0	0	0	0	14	42	0	0	3	0	46	0	0	81	2	0	188
17:30	0	0	0	0	4	25	0	0	0	0	26	0	0	39	0	0	94
17:45	0	0	0	0	6	27	0	1	2	0	25	0	0	36	0	0	96
18:00	0	0	0	0	5	31	0	0	2	0	22	0	0	33	0	0	93
18:15	0	0	0	0	4	13	0	0	2	0	23	0	0	31	1	0	74
18:30	0	0	0	0	3	20	0	0	2	0	6	0	0	32	2	0	65
18:45	0	0	0	0	2	25	0	0	0	0	8	0	0	19	0	0	54
Total	0	0	0	0	1028	1742	0	9	86	0	1046	5	0	1409	87	10	5398

Location: 37th Street NW at International Business Machine (East)
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	N/A				37th Street NW				IBM ROAD				37th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	5
6:15	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
6:30	0	0	0	0	2	2	0	0	0	0	2	0	0	4	0	0	10
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
7:00	0	0	0	0	0	1	0	0	0	0	2	0	0	4	0	0	7
7:15	0	0	0	0	0	1	0	0	0	0	1	0	0	2	0	0	4
7:30	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	5
7:45	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	2	0	0	0	0	2	0	0	3	0	0	7
8:15	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	4
8:30	0	0	0	0	1	1	0	0	1	0	0	0	0	4	0	0	7
8:45	0	0	0	0	0	2	0	0	1	0	1	0	0	1	1	0	6
9:00	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
9:15	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
9:30	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
9:45	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
10:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
10:15	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
10:30	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	4
10:45	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	3
11:00	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	3
11:15	0	0	0	1	0	2	0	0	0	0	1	0	0	1	0	0	4
11:30	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3
11:45	0	0	0	0	0	4	0	2	0	0	2	0	0	0	0	0	6
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
12:15	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3
12:30	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	2
12:45	0	0	0	0	0	3	0	0	0	0	1	0	0	3	0	0	7
13:00	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	5
13:15	0	0	0	1	0	3	0	0	0	0	0	1	0	0	0	0	3
13:30	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	5
13:45	0	0	0	0	0	5	0	0	0	0	1	1	0	1	0	0	7
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
14:15	0	0	0	0	0	2	0	0	0	0	1	0	0	1	0	0	4
14:30	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	3
14:45	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	0	4
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15:15	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	0	4
15:30	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
15:45	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	0	4
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
16:15	0	0	0	0	0	2	0	0	0	0	2	0	0	2	0	0	6
16:30	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	4
16:45	0	0	0	0	0	3	0	0	0	0	2	0	0	2	0	0	7
17:00	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
17:15	0	0	0	0	1	0	0	0	0	0	1	1	0	3	0	0	5
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:45	0	0	0	0	1	1	0	0	0	0	1	0	0	2	0	0	5
18:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
18:15	0	0	0	0	1	0	0	0	0	0	1	0	0	3	0	0	5
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	5
Total	0	0	0	2	14	65	0	3	2	0	36	4	0	87	2	0	206

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	13	0	15	0	39	34	0	0	0	0	0	0	0	6	3	0	110
6:15	14	0	18	0	36	40	0	0	0	0	0	0	0	6	1	0	115
6:30	16	0	20	0	67	55	0	0	0	0	0	0	0	9	8	0	175
6:45	22	0	18	0	55	88	0	0	0	0	0	0	0	7	6	0	196
7:00	28	0	20	0	52	78	0	0	0	0	0	4	0	17	7	1	202
7:15	18	0	20	0	55	98	0	0	0	0	0	1	0	14	9	0	214
7:30	40	0	21	0	68	118	0	0	0	0	0	0	0	21	8	0	276
7:45	33	0	29	0	62	151	0	0	0	0	0	0	0	27	10	0	312
8:00	21	0	22	0	77	109	0	0	0	0	0	0	0	22	9	0	260
8:15	28	0	29	0	51	116	0	0	0	0	0	1	0	13	9	0	246
8:30	28	0	16	0	58	117	0	0	0	0	0	0	0	16	7	0	242
8:45	36	2	24	0	94	123	0	0	0	0	0	2	0	13	5	3	297
9:00	19	0	14	0	70	141	0	0	0	0	0	1	0	13	9	0	266
9:15	38	0	12	1	55	110	0	0	0	0	0	0	0	21	9	0	245
9:30	31	1	4	0	63	112	0	0	0	0	0	0	0	15	10	0	236
9:45	29	0	11	0	61	111	0	0	0	0	0	1	0	18	12	0	242
10:00	40	0	5	0	72	110	0	0	0	0	0	0	0	23	10	0	260
10:15	39	0	6	0	70	106	0	0	0	0	0	0	0	13	7	0	241
10:30	47	1	1	0	77	120	0	0	0	0	0	1	0	24	8	0	278
10:45	44	0	4	0	67	121	0	0	0	0	0	0	0	21	9	0	266
11:00	38	3	8	0	80	118	0	0	0	0	0	0	0	25	15	0	287
11:15	53	1	8	1	67	110	0	0	0	0	0	0	0	33	23	0	295
11:30	51	1	7	1	85	151	0	0	0	0	0	3	0	44	25	0	364
11:45	57	1	6	0	74	169	0	0	0	0	0	3	0	44	11	0	362
12:00	46	0	10	0	80	157	0	0	0	0	0	0	0	47	18	0	358
12:15	60	0	13	0	88	182	0	0	0	0	0	0	0	24	13	0	380
12:30	67	1	14	0	101	150	0	0	0	0	0	4	0	32	13	0	378
12:45	58	1	16	0	79	164	0	0	0	0	0	0	0	24	12	0	354
13:00	36	0	9	1	82	151	0	0	0	0	0	1	0	43	12	0	333
13:15	37	0	11	0	69	148	0	0	0	0	0	2	0	21	10	0	296
13:30	53	1	5	0	73	154	0	0	0	0	0	1	0	28	16	0	330
13:45	37	0	7	0	90	142	0	0	0	0	0	0	0	32	11	0	319
14:00	44	1	6	0	72	142	0	0	0	0	0	16	0	31	12	0	308
14:15	51	1	5	0	71	134	0	0	0	0	0	0	0	26	16	0	304
14:30	49	0	3	0	87	125	0	0	0	0	0	0	0	51	36	0	351
14:45	37	0	4	0	77	140	0	0	0	0	0	18	0	38	6	0	302
15:00	49	0	8	0	86	150	0	0	0	0	0	2	0	53	14	0	360
15:15	57	0	1	0	73	145	0	0	0	0	0	0	0	49	16	1	341
15:30	56	0	3	0	105	128	0	0	0	0	0	1	0	53	17	0	362
15:45	52	1	2	0	101	156	0	0	0	0	0	2	0	52	23	0	387
16:00	67	0	1	0	132	158	0	0	0	0	0	2	0	72	42	0	472
16:15	66	1	6	0	108	201	0	0	0	0	0	1	0	107	36	0	525
16:30	53	0	2	0	134	153	0	0	0	0	0	1	0	73	35	0	450
16:45	58	0	4	0	122	157	0	0	0	0	0	0	0	80	45	1	466
17:00	76	1	3	0	149	135	0	0	0	0	0	0	0	83	46	0	493
17:15	52	0	13	0	126	154	0	0	0	0	0	1	0	100	36	0	481
17:30	64	0	3	0	86	126	0	0	0	0	0	1	0	45	26	0	350
17:45	55	2	2	0	70	135	0	0	0	0	0	0	0	47	18	0	329
18:00	48	1	0	0	77	141	0	0	0	0	0	3	0	40	17	0	324
18:15	46	1	2	0	67	95	0	0	0	0	0	0	0	44	12	0	267
18:30	34	0	1	0	59	107	0	0	0	0	0	0	0	28	13	0	242
18:45	52	0	3	0	67	121	0	0	0	0	0	0	0	25	6	0	274
Total	2243	22	495	4	4086	6657	0	0	0	0	0	73	0	1813	807	6	16123
Cars+	2212	22	481	3	3864	6559	0	0	0	0	0	46	0	1730	769	5	15637
Trucks	31	0	14	1	222	98	0	0	0	0	0	27	0	83	38	1	486
% Trucks	1.4	0.0	2.8	25.0	5.4	1.5	0.0	0.0	0.0	0.0	0.0	37.0	0.0	4.6	4.7	16.7	
	1.6				3.0				0.0				4.6				3.0

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	12	0	15	0	34	33	0	0	0	0	0	0	0	3	2	0	99
6:15	13	0	17	0	32	39	0	0	0	0	0	0	0	6	0	0	107
6:30	16	0	20	0	62	50	0	0	0	0	0	0	0	7	4	0	159
6:45	22	0	18	0	52	86	0	0	0	0	0	0	0	5	5	0	188
7:00	27	0	20	0	45	77	0	0	0	0	0	1	0	13	5	1	187
7:15	18	0	20	0	54	97	0	0	0	0	0	0	0	13	7	0	209
7:30	39	0	21	0	62	116	0	0	0	0	0	0	0	19	6	0	263
7:45	30	0	29	0	61	150	0	0	0	0	0	0	0	27	10	0	307
8:00	21	0	22	0	72	107	0	0	0	0	0	0	0	19	7	0	248
8:15	27	0	29	0	47	113	0	0	0	0	0	0	0	13	7	0	236
8:30	28	0	15	0	52	115	0	0	0	0	0	0	0	14	5	0	229
8:45	35	2	24	0	85	120	0	0	0	0	0	2	0	12	4	3	282
9:00	19	0	14	0	67	139	0	0	0	0	0	0	0	12	8	0	259
9:15	36	0	11	1	51	108	0	0	0	0	0	0	0	21	8	0	235
9:30	30	1	4	0	61	109	0	0	0	0	0	0	0	13	9	0	227
9:45	28	0	11	0	55	108	0	0	0	0	0	0	0	16	12	0	230
10:00	39	0	5	0	65	108	0	0	0	0	0	0	0	22	10	0	249
10:15	37	0	5	0	67	103	0	0	0	0	0	0	0	13	6	0	231
10:30	47	1	1	0	74	118	0	0	0	0	0	1	0	23	8	0	272
10:45	42	0	3	0	62	120	0	0	0	0	0	0	0	20	9	0	256
11:00	38	3	8	0	67	115	0	0	0	0	0	0	0	24	15	0	270
11:15	50	1	8	0	63	108	0	0	0	0	0	0	0	33	21	0	284
11:30	51	1	7	1	80	150	0	0	0	0	0	3	0	41	25	0	355
11:45	56	1	4	0	70	166	0	0	0	0	0	0	0	42	11	0	350
12:00	46	0	10	0	77	157	0	0	0	0	0	0	0	45	18	0	353
12:15	60	0	13	0	82	179	0	0	0	0	0	0	0	24	13	0	371
12:30	66	1	14	0	96	150	0	0	0	0	0	3	0	31	12	0	370
12:45	58	1	16	0	76	161	0	0	0	0	0	0	0	21	11	0	344
13:00	36	0	8	1	78	148	0	0	0	0	0	1	0	41	11	0	322
13:15	36	0	11	0	62	144	0	0	0	0	0	0	0	21	10	0	284
13:30	53	1	4	0	69	152	0	0	0	0	0	0	0	26	16	0	321
13:45	36	0	5	0	81	137	0	0	0	0	0	0	0	30	11	0	300
14:00	44	1	6	0	71	142	0	0	0	0	0	15	0	29	12	0	305
14:15	51	1	5	0	66	131	0	0	0	0	0	0	0	26	14	0	294
14:30	48	0	3	0	76	123	0	0	0	0	0	0	0	49	36	0	335
14:45	37	0	4	0	75	137	0	0	0	0	0	15	0	37	6	0	296
15:00	49	0	8	0	80	149	0	0	0	0	0	2	0	52	14	0	352
15:15	55	0	1	0	68	143	0	0	0	0	0	0	0	46	16	0	329
15:30	55	0	3	0	99	126	0	0	0	0	0	1	0	52	17	0	352
15:45	52	1	1	0	97	154	0	0	0	0	0	1	0	50	22	0	377
16:00	67	0	1	0	126	158	0	0	0	0	0	0	0	70	42	0	464
16:15	66	1	5	0	106	199	0	0	0	0	0	0	0	104	35	0	516
16:30	53	0	2	0	131	153	0	0	0	0	0	0	0	70	35	0	444
16:45	58	0	4	0	121	154	0	0	0	0	0	0	0	78	44	1	459
17:00	75	1	2	0	146	135	0	0	0	0	0	0	0	81	46	0	486
17:15	51	0	13	0	124	153	0	0	0	0	0	0	0	97	35	0	473
17:30	64	0	3	0	83	126	0	0	0	0	0	0	0	44	26	0	346
17:45	55	2	2	0	70	133	0	0	0	0	0	0	0	45	17	0	324
18:00	48	1	0	0	75	140	0	0	0	0	0	1	0	39	17	0	320
18:15	46	1	2	0	65	94	0	0	0	0	0	0	0	41	11	0	260
18:30	34	0	1	0	58	106	0	0	0	0	0	0	0	28	13	0	240
18:45	52	0	3	0	66	120	0	0	0	0	0	0	0	22	5	0	268
Total	2212	22	481	3	3864	6559	0	0	0	0	0	46	0	1730	769	5	15637

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	1	0	0	0	5	1	0	0	0	0	0	0	0	3	1	0	11
6:15	1	0	1	0	4	1	0	0	0	0	0	0	0	0	1	0	8
6:30	0	0	0	0	5	5	0	0	0	0	0	0	0	2	4	0	16
6:45	0	0	0	0	3	2	0	0	0	0	0	0	0	2	1	0	8
7:00	1	0	0	0	7	1	0	0	0	0	0	3	0	4	2	0	15
7:15	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2	0	5
7:30	1	0	0	0	6	2	0	0	0	0	0	0	0	2	2	0	13
7:45	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
8:00	0	0	0	0	5	2	0	0	0	0	0	0	0	3	2	0	12
8:15	1	0	0	0	4	3	0	0	0	0	0	1	0	0	2	0	10
8:30	0	0	1	0	6	2	0	0	0	0	0	0	0	2	2	0	13
8:45	1	0	0	0	9	3	0	0	0	0	0	0	0	1	1	0	15
9:00	0	0	0	0	3	2	0	0	0	0	0	1	0	1	1	0	7
9:15	2	0	1	0	4	2	0	0	0	0	0	0	0	0	1	0	10
9:30	1	0	0	0	2	3	0	0	0	0	0	0	0	2	1	0	9
9:45	1	0	0	0	6	3	0	0	0	0	0	1	0	2	0	0	12
10:00	1	0	0	0	7	2	0	0	0	0	0	0	0	1	0	0	11
10:15	2	0	1	0	3	3	0	0	0	0	0	0	0	0	1	0	10
10:30	0	0	0	0	3	2	0	0	0	0	0	0	0	1	0	0	6
10:45	2	0	1	0	5	1	0	0	0	0	0	0	0	1	0	0	10
11:00	0	0	0	0	13	3	0	0	0	0	0	0	0	1	0	0	17
11:15	3	0	0	1	4	2	0	0	0	0	0	0	0	0	2	0	11
11:30	0	0	0	0	5	1	0	0	0	0	0	0	0	3	0	0	9
11:45	1	0	2	0	4	3	0	0	0	0	0	3	0	2	0	0	12
12:00	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	5
12:15	0	0	0	0	6	3	0	0	0	0	0	0	0	0	0	0	9
12:30	1	0	0	0	5	0	0	0	0	0	0	1	0	1	1	0	8
12:45	0	0	0	0	3	3	0	0	0	0	0	0	0	3	1	0	10
13:00	0	0	1	0	4	3	0	0	0	0	0	0	0	2	1	0	11
13:15	1	0	0	0	7	4	0	0	0	0	0	2	0	0	0	0	12
13:30	0	0	1	0	4	2	0	0	0	0	0	1	0	2	0	0	9
13:45	1	0	2	0	9	5	0	0	0	0	0	0	0	2	0	0	19
14:00	0	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	3
14:15	0	0	0	0	5	3	0	0	0	0	0	0	0	0	2	0	10
14:30	1	0	0	0	11	2	0	0	0	0	0	0	0	2	0	0	16
14:45	0	0	0	0	2	3	0	0	0	0	0	3	0	1	0	0	6
15:00	0	0	0	0	6	1	0	0	0	0	0	0	0	1	0	0	8
15:15	2	0	0	0	5	2	0	0	0	0	0	0	0	3	0	1	12
15:30	1	0	0	0	6	2	0	0	0	0	0	0	0	1	0	0	10
15:45	0	0	1	0	4	2	0	0	0	0	0	1	0	2	1	0	10
16:00	0	0	0	0	6	0	0	0	0	0	0	2	0	2	0	0	8
16:15	0	0	1	0	2	2	0	0	0	0	0	1	0	3	1	0	9
16:30	0	0	0	0	3	0	0	0	0	0	0	1	0	3	0	0	6
16:45	0	0	0	0	1	3	0	0	0	0	0	0	0	2	1	0	7
17:00	1	0	1	0	3	0	0	0	0	0	0	0	0	2	0	0	7
17:15	1	0	0	0	2	1	0	0	0	0	0	1	0	3	1	0	8
17:30	0	0	0	0	3	0	0	0	0	0	0	1	0	1	0	0	4
17:45	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1	0	5
18:00	0	0	0	0	2	1	0	0	0	0	0	2	0	1	0	0	4
18:15	0	0	0	0	2	1	0	0	0	0	0	0	0	3	1	0	7
18:30	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
18:45	0	0	0	0	1	1	0	0	0	0	0	0	0	3	1	0	6
Total	31	0	14	1	222	98	0	0	0	0	0	27	0	83	38	1	486

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	0	0	0	0	68	15	0	8	21	37	0	3	16	0	0	168
6:15	0	0	0	1	0	60	11	0	15	33	46	0	0	19	0	0	184
6:30	0	0	0	0	0	95	25	0	31	41	67	1	2	24	0	0	285
6:45	0	0	0	0	0	100	24	0	39	52	91	2	1	29	0	0	336
7:00	0	0	0	0	0	96	22	0	35	41	55	2	4	40	0	0	293
7:15	0	0	0	0	0	115	16	0	41	71	80	1	1	31	0	0	355
7:30	0	0	0	0	0	145	24	0	43	80	86	0	3	55	0	0	436
7:45	0	0	0	0	0	138	45	0	84	109	121	1	2	58	0	0	557
8:00	0	0	0	0	0	121	35	0	60	72	69	0	6	38	0	0	401
8:15	0	0	0	2	0	130	31	0	41	68	75	2	2	36	0	0	383
8:30	0	0	0	0	0	121	35	0	60	72	72	0	1	42	0	0	403
8:45	0	0	0	0	0	154	33	0	57	78	84	1	3	45	0	0	454
9:00	0	0	0	0	0	150	26	0	54	65	62	2	3	30	0	0	390
9:15	0	0	0	1	0	118	35	0	45	60	59	0	1	54	0	0	372
9:30	0	0	0	0	0	122	44	0	47	56	61	0	5	45	0	0	380
9:45	0	0	0	0	0	117	44	0	63	83	61	1	4	43	0	0	415
10:00	0	0	0	0	0	124	32	0	53	71	56	0	4	57	0	0	397
10:15	0	0	0	0	0	139	40	0	41	65	71	1	1	53	0	0	410
10:30	0	0	0	0	0	143	28	0	54	68	63	0	3	68	0	0	427
10:45	0	0	0	0	0	128	34	0	62	60	75	0	4	58	0	0	421
11:00	0	0	0	0	0	133	34	0	56	54	72	0	9	52	0	0	410
11:15	0	0	0	1	0	137	33	0	50	91	110	0	8	74	0	0	503
11:30	0	0	0	1	0	144	39	0	78	70	69	3	14	79	0	0	493
11:45	0	0	0	0	0	176	56	0	76	78	111	3	10	91	0	0	598
12:00	0	0	0	0	0	169	51	0	65	74	100	0	17	75	0	0	551
12:15	0	0	0	0	0	179	57	2	90	86	89	2	2	83	0	0	586
12:30	0	0	0	0	0	174	49	0	77	81	89	4	6	97	0	0	573
12:45	0	0	0	0	0	160	46	0	77	97	82	0	6	72	0	0	540
13:00	0	0	0	0	0	165	48	0	80	95	89	1	11	63	0	0	551
13:15	0	0	0	0	0	138	35	0	69	92	79	1	7	50	0	0	470
13:30	0	0	0	0	0	162	48	0	72	66	63	1	7	73	0	0	491
13:45	0	0	0	0	0	160	41	0	67	89	103	0	6	61	0	0	527
14:00	0	0	0	0	0	146	41	0	69	87	103	1	10	71	0	0	527
14:15	0	0	0	0	0	142	63	0	72	76	99	19	4	74	0	0	530
14:30	0	0	0	0	0	141	43	0	71	93	108	0	10	92	0	0	558
14:45	0	0	0	1	0	138	60	0	67	90	110	19	6	70	0	0	541
15:00	0	0	0	0	0	174	41	0	71	77	99	0	21	76	0	0	559
15:15	0	0	0	0	0	149	65	0	65	90	102	2	13	91	0	0	575
15:30	0	0	0	1	0	170	46	0	60	120	112	0	24	87	0	0	619
15:45	0	0	0	0	0	158	58	0	89	125	121	0	17	89	0	0	657
16:00	0	0	0	0	0	213	54	0	93	114	109	1	17	119	0	0	719
16:15	0	0	0	1	0	206	63	0	92	100	108	0	36	132	0	0	737
16:30	0	0	0	1	0	200	58	0	84	108	127	0	25	89	0	0	691
16:45	0	0	0	1	0	213	61	0	65	108	125	0	24	110	0	0	706
17:00	0	0	0	1	0	227	52	0	70	121	142	0	34	123	0	0	769
17:15	0	0	0	0	0	179	60	0	93	113	134	0	31	122	0	0	732
17:30	0	0	0	0	0	145	63	0	73	100	116	0	13	91	0	0	601
17:45	0	0	0	0	0	123	49	0	66	91	109	0	13	91	0	0	542
18:00	0	0	0	1	0	140	49	0	71	71	99	4	13	77	0	0	520
18:15	0	0	0	0	0	117	48	0	44	66	88	0	12	78	0	0	453
18:30	0	0	0	0	0	115	31	0	55	68	66	1	6	57	0	0	398
18:45	0	0	0	0	0	132	35	0	50	66	77	1	5	67	0	0	432
Total	0	0	0	13	0	7509	2176	2	3210	4123	4601	77	490	3517	0	0	25626
Cars+	0	0	0	7	0	7263	2135	2	3136	4036	4401	49	420	3472	0	0	24863
Trucks	0	0	0	6	0	246	41	0	74	87	200	28	70	45	0	0	763
% Trucks	0.0	0.0	0.0	46.2	0.0	3.3	1.9	0.0	2.3	2.1	4.3	36.4	14.3	1.3	0.0	0.0	
	0.0				3.0				3.0				2.9				3.0

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	0	0	0	0	63	15	0	7	18	34	0	0	15	0	0	152
6:15	0	0	0	0	0	55	10	0	15	33	45	0	0	18	0	0	176
6:30	0	0	0	0	0	88	18	0	28	38	65	0	0	24	0	0	261
6:45	0	0	0	0	0	97	23	0	37	51	85	0	0	28	0	0	321
7:00	0	0	0	0	0	89	21	0	34	37	52	0	2	37	0	0	272
7:15	0	0	0	0	0	114	15	0	40	70	76	0	1	30	0	0	346
7:30	0	0	0	0	0	139	23	0	41	78	83	0	1	54	0	0	419
7:45	0	0	0	0	0	137	45	0	83	108	116	0	2	55	0	0	546
8:00	0	0	0	0	0	116	35	0	58	71	64	0	3	38	0	0	385
8:15	0	0	0	1	0	124	31	0	40	67	67	0	2	34	0	0	365
8:30	0	0	0	0	0	115	35	0	58	71	69	0	0	41	0	0	389
8:45	0	0	0	0	0	143	32	0	56	77	81	0	2	44	0	0	435
9:00	0	0	0	0	0	146	23	0	53	65	57	1	2	30	0	0	376
9:15	0	0	0	1	0	114	34	0	43	60	52	0	1	52	0	0	356
9:30	0	0	0	0	0	120	44	0	44	55	58	0	3	44	0	0	368
9:45	0	0	0	0	0	110	42	0	60	81	61	0	2	42	0	0	398
10:00	0	0	0	0	0	116	31	0	53	71	52	0	3	56	0	0	382
10:15	0	0	0	0	0	137	40	0	37	64	71	1	1	51	0	0	401
10:30	0	0	0	0	0	140	25	0	52	67	54	0	2	68	0	0	408
10:45	0	0	0	0	0	120	33	0	61	59	71	0	3	56	0	0	403
11:00	0	0	0	0	0	121	33	0	55	54	66	0	8	52	0	0	389
11:15	0	0	0	0	0	133	32	0	48	91	104	0	8	71	0	0	487
11:30	0	0	0	1	0	139	39	0	77	70	67	2	13	77	0	0	482
11:45	0	0	0	0	0	171	56	0	73	75	107	0	9	89	0	0	580
12:00	0	0	0	0	0	167	50	0	65	72	95	0	15	75	0	0	539
12:15	0	0	0	0	0	172	56	2	88	84	87	2	2	83	0	0	572
12:30	0	0	0	0	0	169	49	0	77	78	86	3	5	96	0	0	560
12:45	0	0	0	0	0	156	45	0	75	95	76	0	4	71	0	0	522
13:00	0	0	0	0	0	159	47	0	78	93	85	1	9	63	0	0	534
13:15	0	0	0	0	0	132	34	0	65	90	68	0	7	49	0	0	445
13:30	0	0	0	0	0	158	47	0	70	65	61	0	6	72	0	0	479
13:45	0	0	0	0	0	147	40	0	65	87	101	0	4	60	0	0	504
14:00	0	0	0	0	0	146	40	0	69	85	95	0	9	71	0	0	515
14:15	0	0	0	0	0	136	63	0	69	75	96	19	3	74	0	0	516
14:30	0	0	0	0	0	130	43	0	70	93	102	0	8	91	0	0	537
14:45	0	0	0	1	0	135	59	0	66	89	104	17	5	70	0	0	528
15:00	0	0	0	0	0	167	41	0	70	75	90	0	20	76	0	0	539
15:15	0	0	0	0	0	143	65	0	64	88	98	1	10	89	0	0	557
15:30	0	0	0	0	0	164	46	0	58	116	104	0	23	86	0	0	597
15:45	0	0	0	0	0	154	58	0	87	120	118	0	15	89	0	0	641
16:00	0	0	0	0	0	206	54	0	93	112	104	0	16	118	0	0	703
16:15	0	0	0	1	0	203	62	0	90	97	105	0	33	132	0	0	722
16:30	0	0	0	0	0	199	58	0	84	106	125	0	25	87	0	0	684
16:45	0	0	0	1	0	210	60	0	64	105	122	0	21	110	0	0	692
17:00	0	0	0	0	0	224	51	0	70	119	139	0	32	122	0	0	757
17:15	0	0	0	0	0	176	60	0	92	110	133	0	28	121	0	0	720
17:30	0	0	0	0	0	143	63	0	73	99	116	0	12	91	0	0	597
17:45	0	0	0	0	0	122	48	0	65	88	107	0	11	91	0	0	532
18:00	0	0	0	1	0	138	47	0	70	69	99	1	12	77	0	0	512
18:15	0	0	0	0	0	115	48	0	43	63	87	0	9	78	0	0	443
18:30	0	0	0	0	0	114	31	0	54	68	66	1	6	57	0	0	396
18:45	0	0	0	0	0	131	35	0	49	64	75	0	2	67	0	0	423
Total	0	0	0	7	0	7263	2135	2	3136	4036	4401	49	420	3472	0	0	24863

Location: 37th Street NW at NB US 52 Ramp
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	N/A				37th Street				NB US 52 Ramp				37th Street				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	0	5	0	0	1	3	3	0	3	1	0	0	16
6:15	0	0	0	1	0	5	1	0	0	0	1	0	0	1	0	0	8
6:30	0	0	0	0	0	7	7	0	3	3	2	1	2	0	0	0	24
6:45	0	0	0	0	0	3	1	0	2	1	6	2	1	1	0	0	15
7:00	0	0	0	0	0	7	1	0	1	4	3	2	2	3	0	0	21
7:15	0	0	0	0	0	1	1	0	1	1	4	1	0	1	0	0	9
7:30	0	0	0	0	0	6	1	0	2	2	3	0	2	1	0	0	17
7:45	0	0	0	0	0	1	0	0	1	1	5	1	0	3	0	0	11
8:00	0	0	0	0	0	5	0	0	2	1	5	0	3	0	0	0	16
8:15	0	0	0	1	0	6	0	0	1	1	8	2	0	2	0	0	18
8:30	0	0	0	0	0	6	0	0	2	1	3	0	1	1	0	0	14
8:45	0	0	0	0	0	11	1	0	1	1	3	1	1	1	0	0	19
9:00	0	0	0	0	0	4	3	0	1	0	5	1	1	0	0	0	14
9:15	0	0	0	0	0	4	1	0	2	0	7	0	0	2	0	0	16
9:30	0	0	0	0	0	2	0	0	3	1	3	0	2	1	0	0	12
9:45	0	0	0	0	0	7	2	0	3	2	0	1	2	1	0	0	17
10:00	0	0	0	0	0	8	1	0	0	0	4	0	1	1	0	0	15
10:15	0	0	0	0	0	2	0	0	4	1	0	0	0	2	0	0	9
10:30	0	0	0	0	0	3	3	0	2	1	9	0	1	0	0	0	19
10:45	0	0	0	0	0	8	1	0	1	1	4	0	1	2	0	0	18
11:00	0	0	0	0	0	12	1	0	1	0	6	0	1	0	0	0	21
11:15	0	0	0	1	0	4	1	0	2	0	6	0	0	3	0	0	16
11:30	0	0	0	0	0	5	0	0	1	0	2	1	1	2	0	0	11
11:45	0	0	0	0	0	5	0	0	3	3	4	3	1	2	0	0	18
12:00	0	0	0	0	0	2	1	0	0	2	5	0	2	0	0	0	12
12:15	0	0	0	0	0	7	1	0	2	2	2	0	0	0	0	0	14
12:30	0	0	0	0	0	5	0	0	0	3	3	1	1	1	0	0	13
12:45	0	0	0	0	0	4	1	0	2	2	6	0	2	1	0	0	18
13:00	0	0	0	0	0	6	1	0	2	2	4	0	2	0	0	0	17
13:15	0	0	0	0	0	6	1	0	4	2	11	1	0	1	0	0	25
13:30	0	0	0	0	0	4	1	0	2	1	2	1	1	1	0	0	12
13:45	0	0	0	0	0	13	1	0	2	2	2	0	2	1	0	0	23
14:00	0	0	0	0	0	0	1	0	0	2	8	1	1	0	0	0	12
14:15	0	0	0	0	0	6	0	0	3	1	3	0	1	0	0	0	14
14:30	0	0	0	0	0	11	0	0	1	0	6	0	2	1	0	0	21
14:45	0	0	0	0	0	3	1	0	1	1	6	2	1	0	0	0	13
15:00	0	0	0	0	0	7	0	0	1	2	9	0	1	0	0	0	20
15:15	0	0	0	0	0	6	0	0	1	2	4	1	3	2	0	0	18
15:30	0	0	0	1	0	6	0	0	2	4	8	0	1	1	0	0	22
15:45	0	0	0	0	0	4	0	0	2	5	3	0	2	0	0	0	16
16:00	0	0	0	0	0	7	0	0	0	2	5	1	1	1	0	0	16
16:15	0	0	0	0	0	3	1	0	2	3	3	0	3	0	0	0	15
16:30	0	0	0	1	0	1	0	0	0	2	2	0	0	2	0	0	7
16:45	0	0	0	0	0	3	1	0	1	3	3	0	3	0	0	0	14
17:00	0	0	0	1	0	3	1	0	0	2	3	0	2	1	0	0	12
17:15	0	0	0	0	0	3	0	0	1	3	1	0	3	1	0	0	12
17:30	0	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	4
17:45	0	0	0	0	0	1	1	0	1	3	2	0	2	0	0	0	10
18:00	0	0	0	0	0	2	2	0	1	2	0	3	1	0	0	0	8
18:15	0	0	0	0	0	2	0	0	1	3	1	0	3	0	0	0	10
18:30	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
18:45	0	0	0	0	0	1	0	0	1	2	2	1	3	0	0	0	9
Total	0	0	0	6	0	246	41	0	74	87	200	28	70	45	0	0	763

Location: 37th Street NW at 21st Avenue NWE Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	21st Avenue NW				37th St NW				E Frontage Rd				37th St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	1	0	0	1	79	2	0	3	1	1	0	0	49	4	0	141
6:15	1	0	0	0	6	73	1	0	0	1	4	0	0	63	3	1	152
6:30	0	1	2	0	2	105	1	0	5	0	2	1	0	84	5	0	207
6:45	1	1	1	0	5	117	1	0	5	0	1	1	0	117	4	0	253
7:00	0	1	0	0	3	112	1	0	7	2	1	1	1	90	4	0	222
7:15	1	1	0	0	2	127	4	0	6	1	5	1	5	98	7	0	257
7:30	3	2	1	1	5	159	4	0	10	0	3	0	4	132	7	0	330
7:45	4	3	1	0	5	166	7	0	13	3	3	0	5	163	9	0	382
8:00	5	1	2	0	8	154	5	0	7	3	4	1	4	98	4	0	295
8:15	3	2	2	1	7	147	6	1	6	3	4	1	1	106	6	1	293
8:30	4	1	3	0	5	147	5	1	10	4	2	0	1	106	6	0	294
8:45	4	5	2	0	5	179	4	0	6	2	3	1	3	118	8	1	339
9:00	5	2	7	0	6	167	9	0	9	7	6	0	4	77	8	1	307
9:15	7	6	7	0	5	135	10	0	8	1	5	0	3	97	10	1	294
9:30	4	6	4	0	6	150	11	0	10	2	2	0	8	87	7	1	297
9:45	4	8	6	0	8	155	8	0	7	5	4	0	4	84	12	0	305
10:00	8	6	4	0	8	137	16	0	13	4	11	0	2	96	10	0	315
10:15	8	2	9	0	6	152	10	0	19	3	2	0	6	107	9	0	333
10:30	8	2	20	0	8	140	10	0	12	10	5	0	8	99	12	0	334
10:45	7	5	7	0	9	138	21	1	18	4	3	1	7	111	9	0	339
11:00	11	9	13	0	10	142	6	0	9	6	10	0	3	98	16	0	333
11:15	8	11	13	0	13	144	16	0	17	13	10	1	9	144	18	1	416
11:30	10	10	15	0	10	157	9	0	21	4	13	0	6	125	9	0	389
11:45	14	9	9	0	14	190	18	3	27	12	10	0	6	152	29	0	490
12:00	9	19	19	0	23	166	15	0	31	6	15	0	3	149	13	0	468
12:15	8	13	12	2	22	189	12	1	38	10	16	0	5	132	16	0	473
12:30	9	11	6	0	10	191	18	0	32	10	11	0	6	147	13	0	464
12:45	10	5	13	0	6	179	13	0	20	9	13	0	8	133	10	1	419
13:00	13	10	10	0	11	171	8	0	28	13	14	0	9	126	18	0	431
13:15	11	16	13	0	11	130	16	0	29	11	14	0	9	96	18	0	374
13:30	4	2	14	0	12	174	11	0	16	9	11	1	9	108	15	1	385
13:45	8	8	8	0	5	176	12	2	21	10	12	0	12	124	18	0	414
14:00	15	8	17	0	13	153	19	1	27	13	10	0	6	137	15	0	433
14:15	17	10	11	0	9	160	15	0	24	13	10	0	8	146	19	0	442
14:30	20	8	16	0	4	152	9	1	19	13	8	0	13	167	9	0	438
14:45	13	11	10	1	11	168	13	1	21	10	17	3	7	151	19	1	451
15:00	11	11	17	0	15	174	19	0	22	12	9	0	8	150	13	0	461
15:15	10	8	12	0	7	184	14	0	26	9	8	1	6	164	18	0	466
15:30	13	12	12	1	9	188	18	0	17	12	9	0	10	174	13	0	487
15:45	12	9	16	0	10	191	9	0	18	17	15	1	3	180	19	0	499
16:00	13	12	17	0	9	225	13	0	33	12	13	2	6	194	20	0	567
16:15	8	16	17	0	13	216	13	0	20	5	12	1	3	195	30	0	548
16:30	8	16	22	0	19	226	9	0	29	4	26	3	9	183	15	0	566
16:45	11	9	12	0	14	228	11	1	23	17	14	1	12	204	21	0	576
17:00	15	15	22	0	21	217	7	0	33	11	21	0	8	228	22	0	620
17:15	15	16	19	0	19	207	17	0	26	9	22	1	3	222	24	0	599
17:30	10	6	10	0	10	155	12	1	28	5	13	0	10	167	17	0	443
17:45	5	11	11	0	10	130	9	0	35	11	5	0	6	171	21	2	425
18:00	7	12	14	0	11	149	5	0	23	9	12	4	9	142	16	0	409
18:15	9	8	7	0	11	136	6	0	22	7	12	2	8	132	20	0	378
18:30	3	12	6	0	7	117	9	0	25	6	8	0	6	102	15	0	316
18:45	5	9	11	0	12	130	2	0	22	9	15	1	8	122	14	0	359
Total	412	398	502	6	491	8254	519	14	956	373	479	30	300	6847	697	12	20228
Cars+	411	398	499	3	489	7982	519	8	950	372	468	7	299	6611	693	8	19691
Trucks	1	0	3	3	2	272	0	6	6	1	11	23	1	236	4	4	537
% Trucks	0.2	0.0	0.6	50.0	0.4	3.3	0.0	42.9	0.6	0.3	2.3	76.7	0.3	3.4	0.6	33.3	
	0.3				3.0				1.0				3.1				2.7

Location: 37th Street NW at 21st Avenue NWE Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	21st Avenue NW				37th St NW				E Frontage Rd				37th St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	1	0	0	1	74	2	0	3	1	1	0	0	46	3	0	132
6:15	1	0	0	0	6	67	1	0	0	1	4	0	0	61	3	0	144
6:30	0	1	2	0	2	98	1	0	3	0	2	0	0	82	5	0	196
6:45	1	1	1	0	5	113	1	0	5	0	1	0	0	110	4	0	242
7:00	0	1	0	0	3	104	1	0	7	2	1	0	1	84	4	0	208
7:15	1	1	0	0	2	125	4	0	6	1	5	0	5	94	6	0	250
7:30	2	2	1	0	5	152	4	0	10	0	2	0	4	129	7	0	318
7:45	4	3	1	0	5	164	7	0	13	3	3	0	5	154	9	0	371
8:00	5	1	2	0	8	149	5	0	7	3	4	0	4	93	4	0	285
8:15	3	2	2	0	7	141	6	0	6	3	3	1	1	96	6	1	276
8:30	4	1	3	0	5	140	5	0	10	4	2	0	1	102	6	0	283
8:45	4	5	2	0	5	168	4	0	6	2	2	0	3	115	8	0	324
9:00	5	2	7	0	6	160	9	0	9	6	6	0	4	72	8	1	294
9:15	7	6	7	0	5	130	10	0	8	1	5	0	3	89	10	1	281
9:30	4	6	4	0	6	148	11	0	10	2	1	0	8	84	7	0	291
9:45	4	8	6	0	7	146	8	0	7	5	4	0	4	83	12	0	294
10:00	8	6	4	0	8	128	16	0	13	4	10	0	2	91	10	0	300
10:15	8	2	9	0	6	150	10	0	19	3	2	0	6	105	9	0	329
10:30	8	2	20	0	8	135	10	0	11	10	5	0	8	91	12	0	320
10:45	7	5	6	0	9	130	21	1	18	4	3	1	6	104	9	0	322
11:00	11	9	12	0	10	130	6	0	9	6	10	0	3	94	16	0	316
11:15	8	11	13	0	13	139	16	0	17	13	10	1	9	134	18	1	401
11:30	10	10	15	0	10	152	9	0	21	4	13	0	6	121	9	0	380
11:45	14	9	9	0	14	184	18	3	27	12	10	0	6	147	29	0	479
12:00	9	19	19	0	23	163	15	0	31	6	14	0	3	144	13	0	459
12:15	8	13	12	2	22	181	12	0	38	10	16	0	5	130	16	0	463
12:30	9	11	6	0	10	186	18	0	32	10	11	0	6	143	13	0	455
12:45	10	5	13	0	6	174	13	0	20	9	13	0	8	126	10	1	407
13:00	13	10	10	0	11	165	8	0	27	13	14	0	9	122	18	0	420
13:15	11	16	13	0	11	123	16	0	29	11	13	0	9	86	17	0	355
13:30	4	2	14	0	12	169	11	0	16	9	10	0	9	104	15	1	375
13:45	8	8	8	0	5	163	12	0	20	10	12	0	12	121	18	0	397
14:00	15	8	17	0	13	152	19	1	27	13	10	0	6	130	15	0	425
14:15	17	10	11	0	9	154	15	0	24	13	10	0	8	142	19	0	432
14:30	20	8	16	0	4	141	9	0	19	13	8	0	13	161	9	0	421
14:45	13	11	10	1	11	165	13	1	21	10	17	0	7	146	19	0	443
15:00	11	11	17	0	15	167	19	0	22	12	9	0	8	140	13	0	444
15:15	10	8	12	0	7	178	14	0	26	9	8	0	6	161	17	0	456
15:30	13	12	12	0	9	183	18	0	17	12	9	0	10	165	13	0	473
15:45	12	9	16	0	10	186	9	0	18	17	15	0	3	177	19	0	491
16:00	13	12	17	0	9	218	13	0	33	12	13	0	6	188	20	0	554
16:15	8	16	17	0	13	213	13	0	20	5	12	0	3	192	30	0	542
16:30	8	16	22	0	19	225	9	0	29	4	26	1	9	179	15	0	561
16:45	11	9	12	0	14	223	11	1	23	17	13	0	12	201	21	0	567
17:00	15	15	22	0	21	214	7	0	33	11	19	0	8	224	22	0	611
17:15	15	16	19	0	18	205	17	0	26	9	22	0	3	220	24	0	594
17:30	10	6	10	0	10	153	12	1	28	5	13	0	10	165	17	0	439
17:45	5	11	11	0	10	129	9	0	34	11	5	0	6	169	21	2	421
18:00	7	12	13	0	11	146	5	0	23	9	12	1	9	142	16	0	405
18:15	9	8	7	0	11	134	6	0	22	7	12	2	8	131	20	0	375
18:30	3	12	6	0	7	116	9	0	25	6	8	0	6	101	15	0	314
18:45	5	9	11	0	12	129	2	0	22	9	15	0	8	120	14	0	356
Total	411	398	499	3	489	7982	519	8	950	372	468	7	299	6611	693	8	19691

Location: 37th Street NW at 21st Avenue NWE Frontage Road
Count Date: 6/25/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	21st Avenue NW				37th St NW				E Frontage Rd				37th St NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	0	5	0	0	0	0	0	0	0	3	1	0	9
6:15	0	0	0	0	0	6	0	0	0	0	0	0	0	2	0	1	8
6:30	0	0	0	0	0	7	0	0	2	0	0	1	0	2	0	0	11
6:45	0	0	0	0	0	4	0	0	0	0	0	1	0	7	0	0	11
7:00	0	0	0	0	0	8	0	0	0	0	0	1	0	6	0	0	14
7:15	0	0	0	0	0	2	0	0	0	0	0	1	0	4	1	0	7
7:30	1	0	0	1	0	7	0	0	0	0	1	0	0	3	0	0	12
7:45	0	0	0	0	0	2	0	0	0	0	0	0	0	9	0	0	11
8:00	0	0	0	0	0	5	0	0	0	0	0	1	0	5	0	0	10
8:15	0	0	0	1	0	6	0	1	0	0	1	0	0	10	0	0	17
8:30	0	0	0	0	0	7	0	1	0	0	0	0	0	4	0	0	11
8:45	0	0	0	0	0	11	0	0	0	0	1	1	0	3	0	1	15
9:00	0	0	0	0	0	7	0	0	0	1	0	0	0	5	0	0	13
9:15	0	0	0	0	0	5	0	0	0	0	0	0	0	8	0	0	13
9:30	0	0	0	0	0	2	0	0	0	0	1	0	0	3	0	1	6
9:45	0	0	0	0	1	9	0	0	0	0	0	0	0	1	0	0	11
10:00	0	0	0	0	0	9	0	0	0	0	1	0	0	5	0	0	15
10:15	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
10:30	0	0	0	0	0	5	0	0	1	0	0	0	0	8	0	0	14
10:45	0	0	1	0	0	8	0	0	0	0	0	0	1	7	0	0	17
11:00	0	0	1	0	0	12	0	0	0	0	0	0	0	4	0	0	17
11:15	0	0	0	0	0	5	0	0	0	0	0	0	0	10	0	0	15
11:30	0	0	0	0	0	5	0	0	0	0	0	0	0	4	0	0	9
11:45	0	0	0	0	0	6	0	0	0	0	0	0	0	5	0	0	11
12:00	0	0	0	0	0	3	0	0	0	0	1	0	0	5	0	0	9
12:15	0	0	0	0	0	8	0	1	0	0	0	0	0	2	0	0	10
12:30	0	0	0	0	0	5	0	0	0	0	0	0	0	4	0	0	9
12:45	0	0	0	0	0	5	0	0	0	0	0	0	0	7	0	0	12
13:00	0	0	0	0	0	6	0	0	1	0	0	0	0	4	0	0	11
13:15	0	0	0	0	0	7	0	0	0	0	1	0	0	10	1	0	19
13:30	0	0	0	0	0	5	0	0	0	0	1	1	0	4	0	0	10
13:45	0	0	0	0	0	13	0	2	1	0	0	0	0	3	0	0	17
14:00	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0	8
14:15	0	0	0	0	0	6	0	0	0	0	0	0	0	4	0	0	10
14:30	0	0	0	0	0	11	0	1	0	0	0	0	0	6	0	0	17
14:45	0	0	0	0	0	3	0	0	0	0	0	3	0	5	0	1	8
15:00	0	0	0	0	0	7	0	0	0	0	0	0	0	10	0	0	17
15:15	0	0	0	0	0	6	0	0	0	0	0	1	0	3	1	0	10
15:30	0	0	0	1	0	5	0	0	0	0	0	0	0	9	0	0	14
15:45	0	0	0	0	0	5	0	0	0	0	0	1	0	3	0	0	8
16:00	0	0	0	0	0	7	0	0	0	0	0	2	0	6	0	0	13
16:15	0	0	0	0	0	3	0	0	0	0	0	1	0	3	0	0	6
16:30	0	0	0	0	0	1	0	0	0	0	0	2	0	4	0	0	5
16:45	0	0	0	0	0	5	0	0	0	0	1	1	0	3	0	0	9
17:00	0	0	0	0	0	3	0	0	0	0	2	0	0	4	0	0	9
17:15	0	0	0	0	1	2	0	0	0	0	0	1	0	2	0	0	5
17:30	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	4
17:45	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0	4
18:00	0	0	1	0	0	3	0	0	0	0	0	3	0	0	0	0	4
18:15	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
18:30	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
18:45	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	3
Total	1	0	3	3	2	272	0	6	6	1	11	23	1	236	4	4	537

Location: Marketplace Drive at East IBM Access
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	Marketplace Drive				N/A				Marketplace Drive				East IBM Access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	0	5	0	0	0	0	0	0	0	4	0	0	0	0	0	0	9
6:15	0	10	0	0	0	0	0	0	0	5	0	0	0	0	0	0	15
6:30	0	12	0	0	0	0	0	0	0	6	0	0	0	0	0	0	18
6:45	0	13	0	0	0	0	0	0	0	11	0	0	0	0	0	0	24
7:00	0	12	0	0	0	0	0	0	0	15	0	0	0	0	0	0	27
7:15	0	11	0	0	0	0	0	0	0	18	0	0	0	0	0	0	29
7:30	0	21	0	0	0	0	0	0	0	20	0	0	0	0	0	0	41
7:45	0	19	0	0	0	0	0	0	0	22	0	0	0	0	0	1	41
8:00	0	21	0	0	0	0	0	0	0	22	0	0	0	0	0	0	43
8:15	0	30	0	0	0	0	0	0	0	22	0	0	0	0	0	0	52
8:30	0	23	0	0	0	0	0	0	0	18	0	0	0	0	0	0	41
8:45	0	27	0	0	0	0	0	0	0	25	0	0	0	0	0	0	52
9:00	0	22	0	0	0	0	0	0	0	25	0	0	0	0	0	1	47
9:15	0	27	0	0	0	0	0	0	0	20	0	0	0	0	0	1	47
9:30	0	25	0	0	0	0	0	0	0	25	0	0	0	0	0	2	50
9:45	0	27	0	0	0	0	0	0	0	29	0	0	0	0	0	1	56
10:00	0	40	0	0	0	0	0	0	0	35	0	0	0	0	0	3	75
10:15	0	46	0	0	0	0	0	0	0	29	0	0	0	0	0	2	75
10:30	0	28	0	0	0	0	0	0	0	25	0	0	0	0	0	1	53
10:45	0	48	1	0	0	0	0	0	0	32	0	0	1	0	0	2	82
11:00	0	40	0	0	0	0	0	0	0	42	0	0	0	0	0	1	82
11:15	0	45	0	0	0	0	0	0	0	31	0	0	0	0	0	1	76
11:30	0	49	0	0	0	0	0	0	0	28	0	0	0	0	0	1	77
11:45	0	53	1	0	0	0	0	0	0	38	0	0	0	0	1	1	93
12:00	0	59	0	0	0	0	0	0	0	39	0	0	0	0	0	2	98
12:15	0	50	2	0	0	0	0	0	0	48	0	0	0	0	2	1	102
12:30	0	57	0	0	0	0	0	0	0	50	0	0	0	0	0	0	107
12:45	0	67	0	0	0	0	0	0	0	44	0	0	0	0	0	1	111
13:00	0	57	0	0	0	0	0	0	0	39	0	0	0	0	0	1	96
13:15	0	52	1	0	0	0	0	0	0	35	0	0	0	0	1	0	89
13:30	0	65	1	0	0	0	0	0	0	27	0	0	0	0	0	1	93
13:45	0	56	2	0	0	0	0	0	0	36	0	0	0	0	1	3	95
14:00	0	42	0	0	0	0	0	0	0	30	0	0	0	0	0	0	72
14:15	0	40	0	0	0	0	0	0	0	36	0	0	0	0	0	4	76
14:30	0	55	1	0	0	0	0	0	0	33	0	0	0	0	1	4	90
14:45	0	42	0	0	0	0	0	0	0	31	0	0	1	0	0	0	74
15:00	0	61	0	0	0	0	0	0	0	45	0	0	0	0	0	3	106
15:15	0	50	0	0	0	0	0	0	0	41	0	0	0	0	0	1	91
15:30	0	55	0	0	0	0	0	0	0	28	0	0	0	0	0	0	83
15:45	0	54	0	0	0	0	0	0	0	40	0	0	0	0	0	1	94
16:00	0	67	0	0	0	0	0	0	0	61	0	0	0	0	0	0	128
16:15	0	58	1	0	0	0	0	0	0	46	0	0	0	0	1	0	106
16:30	0	65	0	0	0	0	0	0	0	54	0	0	0	0	0	0	119
16:45	0	69	1	0	0	0	0	0	0	48	0	0	1	0	0	0	119
17:00	0	70	0	0	0	0	0	0	0	55	0	0	0	0	0	1	125
17:15	0	70	0	0	0	0	0	0	0	55	0	0	0	0	0	0	125
17:30	0	61	0	0	0	0	0	0	0	45	0	0	0	0	0	0	106
17:45	0	52	0	0	0	0	0	0	0	42	0	0	0	0	0	0	94
18:00	0	82	0	0	0	0	0	0	0	38	0	0	0	0	0	2	120
18:15	0	62	0	0	0	0	0	0	0	42	0	0	0	0	0	0	104
18:30	0	65	0	0	0	0	0	0	0	34	0	0	0	0	0	0	99
18:45	0	39	0	0	0	0	0	0	0	28	0	0	0	0	0	1	67
Total	0	2276	11	0	0	0	0	0	0	1697	0	0	3	0	7	44	3994
Cars+	0	2264	11	0	0	0	0	0	0	1689	0	0	3	0	7	24	3974
Trucks	0	12	0	0	0	0	0	0	0	8	0	0	0	0	0	20	20
% Trucks	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	45.5	
	0.5				0.0				0.5				0.0				0.5

Location: Marketplace Drive at East IBM Access
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	Marketplace Drive				N/A				Marketplace Drive				East IBM Access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	0	5	0	0	0	0	0	0	0	4	0	0	0	0	0	0	9
6:15	0	10	0	0	0	0	0	0	0	5	0	0	0	0	0	0	15
6:30	0	12	0	0	0	0	0	0	0	6	0	0	0	0	0	0	18
6:45	0	12	0	0	0	0	0	0	0	11	0	0	0	0	0	0	23
7:00	0	12	0	0	0	0	0	0	0	15	0	0	0	0	0	0	27
7:15	0	11	0	0	0	0	0	0	0	18	0	0	0	0	0	0	29
7:30	0	20	0	0	0	0	0	0	0	20	0	0	0	0	0	0	40
7:45	0	18	0	0	0	0	0	0	0	22	0	0	0	0	0	0	40
8:00	0	21	0	0	0	0	0	0	0	21	0	0	0	0	0	0	42
8:15	0	30	0	0	0	0	0	0	0	22	0	0	0	0	0	0	52
8:30	0	23	0	0	0	0	0	0	0	18	0	0	0	0	0	0	41
8:45	0	27	0	0	0	0	0	0	0	25	0	0	0	0	0	0	52
9:00	0	21	0	0	0	0	0	0	0	25	0	0	0	0	0	0	46
9:15	0	26	0	0	0	0	0	0	0	20	0	0	0	0	0	1	46
9:30	0	25	0	0	0	0	0	0	0	25	0	0	0	0	0	2	50
9:45	0	27	0	0	0	0	0	0	0	29	0	0	0	0	0	1	56
10:00	0	40	0	0	0	0	0	0	0	35	0	0	0	0	0	2	75
10:15	0	46	0	0	0	0	0	0	0	29	0	0	0	0	0	1	75
10:30	0	28	0	0	0	0	0	0	0	25	0	0	0	0	0	0	53
10:45	0	48	1	0	0	0	0	0	0	32	0	0	1	0	0	1	82
11:00	0	40	0	0	0	0	0	0	0	41	0	0	0	0	0	1	81
11:15	0	44	0	0	0	0	0	0	0	31	0	0	0	0	0	0	75
11:30	0	49	0	0	0	0	0	0	0	28	0	0	0	0	0	0	77
11:45	0	53	1	0	0	0	0	0	0	38	0	0	0	0	1	0	93
12:00	0	59	0	0	0	0	0	0	0	39	0	0	0	0	0	0	98
12:15	0	50	2	0	0	0	0	0	0	46	0	0	0	0	2	0	100
12:30	0	55	0	0	0	0	0	0	0	50	0	0	0	0	0	0	105
12:45	0	67	0	0	0	0	0	0	0	43	0	0	0	0	0	0	110
13:00	0	56	0	0	0	0	0	0	0	39	0	0	0	0	0	1	95
13:15	0	52	1	0	0	0	0	0	0	35	0	0	0	0	1	0	89
13:30	0	64	1	0	0	0	0	0	0	27	0	0	0	0	0	1	92
13:45	0	56	2	0	0	0	0	0	0	36	0	0	0	0	1	3	95
14:00	0	42	0	0	0	0	0	0	0	29	0	0	0	0	0	0	71
14:15	0	40	0	0	0	0	0	0	0	36	0	0	0	0	0	2	76
14:30	0	55	1	0	0	0	0	0	0	32	0	0	0	0	1	2	89
14:45	0	42	0	0	0	0	0	0	0	31	0	0	1	0	0	0	74
15:00	0	61	0	0	0	0	0	0	0	44	0	0	0	0	0	2	105
15:15	0	50	0	0	0	0	0	0	0	41	0	0	0	0	0	0	91
15:30	0	55	0	0	0	0	0	0	0	28	0	0	0	0	0	0	83
15:45	0	54	0	0	0	0	0	0	0	40	0	0	0	0	0	0	94
16:00	0	67	0	0	0	0	0	0	0	61	0	0	0	0	0	0	128
16:15	0	58	1	0	0	0	0	0	0	46	0	0	0	0	1	0	106
16:30	0	64	0	0	0	0	0	0	0	54	0	0	0	0	0	0	118
16:45	0	69	1	0	0	0	0	0	0	48	0	0	1	0	0	0	119
17:00	0	70	0	0	0	0	0	0	0	55	0	0	0	0	0	1	125
17:15	0	70	0	0	0	0	0	0	0	55	0	0	0	0	0	0	125
17:30	0	61	0	0	0	0	0	0	0	45	0	0	0	0	0	0	106
17:45	0	52	0	0	0	0	0	0	0	42	0	0	0	0	0	0	94
18:00	0	81	0	0	0	0	0	0	0	38	0	0	0	0	0	2	119
18:15	0	62	0	0	0	0	0	0	0	42	0	0	0	0	0	0	104
18:30	0	65	0	0	0	0	0	0	0	34	0	0	0	0	0	0	99
18:45	0	39	0	0	0	0	0	0	0	28	0	0	0	0	0	1	67
Total	0	2264	11	0	0	0	0	0	0	1689	0	0	3	0	7	24	3974

Location: Marketplace Drive at East IBM Access
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	Marketplace Drive				N/A				Marketplace Drive				East IBM Access				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
9:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
11:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
12:15	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	2
12:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
13:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
14:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	12	0	0	0	0	0	0	0	8	0	0	0	0	0	20	20

Location: Valleyhigh Drive NW at 31st Avenue NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	Valleyhigh Drive NW				31st Avenue NW				Valleyhigh Drive NW				N/A				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	3	27	0	0	9	0	7	1	0	35	5	0	0	0	0	0	86
6:15	4	31	0	0	16	0	8	0	0	44	4	0	0	0	0	0	107
6:30	4	38	0	0	1	0	1	0	0	36	7	0	0	0	0	0	87
6:45	6	43	0	0	3	0	14	0	0	73	5	0	0	0	0	0	144
7:00	7	56	0	0	4	0	8	0	0	69	9	0	0	0	0	0	153
7:15	8	68	0	0	5	0	10	0	0	93	10	0	0	0	0	0	194
7:30	13	74	0	0	8	0	16	0	0	80	12	0	0	0	0	0	203
7:45	14	62	0	0	8	0	17	0	0	128	17	0	0	0	0	0	246
8:00	11	54	0	0	3	0	15	0	0	80	6	0	0	0	0	0	169
8:15	15	54	0	0	9	0	13	1	0	80	19	0	0	0	0	0	190
8:30	10	60	0	0	3	0	12	0	0	61	14	0	0	0	0	0	160
8:45	8	39	0	0	6	0	14	0	0	70	15	0	0	0	0	0	152
9:00	9	48	0	0	7	0	8	0	0	51	12	0	0	0	0	0	135
9:15	5	35	0	0	3	0	3	0	0	58	14	0	0	0	0	0	118
9:30	6	41	0	0	10	0	6	0	0	45	10	0	0	0	0	0	118
9:45	3	50	0	0	10	0	6	0	0	49	2	0	0	0	0	0	120
10:00	7	43	0	0	5	0	7	0	0	51	9	0	0	0	0	1	122
10:15	9	43	0	0	8	0	10	0	0	56	7	0	0	0	0	0	133
10:30	12	50	0	0	6	0	6	0	0	40	7	0	0	0	0	0	121
10:45	8	38	0	0	9	0	9	0	0	48	7	0	0	0	0	1	119
11:00	7	53	0	0	6	0	7	0	0	51	9	0	0	0	0	0	133
11:15	13	56	0	0	6	0	9	0	0	58	6	0	0	0	0	0	148
11:30	8	65	0	0	7	0	11	0	0	49	11	0	0	0	0	0	151
11:45	11	73	0	0	12	0	18	0	0	61	6	0	0	0	0	0	181
12:00	16	60	0	0	12	0	11	0	0	75	16	0	0	0	0	0	190
12:15	10	63	0	0	14	0	15	0	0	66	10	0	0	0	0	0	178
12:30	12	50	0	0	8	0	6	0	0	49	7	0	0	0	0	0	132
12:45	7	55	0	0	13	0	13	0	0	78	13	0	0	0	0	0	179
13:00	15	58	0	1	10	0	9	0	0	72	14	0	0	0	0	0	178
13:15	3	49	0	0	5	0	11	0	0	60	3	0	0	0	0	1	131
13:30	7	61	0	0	8	0	9	0	0	65	9	0	0	0	0	0	159
13:45	8	62	0	0	7	0	11	0	0	77	9	0	0	0	0	0	174
14:00	10	70	0	0	8	0	14	0	0	63	13	0	0	0	0	1	178
14:15	13	76	0	0	5	0	7	0	0	75	9	0	0	0	0	0	185
14:30	11	62	0	0	19	0	15	0	0	70	20	0	0	0	0	0	197
14:45	4	66	0	0	15	0	15	0	0	77	4	0	0	0	0	0	181
15:00	12	79	0	0	4	0	8	1	0	79	22	0	0	0	0	0	204
15:15	7	86	0	0	5	0	20	0	0	76	5	0	0	0	0	0	199
15:30	8	73	0	0	14	0	20	0	0	87	6	0	0	0	0	0	208
15:45	22	89	0	0	11	0	11	0	0	77	13	0	0	0	0	0	223
16:00	26	128	0	0	17	0	19	0	0	81	17	0	0	0	0	0	288
16:15	9	120	0	0	13	0	15	0	0	93	11	0	0	0	0	0	261
16:30	19	100	0	0	16	0	17	0	0	97	8	0	0	0	0	0	257
16:45	20	75	0	0	13	0	19	0	0	96	10	0	0	0	0	0	233
17:00	17	114	0	0	12	0	15	0	0	94	8	0	0	0	0	0	260
17:15	8	84	0	0	8	0	13	0	0	87	10	0	0	0	0	0	210
17:30	15	76	0	0	12	0	6	0	0	70	13	0	0	0	0	0	192
17:45	4	49	0	0	11	0	9	0	0	48	5	0	0	0	0	0	126
18:00	5	48	0	0	11	0	8	0	0	50	5	0	0	0	0	0	127
18:15	3	41	0	0	8	0	4	0	0	42	5	0	0	0	0	0	103
18:30	8	51	0	0	3	0	5	0	0	32	3	0	0	0	0	0	102
18:45	1	38	0	0	4	0	2	0	0	31	2	0	0	0	0	0	78
Total	501	3184	0	1	450	0	562	3	0	3433	493	0	0	0	0	4	8623
Cars+	485	3013	0	0	432	0	538	0	0	3309	473	0	0	0	0	0	8250
Trucks	16	171	0	1	18	0	24	3	0	124	20	0	0	0	0	4	373
% Trucks	3.2	5.4	0.0	100.0	4.0	0.0	4.3	100.0	0.0	3.6	4.1	0.0	0.0	0.0	0.0	100.0	
	5.1				4.2				3.7				0.0				4.3

Location: Valleyhigh Drive NW at 31st Avenue NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	Valleyhigh Drive NW				31st Avenue NW				Valleyhigh Drive NW				N/A				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	3	26	0	0	9	0	7	0	0	35	4	0	0	0	0	0	84
6:15	4	30	0	0	15	0	8	0	0	42	4	0	0	0	0	0	103
6:30	4	36	0	0	1	0	1	0	0	36	7	0	0	0	0	0	85
6:45	6	41	0	0	2	0	14	0	0	70	4	0	0	0	0	0	137
7:00	7	53	0	0	4	0	8	0	0	67	9	0	0	0	0	0	148
7:15	8	66	0	0	5	0	10	0	0	90	10	0	0	0	0	0	189
7:30	13	71	0	0	8	0	16	0	0	76	11	0	0	0	0	0	195
7:45	14	59	0	0	8	0	17	0	0	123	17	0	0	0	0	0	238
8:00	11	51	0	0	3	0	15	0	0	78	6	0	0	0	0	0	164
8:15	14	52	0	0	9	0	13	0	0	79	18	0	0	0	0	0	185
8:30	10	55	0	0	2	0	11	0	0	57	14	0	0	0	0	0	149
8:45	8	35	0	0	5	0	13	0	0	70	15	0	0	0	0	0	146
9:00	7	37	0	0	7	0	7	0	0	45	11	0	0	0	0	0	114
9:15	5	34	0	0	3	0	2	0	0	54	14	0	0	0	0	0	112
9:30	6	38	0	0	10	0	6	0	0	42	10	0	0	0	0	0	112
9:45	2	45	0	0	10	0	5	0	0	49	2	0	0	0	0	0	113
10:00	7	40	0	0	5	0	6	0	0	49	9	0	0	0	0	0	116
10:15	9	38	0	0	7	0	9	0	0	51	7	0	0	0	0	0	121
10:30	10	46	0	0	6	0	6	0	0	36	7	0	0	0	0	0	111
10:45	8	36	0	0	9	0	9	0	0	44	7	0	0	0	0	0	113
11:00	5	47	0	0	6	0	5	0	0	50	7	0	0	0	0	0	120
11:15	13	56	0	0	6	0	8	0	0	54	5	0	0	0	0	0	142
11:30	8	59	0	0	5	0	11	0	0	49	11	0	0	0	0	0	143
11:45	11	68	0	0	12	0	17	0	0	57	6	0	0	0	0	0	171
12:00	15	56	0	0	12	0	11	0	0	71	15	0	0	0	0	0	180
12:15	10	62	0	0	13	0	14	0	0	59	9	0	0	0	0	0	167
12:30	12	45	0	0	8	0	6	0	0	45	6	0	0	0	0	0	122
12:45	7	52	0	0	12	0	12	0	0	74	11	0	0	0	0	0	168
13:00	14	53	0	0	10	0	9	0	0	65	12	0	0	0	0	0	163
13:15	3	45	0	0	4	0	11	0	0	56	3	0	0	0	0	0	122
13:30	6	57	0	0	8	0	8	0	0	65	9	0	0	0	0	0	153
13:45	8	57	0	0	7	0	10	0	0	75	8	0	0	0	0	0	165
14:00	9	66	0	0	7	0	13	0	0	59	13	0	0	0	0	0	167
14:15	13	69	0	0	3	0	6	0	0	74	9	0	0	0	0	0	174
14:30	11	60	0	0	19	0	15	0	0	69	20	0	0	0	0	0	194
14:45	3	63	0	0	15	0	13	0	0	72	4	0	0	0	0	0	170
15:00	11	74	0	0	4	0	8	0	0	78	22	0	0	0	0	0	197
15:15	7	80	0	0	5	0	20	0	0	74	5	0	0	0	0	0	191
15:30	7	71	0	0	13	0	17	0	0	86	5	0	0	0	0	0	199
15:45	22	84	0	0	11	0	11	0	0	75	13	0	0	0	0	0	216
16:00	26	128	0	0	16	0	18	0	0	81	17	0	0	0	0	0	286
16:15	9	114	0	0	13	0	15	0	0	89	11	0	0	0	0	0	251
16:30	19	96	0	0	16	0	16	0	0	97	8	0	0	0	0	0	252
16:45	20	72	0	0	13	0	19	0	0	93	9	0	0	0	0	0	226
17:00	17	113	0	0	12	0	15	0	0	93	7	0	0	0	0	0	257
17:15	7	83	0	0	7	0	13	0	0	86	9	0	0	0	0	0	205
17:30	15	73	0	0	11	0	6	0	0	69	13	0	0	0	0	0	187
17:45	4	47	0	0	10	0	9	0	0	48	5	0	0	0	0	0	123
18:00	5	47	0	0	11	0	8	0	0	49	5	0	0	0	0	0	125
18:15	3	41	0	0	8	0	4	0	0	41	5	0	0	0	0	0	102
18:30	8	48	0	0	3	0	5	0	0	32	3	0	0	0	0	0	99
18:45	1	38	0	0	4	0	2	0	0	31	2	0	0	0	0	0	78
Total	485	3013	0	0	432	0	538	0	0	3309	473	0	0	0	0	0	8250

Location: Valleyhigh Drive NW at 31st Avenue NW
Count Date: 6/27/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

	Valleyhigh Drive NW				31st Avenue NW				Valleyhigh Drive NW				N/A				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
6:15	0	1	0	0	1	0	0	0	0	2	0	0	0	0	0	0	4
6:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45	0	2	0	0	1	0	0	0	0	3	1	0	0	0	0	0	7
7:00	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
7:15	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5
7:30	0	3	0	0	0	0	0	0	0	4	1	0	0	0	0	0	8
7:45	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	8
8:00	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5
8:15	1	2	0	0	0	0	0	1	0	1	1	0	0	0	0	0	5
8:30	0	5	0	0	1	0	1	0	0	4	0	0	0	0	0	0	11
8:45	0	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	6
9:00	2	11	0	0	0	0	1	0	0	6	1	0	0	0	0	0	21
9:15	0	1	0	0	0	0	1	0	0	4	0	0	0	0	0	0	6
9:30	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6
9:45	1	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	7
10:00	0	3	0	0	0	0	1	0	0	2	0	0	0	0	0	1	6
10:15	0	5	0	0	1	0	1	0	0	5	0	0	0	0	0	0	12
10:30	2	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	10
10:45	0	2	0	0	0	0	0	0	0	4	0	0	0	0	0	1	6
11:00	2	6	0	0	0	0	2	0	0	1	2	0	0	0	0	0	13
11:15	0	0	0	0	0	0	1	0	0	4	1	0	0	0	0	0	6
11:30	0	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0	8
11:45	0	5	0	0	0	0	1	0	0	4	0	0	0	0	0	0	10
12:00	1	4	0	0	0	0	0	0	0	4	1	0	0	0	0	0	10
12:15	0	1	0	0	1	0	1	0	0	7	1	0	0	0	0	0	11
12:30	0	5	0	0	0	0	0	0	0	4	1	0	0	0	0	0	10
12:45	0	3	0	0	1	0	1	0	0	4	2	0	0	0	0	0	11
13:00	1	5	0	1	0	0	0	0	0	7	2	0	0	0	0	0	15
13:15	0	4	0	0	1	0	0	0	0	4	0	0	0	0	0	1	9
13:30	1	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6
13:45	0	5	0	0	0	0	1	0	0	2	1	0	0	0	0	0	9
14:00	1	4	0	0	1	0	1	0	0	4	0	0	0	0	0	1	11
14:15	0	7	0	0	2	0	1	0	0	1	0	0	0	0	0	0	11
14:30	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
14:45	1	3	0	0	0	0	2	0	0	5	0	0	0	0	0	0	11
15:00	1	5	0	0	0	0	0	1	0	1	0	0	0	0	0	0	7
15:15	0	6	0	0	0	0	0	0	0	2	0	0	0	0	0	0	8
15:30	1	2	0	0	1	0	3	0	0	1	1	0	0	0	0	0	9
15:45	0	5	0	0	0	0	0	0	0	2	0	0	0	0	0	0	7
16:00	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
16:15	0	6	0	0	0	0	0	0	0	4	0	0	0	0	0	0	10
16:30	0	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
16:45	0	3	0	0	0	0	0	0	0	3	1	0	0	0	0	0	7
17:00	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
17:15	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0	5
17:30	0	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	5
17:45	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
18:00	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
18:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	171	0	1	18	0	24	3	0	124	20	0	0	0	0	4	373

Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	3	1	2	0	12	75	4	0	0	1	11	0	2	43	1	0	155
6:15	12	1	1	0	19	87	3	0	1	0	4	1	0	55	0	1	183
6:30	16	4	4	0	20	97	5	0	0	1	9	1	2	89	1	1	248
6:45	11	6	0	0	29	146	6	0	2	0	4	0	0	111	0	0	315
7:00	21	3	2	0	35	94	10	0	3	1	4	0	3	90	1	0	267
7:15	17	4	1	0	27	150	8	0	0	3	8	0	6	117	3	0	344
7:30	27	9	6	0	31	206	14	0	1	4	14	0	6	184	4	0	506
7:45	27	13	9	1	49	238	15	0	2	5	18	0	5	160	1	0	542
8:00	25	5	2	0	46	225	26	0	1	1	21	0	3	126	5	0	486
8:15	13	4	4	0	16	177	12	0	3	4	18	0	4	99	0	0	354
8:30	13	7	8	0	22	126	8	0	0	2	23	0	3	109	1	0	322
8:45	13	3	5	0	34	165	12	0	1	10	12	0	9	93	5	0	362
9:00	19	2	9	0	16	155	14	0	0	4	10	0	9	118	1	1	357
9:15	16	5	4	0	20	187	20	0	2	4	28	0	6	135	5	0	432
9:30	26	5	10	0	13	108	15	0	3	5	21	0	8	91	2	0	307
9:45	15	6	12	0	19	128	16	0	1	2	11	0	9	127	3	0	349
10:00	15	5	8	0	15	113	14	0	2	2	10	1	7	92	3	1	286
10:15	21	10	7	0	14	126	17	0	0	3	12	0	10	106	0	0	326
10:30	19	1	7	0	16	112	21	0	1	10	10	0	3	109	1	0	310
10:45	20	8	6	0	29	133	22	0	0	7	18	0	15	113	2	0	373
11:00	30	8	6	0	15	139	9	0	1	11	20	0	7	115	2	0	363
11:15	17	12	14	0	30	118	11	0	1	5	13	1	7	135	5	0	368
11:30	18	11	20	0	24	111	20	0	1	6	22	0	4	128	4	0	369
11:45	34	5	8	0	30	136	18	0	2	8	23	0	12	162	5	0	443
12:00	25	13	8	0	23	144	23	0	0	8	31	0	8	149	1	0	433
12:15	30	3	15	0	19	140	14	0	4	8	23	1	11	135	3	0	405
12:30	29	10	14	0	17	137	21	0	3	10	19	0	5	128	3	0	396
12:45	39	14	10	0	28	138	13	0	1	10	16	0	15	141	4	0	429
13:00	19	11	11	0	29	131	18	0	6	4	29	0	11	126	2	0	397
13:15	27	6	12	0	17	127	21	0	1	11	28	0	9	120	1	0	380
13:30	20	12	9	0	27	111	24	0	2	11	20	0	5	130	2	0	373
13:45	29	14	11	0	29	138	26	0	3	9	25	0	7	114	3	0	408
14:00	27	10	14	0	20	131	15	0	1	11	25	0	6	150	0	0	410
14:15	41	8	14	0	24	159	20	0	5	10	28	0	5	175	5	0	494
14:30	30	5	9	0	30	123	21	0	5	11	26	0	8	156	1	0	425
14:45	41	9	13	0	40	156	25	0	1	9	32	0	5	167	4	0	502
15:00	42	14	10	0	23	166	30	0	4	11	30	0	9	189	2	0	530
15:15	50	14	9	0	26	159	28	0	1	11	24	1	6	172	1	0	501
15:30	40	10	10	0	34	207	23	0	10	20	55	0	8	161	2	0	580
15:45	38	8	12	0	27	220	26	0	1	13	35	0	16	180	2	0	578
16:00	40	12	9	0	34	213	23	0	6	14	57	0	10	249	4	0	671
16:15	50	10	7	1	41	199	35	2	2	16	49	0	13	233	5	0	660
16:30	46	11	17	0	32	207	22	0	5	14	42	0	8	225	2	0	631
16:45	39	12	13	1	29	214	31	0	5	15	47	0	10	225	5	0	645
17:00	53	14	15	0	23	194	29	0	4	12	59	0	13	198	2	0	616
17:15	41	11	12	0	22	170	24	0	4	9	44	0	3	191	1	0	532
17:30	49	10	13	1	15	155	20	0	5	5	27	0	15	197	3	0	514
17:45	41	5	8	0	26	160	22	0	5	9	23	0	13	145	6	0	463
18:00	32	9	11	0	10	100	23	0	7	6	32	0	7	141	3	0	381
18:15	29	5	9	0	18	137	20	0	1	5	19	0	5	137	2	0	387
18:30	33	6	5	0	19	127	16	0	3	8	22	0	10	113	0	0	362
18:45	18	4	7	0	15	133	18	0	2	3	23	0	7	101	2	0	333
Total	1446	408	462	4	1278	7748	951	2	125	382	1234	6	388	7255	126	4	21803
Cars+	1427	404	455	4	1204	7562	939	2	124	378	1162	6	385	7030	124	3	21194
Trucks	19	4	7	0	74	186	12	0	1	4	72	0	3	225	2	1	609
% Trucks	1.3	1.0	1.5	0.0	5.8	2.4	1.3	0.0	0.8	1.0	5.8	0.0	0.8	3.1	1.6	25.0	
	1.3				2.7				4.4				3.0				2.8

Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	3	1	2	0	11	74	4	0	0	1	8	0	2	41	1	0	148
6:15	12	1	1	0	19	85	3	0	1	0	3	1	0	50	0	1	175
6:30	16	4	4	0	19	97	5	0	0	1	7	1	2	78	1	1	234
6:45	11	6	0	0	27	144	6	0	2	0	2	0	0	94	0	0	292
7:00	21	3	2	0	34	94	9	0	3	1	4	0	3	76	1	0	251
7:15	13	4	1	0	27	148	8	0	0	3	4	0	5	108	3	0	324
7:30	27	9	6	0	29	205	14	0	1	4	13	0	6	180	3	0	497
7:45	25	13	8	1	49	234	15	0	2	5	13	0	5	158	1	0	528
8:00	25	5	2	0	45	221	26	0	1	1	15	0	3	124	5	0	473
8:15	12	3	4	0	14	175	12	0	2	4	16	0	4	97	0	0	343
8:30	13	7	8	0	21	120	8	0	0	1	20	0	3	101	1	0	303
8:45	13	3	4	0	34	161	12	0	1	9	12	0	8	89	5	0	351
9:00	19	2	8	0	13	143	14	0	0	4	8	0	9	116	1	0	337
9:15	16	5	3	0	17	156	20	0	2	4	26	0	6	133	5	0	393
9:30	25	5	10	0	11	105	14	0	3	5	19	0	8	90	2	0	297
9:45	15	6	11	0	18	124	16	0	1	2	9	0	9	124	3	0	338
10:00	15	5	8	0	14	112	14	0	2	2	9	1	7	91	3	1	282
10:15	20	10	7	0	14	124	16	0	0	2	10	0	10	105	0	0	318
10:30	19	1	7	0	13	111	21	0	1	9	9	0	3	108	1	0	303
10:45	19	8	6	0	28	131	22	0	0	7	18	0	14	112	2	0	367
11:00	28	7	5	0	15	138	9	0	1	11	17	0	7	105	2	0	345
11:15	16	12	14	0	29	116	10	0	1	5	12	1	7	129	4	0	355
11:30	18	11	20	0	22	105	20	0	1	6	21	0	4	125	4	0	357
11:45	34	5	8	0	26	131	17	0	2	8	22	0	12	161	5	0	431
12:00	25	12	8	0	22	139	23	0	0	8	28	0	8	147	1	0	421
12:15	30	3	15	0	17	139	14	0	4	8	20	1	11	132	3	0	396
12:30	28	10	14	0	17	136	20	0	3	10	19	0	5	123	3	0	388
12:45	38	14	10	0	27	138	13	0	1	10	16	0	15	139	4	0	425
13:00	19	11	11	0	28	122	18	0	6	4	28	0	11	125	2	0	385
13:15	27	5	12	0	15	122	20	0	1	11	25	0	9	115	1	0	363
13:30	19	12	9	0	26	111	23	0	2	11	18	0	5	128	2	0	366
13:45	29	14	11	0	27	138	26	0	3	9	25	0	7	109	3	0	401
14:00	27	10	14	0	20	130	15	0	1	11	25	0	6	141	0	0	400
14:15	41	8	14	0	22	159	20	0	5	10	28	0	5	166	5	0	483
14:30	29	5	9	0	28	122	21	0	5	11	25	0	8	130	1	0	394
14:45	41	9	13	0	39	155	25	0	1	9	32	0	5	153	4	0	486
15:00	42	14	10	0	20	159	29	0	4	11	29	0	9	187	2	0	516
15:15	49	14	9	0	25	156	27	0	1	11	23	1	6	168	1	0	490
15:30	40	10	10	0	32	205	22	0	10	20	53	0	8	161	2	0	573
15:45	37	8	12	0	24	217	26	0	1	13	35	0	16	176	2	0	567
16:00	40	12	9	0	29	212	23	0	6	14	57	0	10	248	4	0	664
16:15	50	10	7	1	36	196	35	2	2	16	45	0	13	228	5	0	643
16:30	46	11	16	0	28	193	22	0	5	14	42	0	8	224	2	0	611
16:45	39	12	13	1	28	198	31	0	5	15	47	0	10	222	5	0	625
17:00	53	14	15	0	23	185	28	0	4	12	58	0	13	197	2	0	604
17:15	41	11	12	0	22	167	24	0	4	9	43	0	3	188	1	0	525
17:30	49	10	13	1	15	155	20	0	5	5	26	0	15	196	3	0	512
17:45	41	5	8	0	24	159	22	0	5	9	23	0	13	144	6	0	459
18:00	32	9	11	0	9	100	23	0	7	6	32	0	7	141	3	0	380
18:15	29	5	9	0	18	136	20	0	1	5	19	0	5	135	2	0	384
18:30	33	6	5	0	19	127	16	0	3	8	22	0	10	113	0	0	362
18:45	18	4	7	0	15	132	18	0	2	3	22	0	7	99	2	0	329
Total	1427	404	455	4	1204	7562	939	2	124	378	1162	6	385	7030	124	3	21194

Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

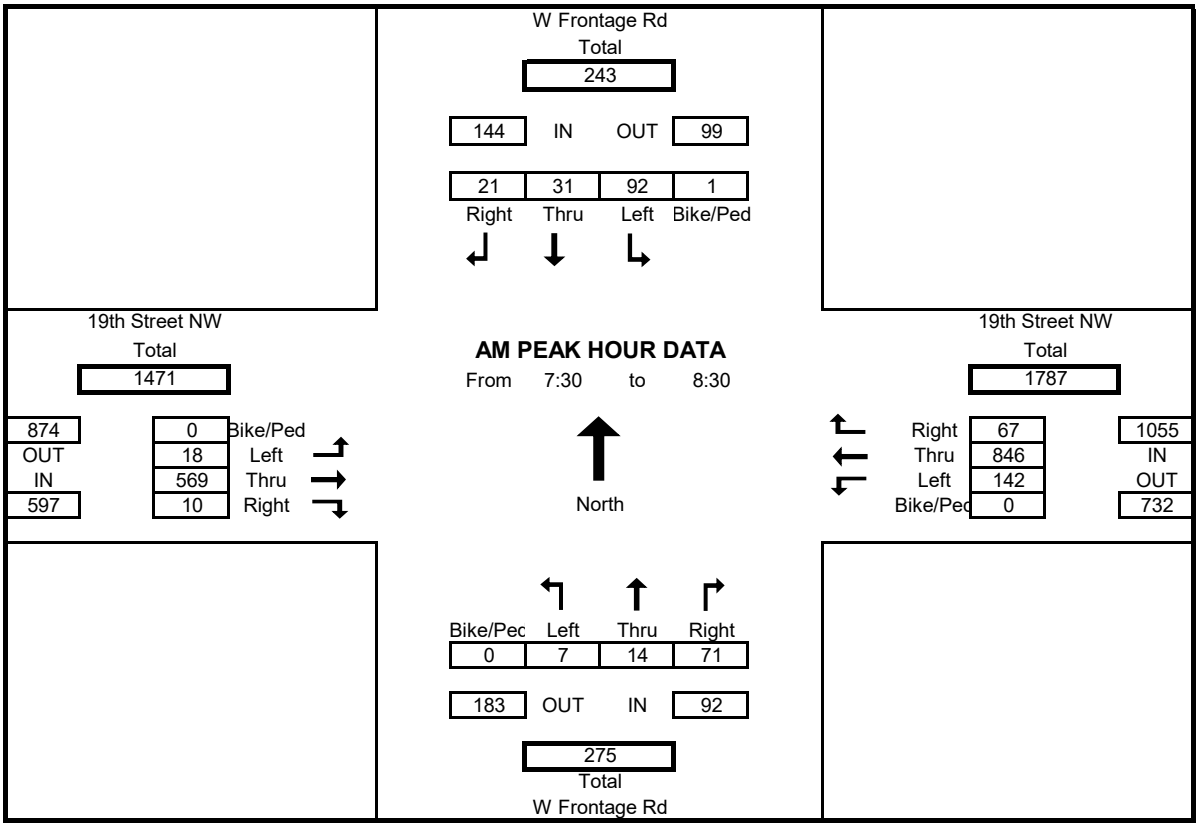
	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	0	0	1	1	0	0	0	0	3	0	0	2	0	0	7
6:15	0	0	0	0	0	2	0	0	0	0	1	0	0	5	0	0	8
6:30	0	0	0	0	1	0	0	0	0	0	2	0	0	11	0	0	14
6:45	0	0	0	0	2	2	0	0	0	0	2	0	0	17	0	0	23
7:00	0	0	0	0	1	0	1	0	0	0	0	0	0	14	0	0	16
7:15	4	0	0	0	0	2	0	0	0	0	4	0	1	9	0	0	20
7:30	0	0	0	0	2	1	0	0	0	0	1	0	0	4	1	0	9
7:45	2	0	1	0	0	4	0	0	0	0	5	0	0	2	0	0	14
8:00	0	0	0	0	1	4	0	0	0	0	6	0	0	2	0	0	13
8:15	1	1	0	0	2	2	0	0	1	0	2	0	0	2	0	0	11
8:30	0	0	0	0	1	6	0	0	0	1	3	0	0	8	0	0	19
8:45	0	0	1	0	0	4	0	0	0	1	0	0	1	4	0	0	11
9:00	0	0	1	0	3	12	0	0	0	0	2	0	0	2	0	1	20
9:15	0	0	1	0	3	31	0	0	0	0	2	0	0	2	0	0	39
9:30	1	0	0	0	2	3	1	0	0	0	2	0	0	1	0	0	10
9:45	0	0	1	0	1	4	0	0	0	0	2	0	0	3	0	0	11
10:00	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	4
10:15	1	0	0	0	0	2	1	0	0	1	2	0	0	1	0	0	8
10:30	0	0	0	0	3	1	0	0	0	1	1	0	0	1	0	0	7
10:45	1	0	0	0	1	2	0	0	0	0	0	0	1	1	0	0	6
11:00	2	1	1	0	0	1	0	0	0	0	3	0	0	10	0	0	18
11:15	1	0	0	0	1	2	1	0	0	0	1	0	0	6	1	0	13
11:30	0	0	0	0	2	6	0	0	0	0	1	0	0	3	0	0	12
11:45	0	0	0	0	4	5	1	0	0	0	1	0	0	1	0	0	12
12:00	0	1	0	0	1	5	0	0	0	0	3	0	0	2	0	0	12
12:15	0	0	0	0	2	1	0	0	0	0	3	0	0	3	0	0	9
12:30	1	0	0	0	0	1	1	0	0	0	0	0	0	5	0	0	8
12:45	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	4
13:00	0	0	0	0	1	9	0	0	0	0	1	0	0	1	0	0	12
13:15	0	1	0	0	2	5	1	0	0	0	3	0	0	5	0	0	17
13:30	1	0	0	0	1	0	1	0	0	0	2	0	0	2	0	0	7
13:45	0	0	0	0	2	0	0	0	0	0	0	0	0	5	0	0	7
14:00	0	0	0	0	0	1	0	0	0	0	0	0	0	9	0	0	10
14:15	0	0	0	0	2	0	0	0	0	0	0	0	0	9	0	0	11
14:30	1	0	0	0	2	1	0	0	0	0	1	0	0	26	0	0	31
14:45	0	0	0	0	1	1	0	0	0	0	0	0	0	14	0	0	16
15:00	0	0	0	0	3	7	1	0	0	0	1	0	0	2	0	0	14
15:15	1	0	0	0	1	3	1	0	0	0	1	0	0	4	0	0	11
15:30	0	0	0	0	2	2	1	0	0	0	2	0	0	0	0	0	7
15:45	1	0	0	0	3	3	0	0	0	0	0	0	0	4	0	0	11
16:00	0	0	0	0	5	1	0	0	0	0	0	0	0	1	0	0	7
16:15	0	0	0	0	5	3	0	0	0	0	4	0	0	5	0	0	17
16:30	0	0	1	0	4	14	0	0	0	0	0	0	0	1	0	0	20
16:45	0	0	0	0	1	16	0	0	0	0	0	0	0	3	0	0	20
17:00	0	0	0	0	0	9	1	0	0	0	1	0	0	1	0	0	12
17:15	0	0	0	0	0	3	0	0	0	0	1	0	0	3	0	0	7
17:30	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
17:45	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	4
18:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18:15	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	1	0	0	0	0	1	0	0	2	0	0	4
Total	19	4	7	0	74	186	12	0	1	4	72	0	3	225	2	1	609

Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

AM PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
7:30	27	9	6	0	31	206	14	0	1	4	14	0	6	184	4	0	506
7:45	27	13	9	1	49	238	15	0	2	5	18	0	5	160	1	0	542
8:00	25	5	2	0	46	225	26	0	1	1	21	0	3	126	5	0	486
8:15	13	4	4	0	16	177	12	0	3	4	18	0	4	99	0	0	354
Total	92	31	21	1	142	846	67	0	7	14	71	0	18	569	10	0	1888
% App. Total	63.9	21.5	14.6		13.5	80.2	6.4		7.6	15.2	77.2		3.0	95.3	1.7		
PHF	0.852	0.596	0.583	0.250	0.724	0.889	0.644	0.000	0.583	0.700	0.845	0.000	0.750	0.773	0.500	0.000	0.871
% Trucks	3.3	3.2	4.8	0.0	3.5	1.3	0.0	0.0	14.3	0.0	19.7	0.0	0.0	1.8	10.0	0.0	
	3.5				1.5				16.3				1.8				2.5



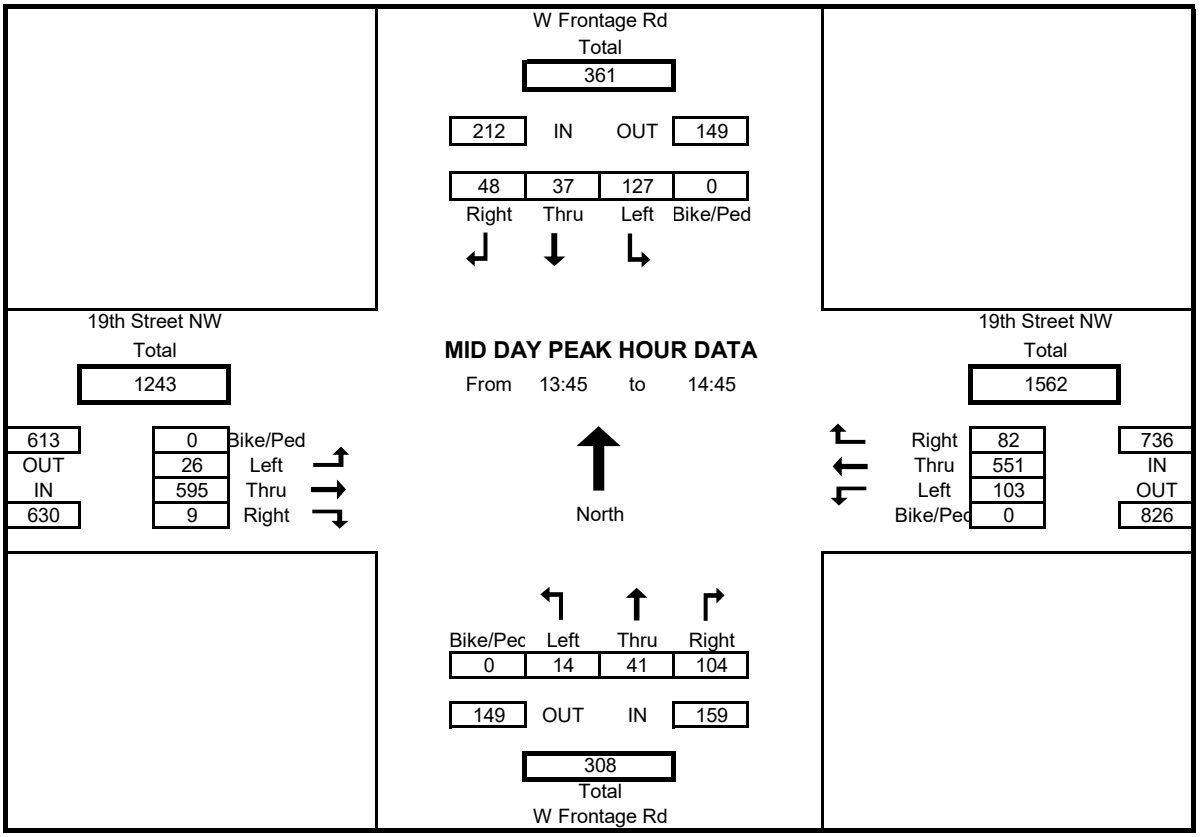
Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

MID DAY PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
13:45	29	14	11	0	29	138	26	0	3	9	25	0	7	114	3	0	408
14:00	27	10	14	0	20	131	15	0	1	11	25	0	6	150	0	0	410
14:15	41	8	14	0	24	159	20	0	5	10	28	0	5	175	5	0	494
14:30	30	5	9	0	30	123	21	0	5	11	26	0	8	156	1	0	425
Total	127	37	48	0	103	551	82	0	14	41	104	0	26	595	9	0	1737
% App. Total	59.9	17.5	22.6		14.0	74.9	11.1		8.8	25.8	65.4		4.1	94.4	1.4		
PHF	0.774	0.661	0.857	0.000	0.858	0.866	0.788	0.000	0.700	0.932	0.929	0.000	0.813	0.850	0.450	0.000	0.879

% Trucks	0.8	0.0	0.0	0.0	5.8	0.4	0.0	0.0	0.0	0.0	1.0	0.0	0.0	8.2	0.0	0.0	
	0.5				1.1				0.6				7.8				3.4

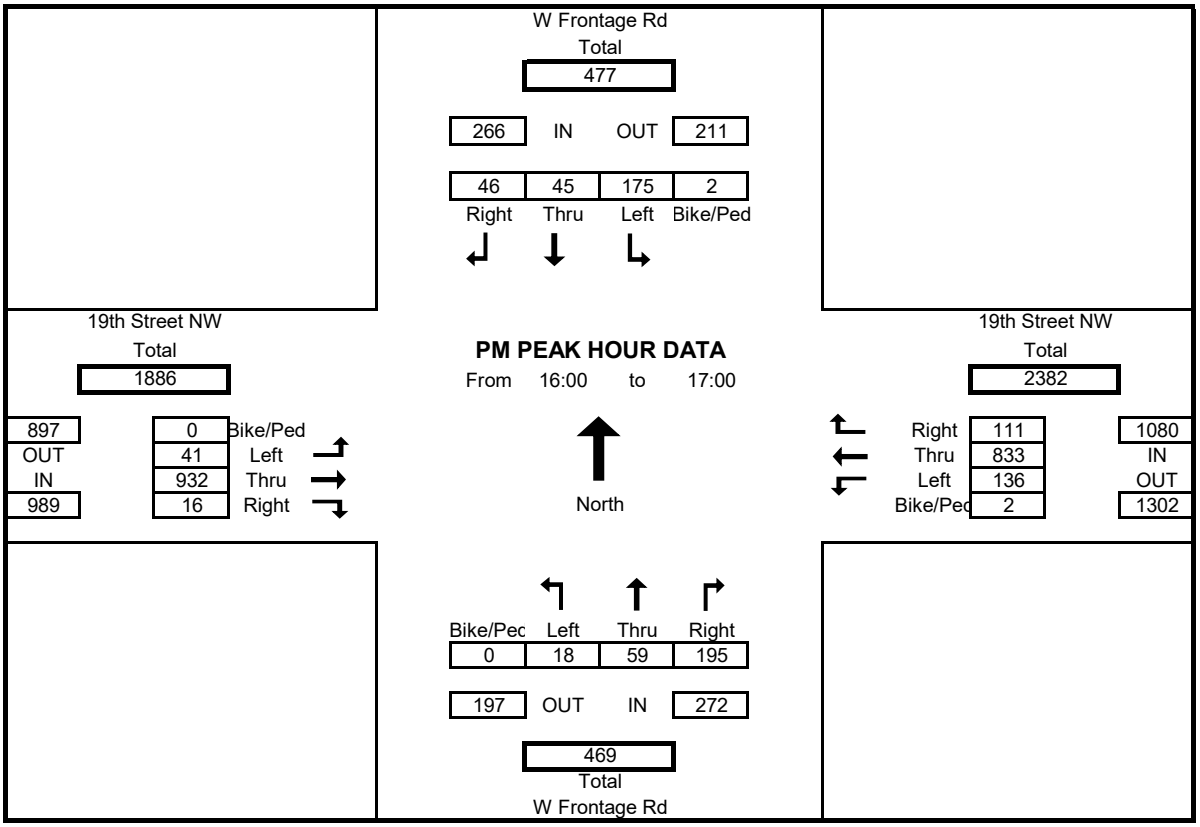


Location: 19th Street NW at W Frontage Road
Count Date: 1/16/2024
Counted By: CountCloud

PM PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	W Frontage Rd				19th Street NW				W Frontage Rd				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
16:00	40	12	9	0	34	213	23	0	6	14	57	0	10	249	4	0	671
16:15	50	10	7	1	41	199	35	2	2	16	49	0	13	233	5	0	660
16:30	46	11	17	0	32	207	22	0	5	14	42	0	8	225	2	0	631
16:45	39	12	13	1	29	214	31	0	5	15	47	0	10	225	5	0	645
Total	175	45	46	2	136	833	111	2	18	59	195	0	41	932	16	0	2607
% App. Total	65.8	16.9	17.3		12.6	77.1	10.3		6.6	21.7	71.7		4.1	94.2	1.6		
PHF	0.875	0.938	0.676	0.500	0.829	0.973	0.793	0.250	0.750	0.922	0.855	0.000	0.788	0.936	0.800	0.000	0.971
% Trucks	0.0	0.0	2.2	0.0	11.0	4.1	0.0	0.0	0.0	0.0	2.1	0.0	0.0	1.1	0.0	0.0	
	0.4				4.5				1.5				1.0				2.5



Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

All Vehicles + Total Peds/Bikes

	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Left	Thru	Right	Ped/Bike	Int. Total
6:00	18	0	29	0	36	24	9	0	41	0	17	0	13	18	22	0	227
6:15	21	0	33	0	28	30	12	0	50	0	28	0	15	17	39	0	273
6:30	21	0	29	0	44	37	13	0	65	0	51	1	16	32	61	0	369
6:45	37	0	38	0	55	54	16	0	89	0	61	0	20	32	75	0	477
7:00	38	0	43	0	54	39	20	0	71	0	46	0	15	34	68	0	428
7:15	67	0	46	0	52	51	20	0	97	0	76	1	29	54	62	0	554
7:30	96	0	72	0	69	76	42	0	99	0	115	0	29	97	89	0	784
7:45	104	0	77	0	69	110	55	0	127	0	143	0	21	99	87	0	892
8:00	112	0	60	0	120	121	61	0	107	0	107	0	27	87	68	0	870
8:15	53	0	32	0	75	95	41	0	77	0	79	0	27	59	40	0	578
8:30	41	0	49	0	48	52	32	0	64	0	68	0	25	60	55	0	494
8:45	48	0	70	0	55	58	26	0	75	0	57	0	11	61	46	0	507
9:00	44	0	64	0	50	80	44	0	62	0	46	0	24	61	61	0	536
9:15	34	0	67	0	67	86	44	0	70	0	53	0	44	72	54	0	591
9:30	33	0	34	0	29	49	25	0	54	0	56	0	26	63	57	0	426
9:45	35	0	44	0	52	56	37	0	61	0	43	0	26	61	65	0	480
10:00	26	0	37	2	46	56	36	0	44	0	46	2	24	51	45	0	411
10:15	30	0	33	0	37	53	30	0	70	0	36	0	31	44	64	0	428
10:30	35	0	48	0	38	56	26	0	60	0	39	0	22	67	44	0	435
10:45	44	0	55	0	49	68	31	0	59	0	51	0	32	61	64	0	514
11:00	34	0	27	0	30	70	31	0	64	0	55	1	28	72	63	0	474
11:15	29	0	36	0	51	70	37	0	53	0	66	0	33	68	66	0	509
11:30	42	0	36	0	39	70	42	0	58	0	54	0	32	57	79	0	509
11:45	41	0	35	0	36	71	35	0	72	0	48	0	40	90	87	0	555
12:00	33	0	50	0	36	72	38	0	69	0	51	0	36	90	88	0	563
12:15	44	0	55	0	42	59	31	0	57	0	45	1	34	76	75	0	518
12:30	39	0	47	0	44	60	47	0	73	0	50	0	31	75	76	0	542
12:45	41	0	42	0	37	73	30	0	65	0	56	0	38	78	80	0	540
13:00	27	0	44	0	43	90	27	0	62	0	50	0	36	65	75	0	519
13:15	32	0	38	0	38	54	41	0	64	0	45	0	31	76	68	0	487
13:30	25	0	36	0	41	65	46	0	71	0	44	0	33	70	69	0	500
13:45	31	0	41	0	44	75	27	0	69	0	78	0	33	71	66	0	535
14:00	27	0	36	0	43	66	40	0	65	0	60	0	41	66	100	0	544
14:15	38	0	43	0	49	77	51	0	87	0	69	0	41	96	99	0	650
14:30	21	0	39	0	52	64	53	0	83	0	91	0	43	97	80	0	623
14:45	40	0	46	0	72	77	46	0	93	0	87	0	37	99	106	0	703
15:00	54	0	40	0	112	109	53	0	81	0	68	0	35	102	121	0	775
15:15	66	0	41	0	71	94	80	0	81	0	99	1	40	102	106	0	780
15:30	53	0	53	0	73	104	81	0	108	0	80	0	43	106	112	0	813
15:45	57	0	63	0	89	105	71	0	109	0	90	0	40	87	111	0	822
16:00	48	0	62	2	90	105	77	2	100	0	94	2	62	124	156	0	918
16:15	47	0	54	0	92	101	77	0	124	0	97	2	54	114	163	0	923
16:30	52	0	67	0	94	100	61	0	101	0	87	0	58	105	144	0	869
16:45	50	0	60	1	78	94	71	0	112	0	115	0	71	112	123	0	886
17:00	49	0	61	0	93	103	54	0	98	0	103	0	51	117	151	0	880
17:15	52	0	41	1	67	74	66	0	92	0	98	0	60	105	114	0	769
17:30	56	0	41	1	79	59	54	0	84	0	101	0	52	106	112	0	744
17:45	66	0	39	0	75	78	57	0	92	0	104	0	49	85	80	0	725
18:00	59	0	46	0	66	48	40	0	52	0	101	0	44	78	86	0	620
18:15	36	0	41	0	53	63	33	0	61	0	78	0	33	76	79	0	553
18:30	40	0	30	0	49	70	33	0	69	0	70	0	31	61	75	0	528
18:45	36	0	41	0	54	54	36	0	62	0	61	0	31	61	60	0	496
Total	2302	0	2391	7	3005	3725	2186	2	3973	0	3613	11	1798	3917	4236	0	31146
Cars+	2265	0	2311	7	2958	3578	2162	2	3881	0	3574	11	1730	3814	4089	0	30362
Trucks	37	0	80	0	47	147	24	0	92	0	39	0	68	103	147	0	784
% Trucks	1.6	0.0	3.3	0.0	1.6	3.9	1.1	0.0	2.3	0.0	1.1	0.0	3.8	2.6	3.5	0.0	
	2.5				2.4				1.7				3.2				2.5

Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Cars + Pedestrians

	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
6:00	18	0	28	0	36	24	9	0	41	0	17	0	13	18	19	0	223
6:15	21	0	32	0	28	30	12	0	49	0	27	0	11	17	38	0	265
6:30	21	0	29	0	44	36	13	0	64	0	51	1	10	28	57	0	353
6:45	37	0	37	0	55	54	16	0	87	0	61	0	11	31	68	0	457
7:00	38	0	43	0	54	38	20	0	70	0	46	0	10	30	60	0	409
7:15	64	0	46	0	52	50	20	0	96	0	75	1	22	50	57	0	532
7:30	91	0	71	0	67	73	41	0	98	0	108	0	29	93	86	0	757
7:45	103	0	76	0	68	106	51	0	126	0	138	0	21	97	78	0	864
8:00	111	0	59	0	118	118	60	0	105	0	107	0	25	87	62	0	852
8:15	51	0	31	0	73	92	41	0	75	0	79	0	25	57	38	0	562
8:30	41	0	48	0	48	49	32	0	61	0	68	0	23	56	51	0	477
8:45	47	0	69	0	54	56	25	0	74	0	57	0	10	59	45	0	496
9:00	42	0	57	0	48	68	44	0	59	0	46	0	23	61	58	0	506
9:15	33	0	57	0	66	75	42	0	57	0	50	0	42	72	52	0	546
9:30	32	0	32	0	29	47	25	0	51	0	56	0	24	61	56	0	413
9:45	35	0	44	0	51	54	36	0	60	0	43	0	26	59	63	0	471
10:00	24	0	35	2	46	56	36	0	43	0	46	2	24	50	45	0	405
10:15	29	0	33	0	37	51	30	0	69	0	36	0	28	43	63	0	419
10:30	35	0	47	0	38	55	26	0	58	0	39	0	21	67	43	0	429
10:45	44	0	54	0	47	65	30	0	58	0	51	0	32	60	63	0	504
11:00	34	0	27	0	30	69	31	0	64	0	54	1	28	63	58	0	458
11:15	29	0	36	0	51	68	36	0	51	0	66	0	32	64	63	0	496
11:30	42	0	36	0	38	63	40	0	55	0	54	0	32	56	76	0	492
11:45	41	0	35	0	35	67	34	0	68	0	48	0	40	89	86	0	543
12:00	33	0	49	0	36	71	38	0	66	0	51	0	36	88	85	0	553
12:15	44	0	55	0	42	58	31	0	55	0	45	1	31	75	73	0	509
12:30	39	0	47	0	44	60	47	0	71	0	49	0	31	71	74	0	533
12:45	37	0	42	0	37	73	30	0	64	0	56	0	38	76	79	0	532
13:00	27	0	43	0	41	79	27	0	61	0	49	0	36	65	73	0	501
13:15	32	0	35	0	38	50	41	0	62	0	45	0	31	74	62	0	470
13:30	25	0	36	0	41	63	46	0	71	0	44	0	33	67	66	0	492
13:45	30	0	40	0	43	73	26	0	69	0	77	0	33	70	62	0	523
14:00	26	0	35	0	42	65	40	0	65	0	58	0	40	65	93	0	529
14:15	38	0	42	0	44	72	51	0	86	0	69	0	40	90	97	0	629
14:30	21	0	38	0	51	62	53	0	82	0	89	0	40	81	72	0	589
14:45	39	0	45	0	71	72	46	0	93	0	85	0	34	90	103	0	678
15:00	51	0	36	0	101	96	53	0	80	0	65	0	35	101	119	0	737
15:15	63	0	40	0	71	90	78	0	80	0	97	1	40	99	103	0	761
15:30	52	0	51	0	72	103	79	0	105	0	79	0	41	106	112	0	800
15:45	56	0	60	0	89	105	71	0	106	0	90	0	38	86	109	0	810
16:00	46	0	59	2	90	105	75	2	97	0	91	2	61	124	156	0	904
16:15	47	0	51	0	87	94	75	0	120	0	96	2	54	113	155	0	892
16:30	52	0	62	0	93	91	61	0	97	0	87	0	58	105	142	0	848
16:45	50	0	53	1	77	88	71	0	107	0	114	0	70	112	121	0	863
17:00	49	0	57	0	92	99	54	0	95	0	103	0	50	116	151	0	866
17:15	52	0	40	1	67	74	66	0	90	0	98	0	60	105	112	0	764
17:30	56	0	41	1	79	59	54	0	84	0	100	0	51	106	111	0	741
17:45	66	0	37	0	75	78	57	0	92	0	104	0	49	85	79	0	722
18:00	59	0	45	0	66	48	40	0	52	0	101	0	44	78	86	0	619
18:15	36	0	40	0	53	62	33	0	61	0	78	0	33	76	77	0	549
18:30	40	0	30	0	49	70	33	0	69	0	70	0	31	61	74	0	527
18:45	36	0	40	0	54	54	36	0	62	0	61	0	30	61	58	0	492
Total	2265	0	2311	7	2958	3578	2162	2	3881	0	3574	11	1730	3814	4089	0	30362

Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

TURNING MOVEMENT COUNT DATA

Trucks + Bicycles

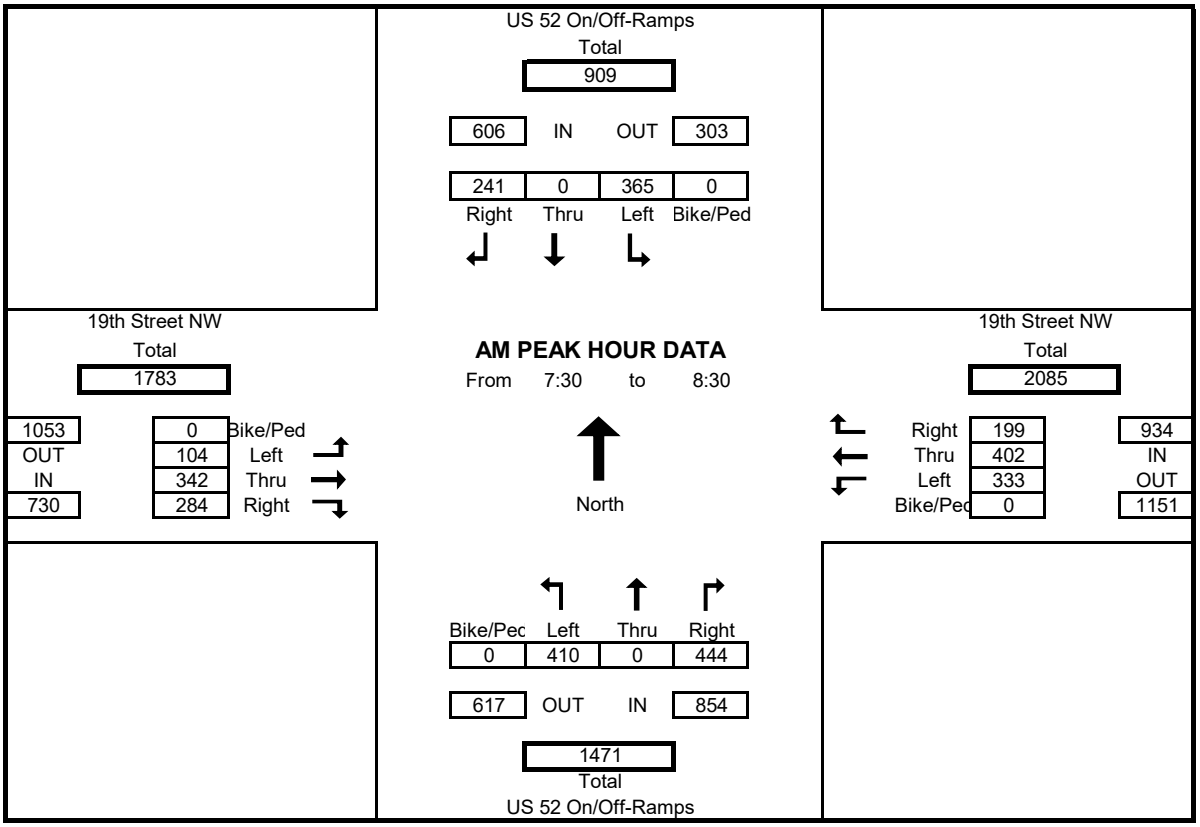
	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Left	Thru	Right	Bikes	Int. Total
6:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	4
6:15	0	0	1	0	0	0	0	0	1	0	1	0	4	0	1	0	8
6:30	0	0	0	0	0	1	0	0	1	0	0	0	6	4	4	0	16
6:45	0	0	1	0	0	0	0	0	2	0	0	0	9	1	7	0	20
7:00	0	0	0	0	0	1	0	0	1	0	0	0	5	4	8	0	19
7:15	3	0	0	0	0	1	0	0	1	0	1	0	7	4	5	0	22
7:30	5	0	1	0	2	3	1	0	1	0	7	0	0	4	3	0	27
7:45	1	0	1	0	1	4	4	0	1	0	5	0	0	2	9	0	28
8:00	1	0	1	0	2	3	1	0	2	0	0	0	2	0	6	0	18
8:15	2	0	1	0	2	3	0	0	2	0	0	0	2	2	2	0	16
8:30	0	0	1	0	0	3	0	0	3	0	0	0	2	4	4	0	17
8:45	1	0	1	0	1	2	1	0	1	0	0	0	1	2	1	0	11
9:00	2	0	7	0	2	12	0	0	3	0	0	0	1	0	3	0	30
9:15	1	0	10	0	1	11	2	0	13	0	3	0	2	0	2	0	45
9:30	1	0	2	0	0	2	0	0	3	0	0	0	2	2	1	0	13
9:45	0	0	0	0	1	2	1	0	1	0	0	0	0	2	2	0	9
10:00	2	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0	6
10:15	1	0	0	0	0	2	0	0	1	0	0	0	3	1	1	0	9
10:30	0	0	1	0	0	1	0	0	2	0	0	0	1	0	1	0	6
10:45	0	0	1	0	2	3	1	0	1	0	0	0	0	1	1	0	10
11:00	0	0	0	0	0	1	0	0	0	0	1	0	0	9	5	0	16
11:15	0	0	0	0	0	2	1	0	2	0	0	0	1	4	3	0	13
11:30	0	0	0	0	1	7	2	0	3	0	0	0	0	1	3	0	17
11:45	0	0	0	0	1	4	1	0	4	0	0	0	0	1	1	0	12
12:00	0	0	1	0	0	1	0	0	3	0	0	0	0	2	3	0	10
12:15	0	0	0	0	0	1	0	0	2	0	0	0	3	1	2	0	9
12:30	0	0	0	0	0	0	0	0	2	0	1	0	0	4	2	0	9
12:45	4	0	0	0	0	0	0	0	1	0	0	0	0	2	1	0	8
13:00	0	0	1	0	2	11	0	0	1	0	1	0	0	0	2	0	18
13:15	0	0	3	0	0	4	0	0	2	0	0	0	0	2	6	0	17
13:30	0	0	0	0	0	2	0	0	0	0	0	0	0	3	3	0	8
13:45	1	0	1	0	1	2	1	0	0	0	1	0	0	1	4	0	12
14:00	1	0	1	0	1	1	0	0	0	0	2	0	1	1	7	0	15
14:15	0	0	1	0	5	5	0	0	1	0	0	0	1	6	2	0	21
14:30	0	0	1	0	1	2	0	0	1	0	2	0	3	16	8	0	34
14:45	1	0	1	0	1	5	0	0	0	0	2	0	3	9	3	0	25
15:00	3	0	4	0	11	13	0	0	1	0	3	0	0	1	2	0	38
15:15	3	0	1	0	0	4	2	0	1	0	2	0	0	3	3	0	19
15:30	1	0	2	0	1	1	2	0	3	0	1	0	2	0	0	0	13
15:45	1	0	3	0	0	0	0	0	3	0	0	0	2	1	2	0	12
16:00	2	0	3	0	0	0	2	0	3	0	3	0	1	0	0	0	14
16:15	0	0	3	0	5	7	2	0	4	0	1	0	0	1	8	0	31
16:30	0	0	5	0	1	9	0	0	4	0	0	0	0	0	2	0	21
16:45	0	0	7	0	1	6	0	0	5	0	1	0	1	0	2	0	23
17:00	0	0	4	0	1	4	0	0	3	0	0	0	1	1	0	0	14
17:15	0	0	1	0	0	0	0	0	2	0	0	0	0	0	2	0	5
17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	3
17:45	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3
18:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18:15	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	0	4
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18:45	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	0	4
Total	37	0	80	0	47	147	24	0	92	0	39	0	68	103	147	0	784

Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

AM PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
7:30	96	0	72	0	69	76	42	0	99	0	115	0	29	97	89	0	784
7:45	104	0	77	0	69	110	55	0	127	0	143	0	21	99	87	0	892
8:00	112	0	60	0	120	121	61	0	107	0	107	0	27	87	68	0	870
8:15	53	0	32	0	75	95	41	0	77	0	79	0	27	59	40	0	578
Total	365	0	241	0	333	402	199	0	410	0	444	0	104	342	284	0	3124
% App. Total	60.2	0.0	39.8		35.7	43.0	21.3		48.0	0.0	52.0		14.2	46.8	38.9		
PHF	0.815	0.000	0.782	0.000	0.694	0.831	0.816	0.000	0.807	0.000	0.776	0.000	0.897	0.864	0.798	0.000	0.876
% Trucks	2.5	0.0	1.7	0.0	2.1	3.2	3.0	0.0	1.5	0.0	2.7	0.0	3.8	2.3	7.0	0.0	
	2.1				2.8				2.1				4.4				2.8

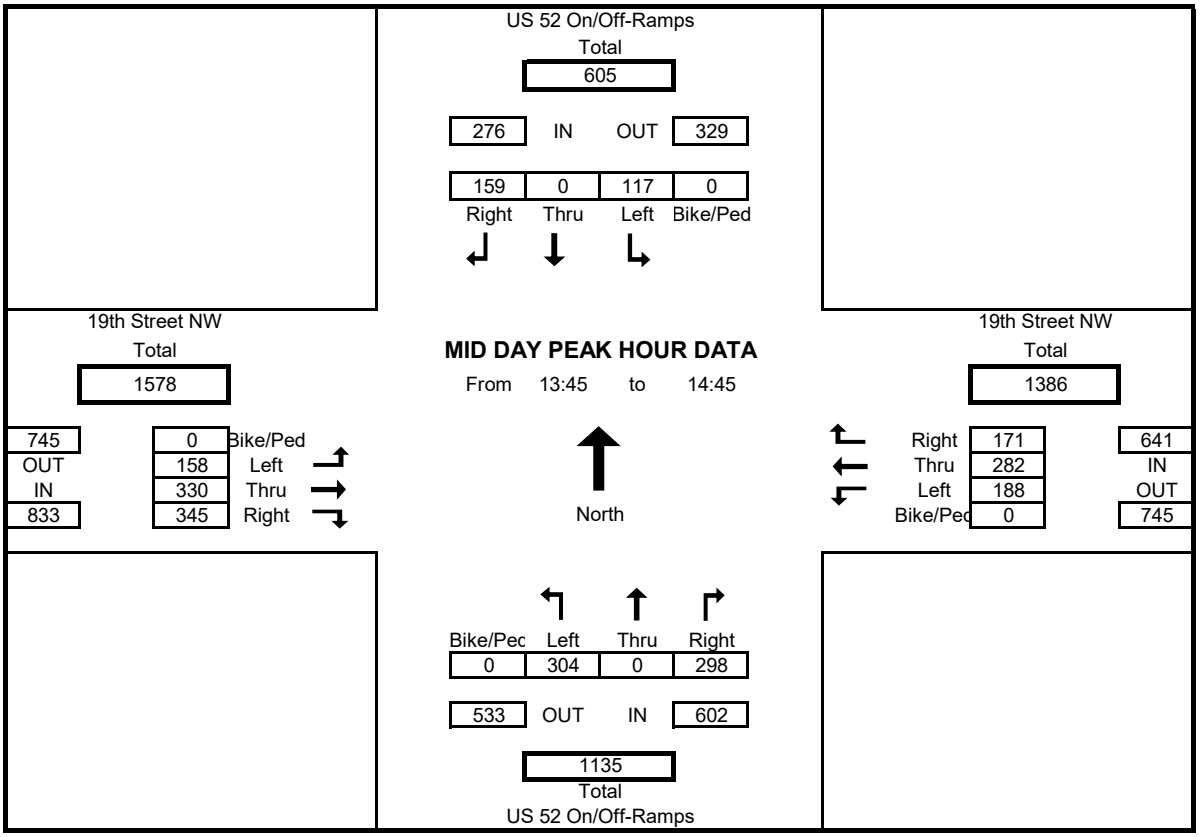


Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

MID DAY PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
13:45	31	0	41	0	44	75	27	0	69	0	78	0	33	71	66	0	535
14:00	27	0	36	0	43	66	40	0	65	0	60	0	41	66	100	0	544
14:15	38	0	43	0	49	77	51	0	87	0	69	0	41	96	99	0	650
14:30	21	0	39	0	52	64	53	0	83	0	91	0	43	97	80	0	623
Total	117	0	159	0	188	282	171	0	304	0	298	0	158	330	345	0	2352
% App. Total	42.4	0.0	57.6		29.3	44.0	26.7		50.5	0.0	49.5		19.0	39.6	41.4		
PHF	0.770	0.000	0.924	0.000	0.904	0.916	0.807	0.000	0.874	0.000	0.819	0.000	0.919	0.851	0.863	0.000	0.905
% Trucks	1.7	0.0	2.5	0.0	4.3	3.5	0.6	0.0	0.7	0.0	1.7	0.0	3.2	7.3	6.1	0.0	
	2.2				3.0				1.2				6.0				3.5

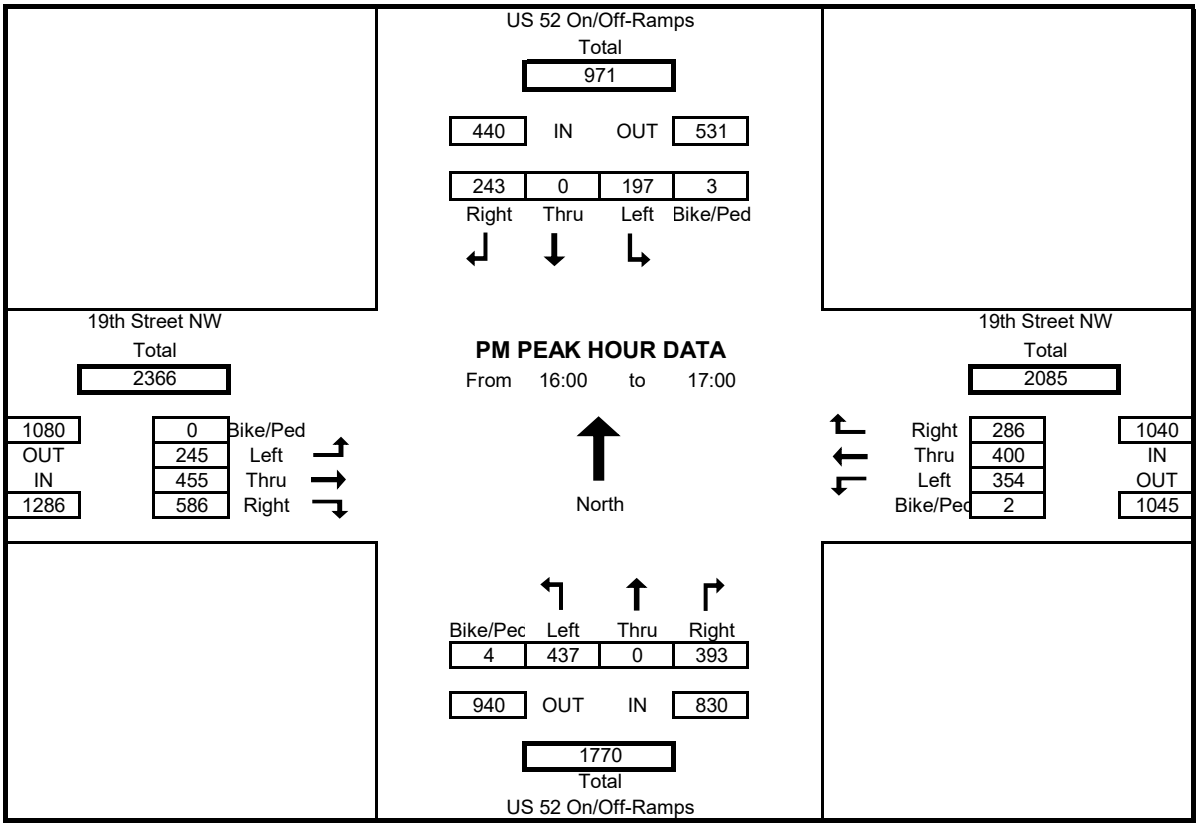


Location: 19th Street NW at US 52 SPUI
Count Date: 1/16/2024
Counted By: CountCloud

PM PEAK HOUR TURNING MOVEMENT DATA

All Vehicles

	US 52 On/Off-Ramps				19th Street NW				US 52 On/Off-Ramps				19th Street NW				
	Southbound				Westbound				Northbound				Eastbound				
Start Time	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Left	Thru	Right	Bike/Ped	Int. Total
16:00	48	0	62	2	90	105	77	2	100	0	94	2	62	124	156	0	918
16:15	47	0	54	0	92	101	77	0	124	0	97	2	54	114	163	0	923
16:30	52	0	67	0	94	100	61	0	101	0	87	0	58	105	144	0	869
16:45	50	0	60	1	78	94	71	0	112	0	115	0	71	112	123	0	886
Total	197	0	243	3	354	400	286	2	437	0	393	4	245	455	586	0	3596
% App. Total	44.8	0.0	55.2		34.0	38.5	27.5		52.7	0.0	47.3		19.1	35.4	45.6		
PHF	0.947	0.000	0.907	0.375	0.941	0.952	0.929	0.250	0.881	0.000	0.854	0.500	0.863	0.917	0.899	0.000	0.974
% Trucks	1.0	0.0	7.4	0.0	2.0	5.5	1.4	0.0	3.7	0.0	1.3	0.0	0.8	0.2	2.0	0.0	
	4.5				3.2				2.5				1.2				2.5



Appendix B

Measures of Effectiveness

Table B1a
Rochester Tech Campus
2024 Existing Conditions
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane				Through Lane (s)					Right Turn Lane				
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] <----	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	17	148	57	222			41.4	D	53.2	D	2.1	A	39.6	D			305	20	39			944	78	134			170		20
		WB	176	104	16	296			41.6	D	25.4	C	12.9	B	33.4	C	19.2	B	290	112	201			1031	36	79					
		NB	71	329	236	636			15.2	B	8.7	A	3.1	A	7.4	A			330	27	59			1200	34	80			325	22	51
		SB	38	468	25	531			14.4	B	16.4	B	2.5	A	15.6	B			270	20	45			922	100	177			270	20	27
	41st St at 31st Ave/RTC West (Signal)	EB	67	264	93	424			11.4	B	9.0	A	3.6	A	8.2	A			200	29	66			1212	51	92			135	25	56
		WB	29	246	41	316			11.3	B	7.6	A	5.7	A	7.7	A	9.3	A	165	20	58			1336	58	116					
		NB	51	36	5	92			13.6	B	16.9	B	6.6	A	14.6	B			130	21	50			597	20	50					
		SB	83	52	32	167			14.0	B	17.4	B	5.6	A	13.2	B			100	39	79			906	37	73					
	41st St at W Frontage Rd/Marketplace D	EB	26	285	24	335			16.0	B	11.3	B	4.0	A	11.2	B			160	20	44			1336	58	120	3 %		95	20	35
		WB	65	366	227	658			9.3	A	7.9	A	3.8	A	6.6	A	15.5	B	435	23	52			434	54	112			160	34	73
		NB	55	71	73	199			39.6	D	38.1	D	0.7	A	24.8	C			310	35	78			272	45	99					
		SB	132	57	32	221			43.4	D	44.1	D	18.9	B	39.9	D			270	63	128			140	44	101					
	41st St at SB US 52 Ramp (Signal)	EB		240	250	490					7.4	A	4.4	A	5.9	A								450	33	81			440	30	79
		WB	263	483		746			15.9	B	5.7	A			9.3	A	12.3	B	190	84	**164**			576	49	133					
		NB													0.0	A															
		SB	38	159	175	372			43.3	D	42.4	D	8.5	A	26.8	C								953	115	193			275	46	85
	41st St at NB US 52 Ramp/E Frontage R	EB	50	228		278			9.7	A	3.9	A			4.9	A			230	21	53			576	23	69					
		WB		519	33	552					7.7	A	5.1	A	7.5	A	13.3	B						345	52	137					
		NB	227	1	113	341			42.0	D	30.7	C	3.9	A	29.2	C			625	56	136			625	78	165			315	29	70
		SB													0.0	A															
	41st St at E Frontage Rd (Signal)	EB	139	178	24	341			7.1	A	2.1	A	1.0	A	4.0	A			320	38	86			318	20	52					
		WB	13	303	47	363			5.0	A	3.2	A	1.1	A	3.0	A	6.5	A	345	20	20			457	38	98			125	20	27
		NB	18	12	9	39			44.4	D	24.0	C	7.8	A	27.3	C			95	20	50			830	20	54					
		SB	34	14	231	279			50.0	D	49.5	D	2.2	A	10.3	B			175	27	70			809	20	40			180	20	28
	Marketplace Dr at SE Target Access	EB	6		11	17			5.9	A			2.7	A	4.0	A			410	20	29								60	20	32
		WB													0.0	A	0.7	A													
		NB	62	177		239			2.4	A	0.3	A			0.8	A			200	20	29										
		SB		74	12	86					0.2	A	0.2	A	0.2	A															
	Marketplace Dr at Slip Ramp from 37th S	EB			2	2							3.7	A	3.7	A													110	20	20
		WB	11		154	165			5.6	A	1.8	A	3.7	A	3.8	A	1.9	A	60	20	28								390	30	55
		NB		86		86					0.4	A			0.4	A															
		SB		68	1	69					0.2	A	0.2	A	0.2	A															
	W Circle Dr at Valleyhigh Dr (Signal)	EB	104	191	167	462			62.2	**E**	51.3	D	3.0	A	35.3	D			290	65	129			1110	100	164					
		WB	42	108	103	253			65.2	**E**	19.5	B	2.2	A	19.7	B	28.2	C	295	39	88			1490	42	87					
		NB	96	429	75	600			62.4	**E**	25.2	C	4.9	A	28.4	C			295	70	136			1129	100	175			250	23	54
		SB	159	442	100	701			55.5	**E**	25.2	C	2.6	A	28.6	C			310	131	229			670	119	192					
	37th St at RTC West	EB	6	15		21			2.0	A	0.2	A			0.7	A			65		20										
		WB	4	40	83	127			2.1	A	0.2	A	2.2	A	1.1	A	2.8	A													
		NB			1	1							1.9	A	1.9	A								776	20	20					
		SB	133	1	27	161			6.0	A	0.5	A	3.0	A	4.9	A								727	41	66			130	20	45
	37th St at RTC East	EB		75	6	81					0.1	A	0.1	A	0.1	A															
		WB	235	205		440			3.9	A	0.6	A			2.4	A	1.8	A	340	20	47										
		NB	3		39	42			7.1	A			1.9	A	2.2	A			940	20	20										
		SB													0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB		78	36	114					4.4	A	0.1	A	3.0	A								650	20	20			200		
		WB	258	504		762			6.5	A	9.0	A			8.2	A	12.9	B	265	20	46			610	66	134					
		NB													0.0	A															
		SB	122		101	223			53.2	D	0.1	A	6.7	A	32.6	C								973	102	190			485	42	78
	37th St at NB US 52 Ramp (Signal)	EB	13	187		200			12.6	B	7.0	A			7.3	A			160	20	30			610	23	65					
		WB		534	135	669					11.9	B	4.0	A	10.3	B	16.4	B						397	114	214			185	23	56
		NB	228	329	351	908			31.3	C	33.2	C	7.8	A	22.9	C			820	61	127			1443	144	223			820	71	129
		SB													0.0	A															
	37th St at 21st Ave/E Frontage Rd (Sign	EB	14	498	26	538			7.2	A	2.6	A	1.1	A	2.6	A			200	20	20			397	21	57			200	20	20
		WB	25	627	22	674			7.1	A	2.8	A	0.9	A	2.9	A	5.0	A	195	20	30			960	35	87			300	20	20
		NB	36	9	14	59			53.8	D	43.8	D	7.7	A	41.4	D			150	27	65			888	20	37					
		SB	15	8	6	29			42.1	D	11.5	B	4.6	A	20.7	C								686	24	66			130	20	21
	Marketplace Dr at E RTC Access	EB													0.0	A															
		WB													0.0	A	0.4	A													
		NB		86		86					0.5	A			0.5	A															
		SB		91		91					0.3	A			0.3	A															
	Valleyhigh Dr at Watson Ave	EB													0.0	A															
		WB	28		61	89			8.7	A			3.1	A	4.8	A	1.3	A						1199	24	43					
		NB		368	54	422					0.3	A	0.8	A	0.4	A													305		20
		SB	53	244		297			3.8	A	1.0	A			1.3	A			260	20	37										
	19th St at W Frontage Rd (Signal)	EB	18	567	10	595			13.1	B	7.1	A	3.4	A	7.2	A			100	20	40	2 %		1122	64	146	2 %				
		WB	142	844	67	1,053			13.2	B	9.5	A	8.2	A	9.9	A	11.7	B	110	51	**118**	4 %		265	102	**213**	4 %				
		NB	7	14	71	92			46.0	D	57.9	**E**	6.5	A	16.6	B			225	20	37			888	20	42			445	41	77
		SB	92	31	21	144			46.4	D	39.7	D	14.5	B	40.2	D			250	59	113			702	26	68					
	19th St at US 52 Interchange (Signal)	EB	104	342	284	730			47.0	D	24.6	C			29.8	C			175	55	94			284	92	162	1 %				
		WB	333	402	199	934			36.4	D	20.1	C			27.5	C	30.4	C	555	147	232			812	119	202					
		NB	410		444	854			34.0	C					34.0	C			860	193	316										
		SB	365		241	606			32.9	C					32.9	C			865	189	315										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B1b
Rochester Tech Campus
2024 Existing Conditions
PM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] <----	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB	40	141	91	272			37.5	D	54.6	D	2.1	A	34.7	C			305	25	62			944	70	119			170	20	20
		WB	363	240	41	644			49.8	D	29.3	C	21.8	C	40.1	D	25.0	C	290	231	372			1031	87	211					
		NB	178	638	373	1,189			24.2	C	14.4	B	6.2	A	13.3	B			330	70	138			1200	68	135			325	40	86
		SB	50	447	29	526			34.2	C	28.2	C	3.9	A	27.4	C			270	36	80			922	130	215			270	20	33
	41st St at 31st Ave/RTC West (Signal)	EB	44	495	48	587			14.9	B	13.6	B	3.9	A	12.9	B			200	23	53			1212	90	146	1 %		135	20	46
		WB	21	441	62	524			15.1	B	14.8	B	9.0	A	14.1	B	14.4	B	165	20	60		1 %	1336	97	169	1 %				
		NB	107	88	47	242			15.5	B	20.2	C	11.5	B	16.6	B			130	41	83		2 %	597	54	107					
		SB	130	50	81	261			17.2	B	24.0	C	9.2	A	16.0	B			100	55	96		2 %	906	55	110					
	41st St at W Frontage Rd/Marketplace D	EB	69	686	60	815			22.8	C	31.7	C	11.2	B	29.4	C			160	40	108		9 %	1336	210	338	35 %		95	51	150
		WB	163	331	222	716			20.8	C	15.4	B	5.1	A	13.5	B	24.7	C	435	67	129			434	76	142			160	47	91
		NB	90	148	351	589			43.2	D	47.7	D	1.3	A	18.6	B			310	54	105			272	93	174			260	20	27
		SB	383	147	49	579			40.0	D	39.0	D	25.8	C	38.5	D			270	158	282		3 %	140	105	198					
	41st St at SB US 52 Ramp (Signal)	EB		774	646	1,420					15.9	B	16.8	B	16.3	B								450	165	286			440	167	317
		WB	336	586		922			66.2	E	5.6	A			27.2	C	22.2	C	190	211	330			576	129	400					
		NB													0.0	A															
		SB	72	116	130	318			50.9	D	51.0	D	9.3	A	33.8	C								953	125	214			275	40	75
	41st St at NB US 52 Ramp/E Frontage R	EB	211	635		846			23.9	C	8.4	A			12.3	B			230	90	170			576	75	160					
		WB		704	112	816					18.9	B	14.7	B	18.3	B	16.6	B						345	129	256					
		NB	218	15	230	463			36.5	D	33.1	C	6.8	A	21.2	C			625	50	129			625	66	159			315	49	114
		SB													0.0	A															
	41st St at E Frontage Rd (Signal)	EB	298	459	108	865			18.1	B	7.9	A	3.2	A	10.9	B			320	110	196			318	85	153					
		WB	36	354	51	441			13.2	B	12.0	B	2.3	A	10.9	B	15.4	B	345	20	43		5 %	457	103	201	5 %		125	20	61
		NB	127	58	53	238			36.1	D	47.9	D	20.8	C	35.4	D			95	78	138		9 %	830	84	158					
		SB	104	63	335	502			40.8	D	53.3	D	3.7	A	17.7	B			175	73	137			809	53	102			180	37	119
	Marketplace Dr at SE Target Access	EB	52		62	114			20.8	C			4.3	A	11.2	B			410	30	62								60	29	50
		WB													0.0	A	2.6	A													
		NB	263	414		677			4.5	A	0.6	A			2.1	A			200	43	79										
		SB		244	37	281					0.9	A	0.7	A	0.9	A								510	20	20					
	Marketplace Dr at Slip Ramp from 37th S	EB			8	8							3.8	A	3.8	A													110	20	28
		WB	22		397	419			12.7	B			13.2	B	13.2	B	6.2	A	60	28	89							24 %	390	124	227
		NB		234		234					1.3	A			1.3	A															
		SB		251	2	253					0.5	A	0.3	A	0.5	A															
	W Circle Dr at Valleyhigh Dr (Signal)	EB	146	118	205	469			63.7	E	56.0	E	3.0	A	35.4	D			290	96	160			1110	67	122			270		
		WB	83	187	216	486			57.1	E	49.6	D	2.6	A	29.8	C	30.4	C	295	64	125			1490	66	119					
		NB	214	827	65	1,106			55.7	E	29.5	C	5.1	A	33.2	C			295	125	192			1129	189	282	2 %		250	20	43
		SB	111	667	123	901			56.0	E	23.4	C	2.8	A	24.7	C			310	92	163			670	160	231					
	37th St at RTC West	EB	40	48		88			2.7	A	0.5	A			1.5	A			65	20	20										
		WB		23	205	228					0.2	A	2.7	A	2.4	A	3.1	A											585		20
		NB													0.0	A															
		SB	109		18	127			6.1	A	0.2	A	2.7	A	5.3	A								727	40	66			130	20	42
	37th St at RTC East	EB		287	6	293					0.4	A	0.0	A	0.4	A															
		WB	53	150		203			3.4	A	0.6	A			1.3	A	1.4	A	340	20	34										
		NB	19		194	213			6.8	A			2.5	A	2.9	A			940	20	35										
		SB													0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB		319	162	481					16.7	B	0.1	A	11.4	B								650	54	108			200		
		WB	531	600		1,131			13.4	B	11.6	B			12.4	B	17.1	B	265	82	177			610	138	231					
		NB													0.0	A															
		SB	239	1	22	262			52.0	D	26.5	C	6.6	A	47.5	D								973	171	268			485	20	48
	37th St at NB US 52 Ramp (Signal)	EB	114	444		558			27.7	C	9.8	A			13.3	B			160	64	132			610	74	117					
		WB		819	231	1,050					14.0	B	7.4	A	12.5	B	19.7	B						397	165	306			185	42	89
		NB	312	450	528	1,290			37.1	D	36.6	D	15.9	B	28.4	C			820	66	165			1443	211	294			820	128	225
		SB													0.0	A															
	37th St at 21st Ave/E Frontage Rd (Sign	EB	32	858	82	972			13.2	B	7.9	A	2.3	A	7.6	A			200	20	37			397	76	145			200	20	20
		WB	73	864	44	981			13.3	B	8.8	A	1.9	A	8.8	A	12.1	B	195	29	60		1 %	960	94	189			300	20	20
		NB	111	41	83	235			49.8	D	39.4	D	16.4	B	36.0	D			150	75	136			888	58	121					
		SB	49	56	75	180			40.1	D	23.3	C	9.6	A	22.5	C								686	76	142	2 %		130	37	71
	Marketplace Dr at E RTC Access	EB	1			1			8.1	A					8.1	A			970	20	20										
		WB													0.0	A	0.8	A													
		NB		212		212					1.1	A			1.1	A															
		SB		274	1	275					0.5	A	0.1	A	0.5	A															
	Valleyhigh Dr at Watson Ave	EB													0.0	A															
		WB	49		64	113			10.4	B			4.0	A	6.7	A	1.5	A						1199	32	59					
		NB		374	36	410					0.4	A	0.6	A	0.4	A													305		20
		SB	64	373		437			4.0	A	0.8	A			1.2	A			260	20	43										
	19th St at W Frontage Rd (Signal)	EB	34	840	10	884			19.1	B	12.1	B	8.5	A	12.3	B			100	28	91		9 %	1122	132	239	9 %				
		WB	106	791	106	1,003			17.2	B	12.2	B	10.2	B	12.5	B	16.4	B	110	50	108		7 %	265	133	248	7 %				
		NB	18	50	192	260			40.8	D	42.9	D	13.0	B	20.6	C			225	20	41			888	38	83			445	63	113
		SB	179	48	57	284			47.8	D	35.6	D	17.2	B	39.6	D			250	105	186			702	46	118					
	19th St at US 52 Interchange (Signal)	EB	240	439	532	1,211			48.0	D	21.5	C			30.9	C			175	96	151			284	105	190	1 %				
		WB	332	371	252	955			36.8	D	19.6	B			27.7	C	31.4	C	555	146	230			812	109	186					
		NB	403		403	806			38.7	D					38.7	D			860	212	334										
		SB	203		229	432			30.2	C					30.2	C			865	104	176										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B2a
Rochester Tech Campus
2027 No Build Conditions
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] ---->	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	17	259	100	376			37.8	D	54.2	D	2.4	A	40.4	D			305	20	39			944	115	176			170	20	20
		WB	178	143	14	335			42.4	D	31.8	C	14.8	B	36.6	D	22.5	C	290	112	200			1236	42	90					
		NB	79	324	288	691			18.6	B	10.7	B	4.5	A	9.1	A			330	32	70			1200	40	88			325	35	70
		SB	41	468	26	535			16.6	B	19.3	B	2.8	A	18.3	B			270	20	51			922	113	189			270	20	29
	41st St at 31st Ave/RTC West (Signal)	EB	71	276	222	569			10.4	B	7.3	A	4.7	A	6.7	A			200	29	57			1212	46	94			135	47	91
		WB	14	255	41	310			11.7	B	7.5	A	5.1	A	7.4	A	8.5	A	165	20	35			1336	59	117					
		NB	61	25	5	91			14.9	B	18.6	B	3.1	A	15.4	B			130	27	60			597	20	36					
		SB	83	41	37	161			15.4	B	20.0	C	5.5	A	14.1	B			100	39	74			906	36	74					
	41st St at W Frontage Rd/Marketplace D	EB	26	286	24	336			15.5	B	10.3	B	4.0	A	10.2	B			160	20	40			1336	54	119	3 %		95	20	45
		WB	66	358	229	653			9.3	A	6.1	A	3.8	A	5.6	A	15.2	B	435	20	47			434	38	87			160	29	63
		NB	55	73	75	203			41.9	D	40.3	D	0.7	A	26.1	C			310	37	78			272	46	97					
		SB	133	66	32	231			44.0	D	42.2	D	20.0	C	40.0	D			270	60	122			140	47	102					
	41st St at SB US 52 Ramp (Signal)	EB		241	253	494					10.9	B	8.2	A	9.5	A								450	49	107			440	47	109
		WB	263	476		739			21.4	C	11.2	B			14.7	B	18.9	B	190	96	193			576	108	216					
		NB													0.0	A														
		SB	38	371	177	586			41.1	D	41.8	D	9.8	A	32.2	C								953	223	354	4 %		275	51	129
	41st St at NB US 52 Ramp/E Frontage R	EB	52	227		279			10.8	B	4.0	A			5.2	A			230	23	56			576	22	63					
		WB		507	33	540					8.9	A	6.1	A	8.7	A	12.8	B						345	59	141					
		NB	232	5	113	350			35.2	D	24.5	C	2.9	A	24.6	C			625	43	116			625	69	154			315	26	57
		SB													0.0	A														
	41st St at E Frontage Rd (Signal)	EB	137	179	24	340			6.6	A	1.9	A	1.0	A	3.7	A			320	35	74			318	20	51					
		WB	13	294	44	351			5.0	A	2.9	A	0.9	A	2.7	A	6.0	A	345	20	20			457	38	98			125	20	25
		NB	18	11	9	38			45.3	D	24.7	C	11.2	B	29.3	C			95	20	48			830	20	51					
		SB	32	8	228	268			44.8	D	54.2	D	2.1	A	9.1	A			175	26	66			809	20	29			180	20	34
	Marketplace Dr at SE Target Access	EB	6		11	17			5.8	A			2.6	A	3.7	A			410	20	24								60	20	32
		WB													0.0	A	0.7	A												
		NB	62	181		243			2.4	A	0.3	A			0.8	A			200	20	29									
		SB		84	12	96					0.3	A	0.2	A	0.3	A														
	Marketplace Dr at Slip Ramp from 37th S	EB			5	5							3.4	A	3.4	A													110	20	23
		WB	11		155	166			5.3	A			3.7	A	3.8	A	1.9	A	60	20	27						1 %		390	29	55
		NB		89		89					0.5	A			0.5	A														
		SB		78	5	83					0.2	A	0.2	A	0.2	A														
	W Circle Dr at Valleyhigh Dr (Signal)	EB	152	240	200	592			56.1	E	49.1	D	3.2	A	34.9	C			290	92	159			1110	111	172					
		WB	43	81	101	225			62.9	E	57.4	E	3.0	A	33.9	C	32.3	C	295	38	83			1349	47	96					
		NB	121	438	78	637			61.9	E	28.8	C	5.2	A	31.8	C			295	84	147			1129	114	192			250	23	51
		SB	199	444	103	746			53.7	D	26.7	C	2.6	A	30.1	C			310	151	249			670	131	199					
	37th St at RTC West	EB													0.0	A														
		WB	71		80	151			2.8	A	0.4	A	2.3	A	1.1	A	3.3	A	80	20	20									
		NB		5	15	20					7.7	A	2.7	A	3.7	A								776	20	37					
		SB	231	34		265			7.5	A	4.3	A			6.8	A								727	57	87			130		
	37th St at RTC East	EB		151	52	203					0.4	A	0.1	A	0.3	A								800		20					
		WB	484	445		929			5.7	A	0.8	A			3.2	A	3.0	A	340	51	101			482		20					
		NB	38		87	125			18.8	C	0.3	A	2.5	A	7.1	A			680	27	58									
		SB													0.0	A														
	37th St at SB US 52 Ramp (Signal)	EB		141	97	238					5.1	A	0.2	A	3.1	A								650	20	32			200		
		WB	260	782		1,042			7.9	A	12.7	B			11.5	B	13.9	B	265	26	71			610	136	233					
		NB													0.0	A														
		SB	125		313	438			48.4	D	0.4	A	17.5	B	25.4	C								973	89	161			485	127	220
	37th St at NB US 52 Ramp (Signal)	EB	54	212		266			15.8	B	8.8	A			10.2	B			160	24	53			610	32	78					
		WB		566	136	702					16.6	B	4.8	A	14.3	B	19.1	B						405	137	233			185	29	72
		NB	476	329	353	1,158			32.6	C	29.4	C	8.1	A	24.1	C			820	124	214			1443	143	226			820	67	119
		SB													0.0	A														
	37th St at 21st Ave/E Frontage Rd (Sign	EB	13	526	26	565			7.5	A	2.7	A	1.3	A	2.7	A			200	20	20			397	20	54			200		20
		WB	26	666	22	714			6.2	A	2.9	A	0.8	A	3.0	A	5.2	A	195	20	30			960	36	92			300	20	20
		NB	36	9	15	60			53.4	D	50.3	D	7.2	A	41.0	D			150	29	69			888	20	33					
		SB	15	8		23			43.1	D	12.5	B			22.5	C								686	23	58					
	Watson Ave at RTC South	EB		14	2	16					5.8	A	3.3	A	5.5	A								983	20	38			160	20	20
		WB	63	52		115			5.7	A	1.8	A			2.5	A	2.8	A						1822	41	63					
		NB	10		218	228			4.2	A	0.1	A	3.2	A	3.2	A			380	20	24								190	38	61
		SB													0.0	A														
	Marketplace Dr at E RTC Access	EB	2			2			5.1	A					5.1	A			940	20	20									
		WB													0.0	A	0.3	A												
		NB		87		87					0.4	A			0.4	A														
		SB		92	9	101					0.2	A	0.1	A	0.2	A														
	Valleyhigh Dr at Watson Ave	EB													0.0	A														
		WB	19		21	40			11.5	B	0.1	A	3.0	A	6.8	A	1.4	A						543	20	41					
		NB		396	110	506					0.5	A	1.0	A	0.6	A													305	20	20
		SB	118	262		380			4.7	A	0.6	A			1.9	A			260	25	57									
	19th St at W Frontage Rd (Signal)	EB	18	551	10	579			13.0	B	7.8	A	4.3	A	7.9	A			100	20	30		2 %	1122	69	159	2 %				
		WB	143	810	67	1,020			12.9	B	9.6	A	7.5	A	9.9	A	11.7	B	110	48	105		3 %	265	106	201	3 %				
		NB	8	14	71	93			37.3	D	45.2	D	6.3	A	13.6	B			225	20	25			888	20	39			445	32	59
		SB	92	31	21	144			45.2	D	40.5	D	12.5	B	39.4	D			250	55	114			702	20	57					
	19th St at US 52 Interchange (Signal)	EB	105	333	276	714			47.2	D	23.7	C			29.3	C			175	56	100			284	87	145					
		WB	335	382	201	918			36.6	D	19.3	B			27.5	C	30.5	C	555	146	231			812	108	183					
		NB	394		446	840			34.9	C					34.9	C			860	201	332									
		SB	368		244	612			33.1	C					33.1	C			865	187	314									

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B2b
Rochester Tech Campus
2027 No Build Conditions
PM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] ---->	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB	30	214	91	335			42.5	D	57.2	E	2.3	A	41.6	D														
		WB	392	362	41	795			77.0	E	32.0	C	24.7	C	53.6	D	31.7	C	290	285	456			1236	189	550					
		NB	233	626	375	1,234			28.9	C	14.3	B	6.5	A	14.7	B			330	93	174			1200	70	139			325	45	97
		SB	48	450	34	532			35.2	D	32.9	C	5.2	A	31.3	C			270	31	71			922	135	216			270	20	36
	41st St at 31st Ave/RTC West (Signal)	EB	49	516	60	625			14.0	B	11.8	B	3.6	A	11.2	B			200	25	52			1212	85	148	1 %		135	21	49
		WB	11	459	62	532			12.0	B	15.5	B	8.8	A	14.7	B	14.1	B	165	20	28		2 %	1336	104	190	2 %				
		NB	198	53	32	283			17.1	B	19.9	B	11.5	B	17.2	B			130	68	124		1 %	597	41	91					
		SB	130	32	89	251			16.7	B	30.4	C	9.4	A	16.2	B			100	54	96		2 %	906	55	102					
	41st St at W Frontage Rd/Marketplace D	EB	69	681	60	810			23.7	C	32.7	C	13.3	B	30.5	C			160	41	110		9 %	1336	211	356	36 %		95	53	154
		WB	166	326	225	717			23.3	C	14.7	B	5.8	A	13.8	B	25.6	C	435	69	139			434	74	137			160	52	96
		NB	90	156	356	602			43.7	D	48.8	D	1.4	A	20.3	C			310	60	121			272	105	183			260	20	33
		SB	386	149	49	584			40.5	D	40.5	D	26.3	C	39.3	D			270	160	268		5 %	140	108	202					
	41st St at SB US 52 Ramp (Signal)	EB		770	653	1,423					17.6	B	19.4	B	18.4	B								450	171	312			440	196	366
		WB	336	585		921			93.5	F	7.9	A			38.0	D	27.6	C	190	233	356			576	225	600					
		NB													0.0	A														
		SB	72	168	132	372			50.1	D	51.7	D	10.4	B	36.5	D								953	156	277	1 %		275	44	99
	41st St at NB US 52 Ramp/E Frontage R	EB	216	626		842			24.9	C	8.8	A			13.0	B			230	93	185			576	77	164					
		WB		696	112	808					26.8	C	17.1	B	25.5	C	19.9	B						345	156	312					
		NB	225	15	230	470			39.0	D	36.5	D	5.7	A	22.6	C			625	55	152			625	73	176			315	44	103
		SB													0.0	A														
	41st St at E Frontage Rd (Signal)	EB	293	455	108	856			16.3	B	7.6	A	3.1	A	10.1	B			320	97	167			318	78	135					
		WB	36	350	49	435			11.6	B	12.6	B	2.7	A	11.4	B	15.8	B	345	20	40		5 %	457	100	204	5 %		125	20	68
		NB	127	52	53	232			41.3	D	47.1	D	19.0	B	37.6	D			95	84	148		8 %	830	85	177					
		SB	100	62	331	493			40.5	D	52.2	D	6.9	A	19.0	B			175	66	124			809	60	181		2 %	180	45	154
	Marketplace Dr at SE Target Access	EB	52		62	114			12.3	B			3.1	A	7.4	A			410	29	55								60	27	47
		WB													0.0	A	1.5	A												
		NB	263	429		692			2.4	A	0.7	A			1.3	A			200		20									
		SB									0.2	A			0.2	A														
	Marketplace Dr at Slip Ramp from 37th S	EB			8	8							3.6	A	3.6	A													110	20	28
		WB	22		398	420			11.6	B	2.0	A	12.4	B	12.3	B	6.0	A	60	21	74							24 %	390	111	203
		NB		246		246					1.4	A			1.4	A														
		SB		256	5	261					0.3	A	0.1	A	0.3	A														
	W Circle Dr at Valleyhigh Dr (Signal)	EB	150	94	249	493			63.9	E	58.9	E	2.9	A	30.8	C			290	86	148			1110	56	108					
		WB	88	219	250	557			53.4	D	52.1	D	3.5	A	29.7	C	30.3	C	295	66	127			1349	95	154					
		NB	259	834	69	1,162			60.1	E	30.4	C	5.1	A	35.7	D			295	154	231		1 %	1129	196	297	3 %		250	20	44
		SB	111	675	153	939			55.7	E	23.3	C	2.9	A	23.6	C			310	85	153			670	156	232					
	37th St at RTC West	EB													0.0	A														
		WB	20		265	285			2.3	A	0.1	A	3.1	A	3.0	A	3.8	A						1172		20			585	20	20
		NB		20	66	86					6.4	A	3.1	A	3.9	A								776	30	52					
		SB	102	9		111			5.7	A	4.6	A			5.5	A								727	37	57			130		
	37th St at RTC East	EB		425	37	462					0.7	A	0.1	A	0.7	A								800	20	20					
		WB	116	227		343			4.8	A	0.6	A			2.0	A	2.6	A	340	25	59										
		NB	54		443	497			10.4	B			4.1	A	4.8	A			680	30	63							1 %	130	20	87
		SB													0.0	A														
	37th St at SB US 52 Ramp (Signal)	EB		444	424	868					14.4	B	0.6	A	7.6	A								650	77	128			200		20
		WB	535	688		1,223			30.6	C	14.6	B			21.4	C	19.3	B	265	161	306		1 %	610	161	265					
		NB													0.0	A														
		SB	242	5	75	322			53.4	D	33.4	C	8.4	A	42.3	D								973	181	289			485	35	68
	37th St at NB US 52 Ramp (Signal)	EB	300	386		686			55.9	E	10.9	B			30.1	C			160	180	288			610	103	253					
		WB		844	232	1,076					27.0	C	9.3	A	23.2	C	27.2	C						405	229	354	7 %		185	58	153
		NB	379	450	531	1,360			38.0	D	37.8	D	14.9	B	28.9	C			820	94	200			1443	213	296			820	122	215
		SB													0.0	A														
	37th St at 21st Ave/E Frontage Rd (Sign	EB	26	807	84	917			15.8	B	8.4	A	2.5	A	8.1	A			200	20	33			397	76	143			200	20	20
		WB	74	889	44	1,007			13.9	B	8.7	A	1.8	A	8.8	A	12.4	B	195	30	63			960	93	180			300	20	20
		NB	113	41	84	238			49.0	D	37.0	D	15.7	B	35.3	D			150	81	144		1 %	888	60	128					
		SB	49	56	74	179			37.0	D	24.7	C	8.9	A	21.6	C								686	69	133	1 %		130	35	73
	Watson Ave at RTC South	EB		54	9	63					6.3	A	2.8	A	5.8	A								983	28	53			160	20	28
		WB	198	15		213			6.1	A	7.3	A			6.2	A	5.5	A						1822	50	72					
		NB	3		51	54			4.8	A	0.0	A	2.3	A	2.4	A			380	20	20								190	20	37
		SB													0.0	A														
	Marketplace Dr at E RTC Access	EB	13			13			6.4	A					6.4	A			940	20	28									
		WB													0.0	A	0.8	A												
		NB		215		215					1.0	A			1.0	A														
		SB		277	7	284					0.4	A	0.2	A	0.4	A														
	Valleyhigh Dr at Watson Ave	EB													0.0	A														
		WB	100		107	207			11.6	B	0.3	A	5.7	A	7.8	A	2.1	A						543	50	87					
		NB		402	26	428					0.4	A	0.7	A	0.4	A													305		20
		SB	28	401		429			3.6	A	0.8	A			1.0	A			260	20	27									
	19th St at W Frontage Rd (Signal)	EB	34	811	10	855			16.2	B	12.2	B	8.4	A	12.3	B			100	24	79		8 %	1122	128	233	8 %				
		WB	107	769	106	982			15.6	B	12.0	B	10.3	B	12.2	B	16.1	B	110	47	105		6 %	265	131	236	6 %				
		NB	19	50	193	262			34.7	C	44.2	D	12.1	B	20.4	C			225	20	44			888	40	83			445	60	105
		SB	179	48	57	284			44.2	D	36.6	D	14.8	B	37.5	D			250	103	177			702	42	106					
	19th St at US 52 Interchange (Signal)	EB	243	421	519	1,183			46.4	D	20.4	C			29.8	C			175	91	141			284	102	197	1 %				
		WB	333	358	254	945			37.7	D	20.0	C			28.3	C	31.0	C	555	146	221			812	100	165					
		NB	393		405	798			37.9	D					37.9	D			860	207	312									
		SB	205		231	436			30.3	C					30.3	C			865	104	179									

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B3a
Rochester Tech Campus
2027 No Build Conditions - Mitigated
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane				Through Lane (s)					Right Turn Lane				
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] <----	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	17	259	100	376			38.2	D	51.1	D	2.4	A	37.4	D																
		WB	178	143	14	335			38.3	D	31.5	C	13.4	B	34.4	C	19.4	B	290	62	113			1236	39	88						
		NB	79	324	288	691			13.0	B	3.6	A	3.8	A	4.7	A			330	29	66			1197	20	48			325	28	71	
		SB	41	468	26	535			18.3	B	15.7	B	2.5	A	15.3	B			270	21	51			922	101	185			270	20	28	
	41st St at 31st Ave/RTC West (Signal)	EB	71	276	222	569			10.7	B	7.7	A	4.7	A	6.9	A			200	30	69			1212	46	92			135	47	87	
		WB	14	255	41	310			11.9	B	7.3	A	5.5	A	7.3	A	8.5	A	165	20	32			1336	57	102						
		NB	61	25	5	91			13.9	B	19.1	B	4.1	A	14.8	B			130	24	54			597	20	38						
		SB	83	41	37	161			15.1	B	19.2	B	6.8	A	14.3	B			100	38	77			906	39	76						
	41st St at W Frontage Rd/Marketplace D	EB	26	286	24	336			16.4	B	10.8	B	3.7	A	10.7	B			160	20	41			1336	54	121	2 %		95	20	39	
		WB	66	358	229	653			9.0	A	5.8	A	2.8	A	5.1	A	14.9	B	435	20	46			433	40	83			160	27	60	
		NB	55	73	75	203			42.5	D	41.1	D	0.7	A	27.3	C			310	40	81			272	49	104						
		SB	133	66	32	231			42.2	D	44.0	D	17.4	B	38.9	D			270	56	113			140	43	93						
	41st St at SB US 52 Ramp (Signal)	EB		241	253	494					8.3	A	8.8	A	8.6	A								450	32	85			440	50	142	
		WB	263	476		739			17.0	B	5.7	A			9.6	A	15.6	B	220	80	158			576	37	87						
		NB													0.0	A																
		SB	38	371	177	586			34.0	C	37.8	D	9.0	A	28.8	C			290	20	49		3 %	953	200	321	3 %		290	48	112	
	41st St at NB US 52 Ramp/E Frontage R	EB	52	227		279			9.4	A	2.9	A			4.0	A			250	21	54			576	20	62						
		WB		507	33	540					7.9	A	5.2	A	7.7	A	8.7	A						345	58	119						
		NB	232	5	113	350			18.9	B	7.8	A	3.2	A	13.7	B			625	36	82			625	71	123			315	28	52	
		SB													0.0	A																
	41st St at E Frontage Rd (Signal)	EB	137	179	24	340			5.6	A	1.1	A	0.7	A	2.9	A			320	29	60			318	20	30						
		WB	13	294	44	351			4.7	A	2.3	A	1.0	A	2.2	A	5.4	A	345	20	20			457	30	82			125	20	25	
		NB	18	11	9	38			43.3	D	21.6	C	9.8	A	26.5	C			225	20	51			830	20	52						
		SB	32	8	228	268			44.5	D	53.0	D	2.1	A	8.5	A			175	25	66			809	20	28			180	20	39	
	Marketplace Dr at SE Target Access	EB	6		11	17			5.4	A			2.6	A	3.5	A			410	20	23								60	20	33	
		WB													0.0	A	0.7	A														
		NB	62	181		243			2.4	A	0.3	A			0.8	A			200	20	28											
		SB		84	12	96					0.2	A	0.1	A	0.2	A																
	Marketplace Dr at Slip Ramp from 37th S	EB			5	5							2.9	A	2.9	A													110	20	21	
		WB	11		155	166			5.1	A			3.5	A	3.6	A	1.9	A	60	20	28								390	29	55	
		NB		89		89					0.5	A			0.5	A																
		SB		78	5	83					0.2	A	0.1	A	0.2	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB	152	240	200	592			52.2	D	47.9	D	3.2	A	33.9	C			290	88	152			1110	110	182						
		WB	43	81	101	225			58.4	E	56.7	E	3.1	A	33.4	C	31.2	C	295	36	81			1349	45	91						
		NB	121	438	78	637			61.1	E	35.0	D	5.9	A	36.0	D			295	82	143			1129	125	212			250	25	51	
		SB	199	444	103	746			46.9	D	19.5	B	2.5	A	24.4	C			310	141	241			670	91	150						
	37th St at RTC West	EB													0.0	A																
		WB	71		80	151			2.8	A	0.4	A	2.3	A	1.0	A	3.2	A	80	20	20											
		NB		5	15	20					7.4	A	2.7	A	3.6	A								776	20	37						
		SB	231	34		265			7.5	A	4.1	A			6.7	A								727	57	91						
	37th St at RTC East	EB		151	52	203					0.4	A	0.2	A	0.4	A								800		20						
		WB	484	445		929			5.3	A	0.6	A			2.9	A	2.9	A	340	44	89											
		NB	38		87	125			20.2	C	0.3	A	2.5	A	7.4	A			680	25	56											
		SB													0.0	A													130			
	37th St at SB US 52 Ramp (Signal)	EB		141	97	238					6.9	A	0.6	A	4.3	A								650	20	47			200			
		WB	260	782		1,042			11.1	B	8.1	A			8.8	A	12.2	B	265	46	107			610	75	169						
		NB													0.0	A																
		SB	125		313	438			42.8	D	0.5	A	16.3	B	23.5	C								972	84	175			485	110	228	
	37th St at NB US 52 Ramp (Signal)	EB	54	212		266			17.8	B	5.5	A			7.7	A			175	20	43			610	20	54						
		WB		566	136	702					13.3	B	4.2	A	11.5	B	18.5	B						405	111	203			185	20	51	
		NB	476	329	353	1,158			34.5	C	29.8	C	8.8	A	25.3	C			820	135	218			1438	115	191			820	70	132	
		SB													0.0	A																
	37th St at 21st Ave/E Frontage Rd (Sign	EB	13	526	26	565			7.3	A	2.1	A	1.0	A	2.2	A			200	20	20			390	20	54			200	20	20	
		WB	26	666	22	714			6.3	A	3.0	A	0.9	A	3.0	A	4.8	A	195	20	31			960	41	106			300	20	20	
		NB	36	9	15	60			50.1	D	50.0	D	8.2	A	40.0	D			150	25	65			888	20	38						
		SB	15	8		23			47.9	D	13.8	B			23.9	C								686	20	52						
	Watson Ave at RTC South	EB		14	2	16					6.2	A	2.9	A	5.8	A								983	20	36			160	20	20	
		WB	63	52		115			5.5	A	1.7	A			2.4	A	2.9	A						1822	39	61						
		NB	10		218	228			4.1	A	0.0	A	3.4	A	3.4	A			380	20	25								190	40	64	
		SB													0.0	A																
	Marketplace Dr at E RTC Access	EB	2			2			5.8	A					5.8	A			940	20	20											
		WB													0.0	A	0.4	A														
		NB		87		87					0.4	A			0.4	A																
		SB		92	9	101					0.2	A	0.1	A	0.2	A																
	Valleyhigh Dr at Watson Ave	EB													0.0	A																
		WB	19		21	40			10.8	B	0.1	A	2.8	A	5.9	A	1.3	A						543	20	37						
		NB		368	110	478					0.5	A	1.0	A	0.6	A								977		20			305	20	20	
		SB	118	244		362			4.6	A	0.6	A			1.8	A			260	25	53											
	19th St at W Frontage Rd (Signal)	EB	18	551	10	579			13.8	B	6.3	A	4.5	A	6.5	A			100	20	31		2 %	1122	60	134	2 %					
		WB	143	810	67	1,020			11.9	B	5.7	A	5.1	A	6.6	A	9.6	A	110	41	87			265	40	97						
		NB	8	14	71	93			42.6	D	48.1	D	6.0	A	15.3	B			225	20	25			888	20	41			445	32	55	
		SB	92	31	21	144			44.2	D	40.1	D	14.4	B	39.0	D			250	57	119			702	21	65						
	19th St at US 52 Interchange (Signal)	EB	105	333	276	714			42.7	D	24.7	C			29.0	C			175	56	95			284	89	149	1 %					
		WB	335	382	201	918			38.0	D	19.5	B			28.1	C	30.7	C	555	151	236			812	110	191						
		NB	394		446	840			34.3	C					34.3	C			860	190	312											
		SB	368		244	612			34.1	C					34.1	C			865	185	314											

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B3b
Rochester Tech Campus
2027 No Build Conditions - Mitigated
PM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] ---->	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB	30	214	91	335			48.5	D	55.4	E	2.3	A	39.8	D														
		WB	392	362	41	795			43.4	D	34.0	C	25.8	C	38.2	D	24.1	C												
		NB	233	626	375	1,234			20.6	C	8.1	A	5.3	A	9.7	A														
		SB	48	450	34	532			31.0	C	26.9	C	5.0	A	25.8	C														
	41st St at 31st Ave/RTC West (Signal)	EB	49	516	60	625			20.2	C	11.4	B	3.5	A	11.4	B														
		WB	11	459	62	532			22.3	C	13.3	B	8.1	A	12.9	B	13.0	B												
		NB	198	53	32	283			15.2	B	17.5	B	9.7	A	15.2	B														
		SB	130	32	89	251			15.4	B	27.7	C	8.6	A	14.6	B														
	41st St at W Frontage Rd/Marketplace D	EB	69	681	60	810			20.5	C	31.0	C	12.1	B	28.6	C														
		WB	166	326	225	717			27.2	C	25.0	C	6.1	A	19.6	B	27.6	C												
		NB	90	156	356	602			44.0	D	46.0	D	1.3	A	19.6	B														
		SB	386	149	49	584			46.1	D	44.8	D	29.5	C	44.4	D														
	41st St at SB US 52 Ramp (Signal)	EB		770	653	1,423					24.9	C	16.8	B	21.2	C														
		WB	336	585		921			17.3	B	5.0	A			9.2	A	19.0	B												
		NB													0.0	A														
		SB	72	168	132	372			50.2	D	48.7	D	8.7	A	34.9	C														
	41st St at NB US 52 Ramp/E Frontage R	EB	216	626		842			18.5	B	11.2	B			13.1	B														
		WB		696	112	808					17.1	B	12.3	B	16.4	B	16.0	B												
		NB	225	15	230	470			29.5	C	28.8	C	10.4	B	20.1	C														
		SB													0.0	A														
	41st St at E Frontage Rd (Signal)	EB	293	455	108	856			13.6	B	7.8	A	3.8	A	9.3	A														
		WB	36	350	49	435			19.2	B	13.6	B	3.0	A	12.8	B	16.2	B												
		NB	127	52	53	232			49.5	D	55.4	E	26.4	C	45.7	D														
		SB	100	62	331	493			44.8	D	51.1	D	3.6	A	17.5	B														
	Marketplace Dr at SE Target Access	EB	52		62	114			12.9	B			3.1	A	7.8	A														
		WB													0.0	A	1.5	A												
		NB	263	429		692			2.4	A	0.7	A			1.3	A														
		SB									0.2	A			0.2	A														
	Marketplace Dr at Slip Ramp from 37th S	EB			8	8							3.9	A	3.9	A														
		WB	22		398	420			10.2	B	3.4	A	10.6	B	10.6	B	5.2	A	60	20	66									
		NB		246		246					1.3	A			1.3	A														
		SB		256	5	261					0.3	A	0.1	A	0.3	A														
	W Circle Dr at Valleyhigh Dr (Signal)	EB	150	94	249	493			68.7	E	52.2	D	2.9	A	32.2	C														
		WB	88	219	250	557			58.9	E	51.7	D	3.5	A	31.5	C	30.8	C												
		NB	259	834	69	1,162			59.3	E	29.8	C	5.2	A	34.8	C														
		SB	111	675	153	939			58.9	E	24.0	C	3.0	A	24.7	C														
	37th St at RTC West	EB													0.0	A														
		WB	20		265	285			2.5	A	0.2	A	3.2	A	3.1	A	3.8	A	80		20									
		NB		20	66	86					6.6	A	2.9	A	3.8	A														
		SB	102	9		111			5.6	A	4.9	A			5.5	A														
	37th St at RTC East	EB		425	37	462					0.7	A	0.1	A	0.6	A														
		WB	116	227		343			4.9	A	0.6	A			2.0	A	2.6	A	340	26	63									
		NB	54		443	497			10.7	B			4.1	A	4.8	A			680	29	67									
		SB													0.0	A														
	37th St at SB US 52 Ramp (Signal)	EB		444	424	868					17.4	B	1.0	A	9.5	A														
		WB	535	688		1,223			24.6	C	11.3	B			17.0	B	16.8	B	265	169	246									
		NB													0.0	A														
		SB	242	5	75	322			45.0	D	24.1	C	7.8	A	35.7	D														
	37th St at NB US 52 Ramp (Signal)	EB	300	386		686			25.7	C	3.7	A			13.2	B			175	77	143									
		WB		844	232	1,076					43.4	D	16.2	B	37.5	D	31.9	C												
		NB	379	450	531	1,360			49.2	D	48.8	D	18.6	B	36.9	D			820	183	287									
		SB													0.0	A														
	37th St at 21st Ave/E Frontage Rd (Sign	EB	26	807	84	917			16.3	B	7.6	A	1.9	A	7.4	A														
		WB	74	889	44	1,007			14.9	B	12.8	B	2.3	A	12.5	B	14.3	B	195	33	89									
		NB	113	41	84	238			50.5	D	39.7	D	16.3	B	35.9	D			150	75	136									
		SB	49	56	74	179			47.1	D	29.0	C	15.9	B	28.7	C														
	Watson Ave at RTC South	EB		54	9	63					6.3	A	2.7	A	5.7	A														
		WB	198	15		213			6.4	A	7.5	A			6.5	A	5.7	A												
		NB	3		51	54			4.5	A	0.0	A	2.4	A	2.5	A			380	20	20									
		SB													0.0	A														
	Marketplace Dr at E RTC Access	EB	13			13			6.2	A					6.2	A			940	20	26									
		WB													0.0	A	0.7	A												
		NB		215		215					0.9	A			0.9	A														
		SB		277	7	284					0.4	A	0.1	A	0.4	A														
	Valleyhigh Dr at Watson Ave	EB													0.0	A														
		WB	100		107	207			12.4	B	0.4	A	6.0	A	8.5	A	2.3	A						543	52	94					
		NB		374	26	400					0.4	A	0.6	A	0.4	A														
		SB	28	373		401			3.4	A	0.8	A			1.0	A			260	20	27									
	19th St at W Frontage Rd (Signal)	EB	34	811	10	855			20.6	C	11.8	B	8.1	A	12.1	B			100	25	75		7 %	1122	124	226	7 %			
		WB	107	769	106	982			16.6	B	8.5	A	7.0	A	9.2	A	14.2	B	110	42	91		1 %	265	67	136	1 %			
		NB	19	50	193	262			35.9	D	45.2	D	12.9	B	20.7	C			225	20	43			888	39	82		445	63	109
		SB	179	48	57	284			37.8	D	32.8	C	11.9	B	32.1	C			250	105	181			702	37	91				
	19th St at US 52 Interchange (Signal)	EB	243	421	519	1,183			40.7	D	18.5	B			26.6	C			175	97	151			284	83	150	1 %			
		WB	333	358	254	945			45.1	D	20.3	C			32.3	C	31.3	C	555	164	243			812	103	169				
		NB	393		405	798			37.4	D					37.4	D			860	203	317									
		SB	205		231	436			30.8	C					30.8	C			865	103	181									

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B4a
Rochester Tech Campus
2027 Phase 1 Build Conditions - No Additional Mitigations (2027 No Build Mitigations Only)
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane				Through Lane (s)					Right Turn Lane				
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Left[2] <----	% Block Thru[2] ---->	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	17	264	103	384			35.9	D	53.6	D	2.6	A	39.2	D	20.3	C	305	20	34			944	112	173			170	20	23
		WB	209	161	16	386			38.4	D	31.5	C	11.9	B	34.5	C			290	72	123			1236	43	90					
		NB	82	324	297	703			14.5	B	4.0	A	4.5	A	5.4	A			330	30	67			1197	20	51			325	32	82
		SB	40	467	26	533			17.1	B	16.0	B	2.9	A	15.4	B			270	22	56			922	105	188			270	20	30
	41st St at NW MF Access	EB		581	8	589					2.1	A	2.4	A	2.1	A	1.8	A													
		WB	4	352		356			5.5	A	0.7	A			0.7	A								721	20	20					
		NB	23		10	33			11.1	B			5.2	A	9.4	A								501	20	46					
		SB													0.0	A															
	41st St at 31st Ave/RTC West (Signal)	EB	71	290	223	584			12.3	B	9.2	A	4.6	A	7.9	A	9.6	A	200	32	69			1212	52	101			135	48	85
		WB	27	261	41	329			13.0	B	8.4	A	5.6	A	8.4	A			165	20	45			1336	61	112					
		NB	87	27	49	163			14.8	B	21.0	C	5.7	A	13.1	B			130	33	67			597	25	56					
		SB	83	39	37	159			15.7	B	23.0	C	6.8	A	15.5	B			100	39	75	1 %		906	39	75					
	41st St at W Frontage Rd/Marketplace D	EB	26	338	30	394			15.4	B	11.4	B	3.9	A	11.1	B	14.9	B	160	20	42			1336	63	126	4 %		95	20	44
		WB	83	372	229	684			9.8	A	6.5	A	2.9	A	5.7	A			435	24	55			433	43	95			160	29	60
		NB	59	73	84	216			40.8	D	41.7	D	0.8	A	26.5	C			310	40	85			272	51	107			240		
		SB	133	66	32	231			42.1	D	40.3	D	17.5	B	38.1	D			270	53	111			140	44	98					
	41st St at SB US 52 Ramp (Signal)	EB		298	258	556					9.0	A	7.2	A	8.2	A	14.8	B						450	42	103			440	51	127
		WB	263	485		748			17.2	B	5.9	A			9.8	A			220	82	151			576	39	91					
		NB													0.0	A															
		SB	38	363	199	600			33.2	C	37.3	D	9.0	A	27.2	C			290	20	53	2 %		953	185	301	2 %		290	53	121
	41st St at NB US 52 Ramp/E Frontage R	EB	92	244		336			11.2	B	3.0	A			5.0	A	9.0	A	250	37	84			576	20	60					
		WB		516	33	549					8.7	A	6.2	A	8.5	A								345	63	138					
		NB	232	5	113	350			18.4	B	14.5	B	3.1	A	13.6	B			625	41	84			625	70	120			315	28	50
		SB													0.0	A															
	41st St at E Frontage Rd (Signal)	EB	137	196	24	357			5.7	A	1.2	A	0.7	A	2.9	A	5.3	A	320	30	63			318	20	38					
		WB	13	303	44	360			4.1	A	2.3	A	0.9	A	2.2	A			345	20	20			457	30	81			125	20	23
		NB	18	11	9	38			47.8	D	21.6	C	8.9	A	27.0	C			225	20	45			830	20	55					
		SB	32	8	228	268			44.6	D	43.8	D	2.0	A	8.2	A			175	25	64			809	20	31			180	20	32
	Marketplace Dr at SE Target Access	EB	6		11	17			7.0	A			2.9	A	4.3	A	0.7	A	410	20	24								60	20	34
		WB													0.0	A															
		NB	60	192		252			2.5	A	0.3	A			0.8	A			200	20	31										
		SB		107	12	119					0.3	A	0.1	A	0.3	A								510		20					
	Marketplace Dr at Slip Ramp from 37th St	EB			5	5							3.6	A	3.6	A	1.8	A											110	20	20
		WB	11		155	166			5.1	A			3.6	A	3.7	A			60	20	28								390	29	54
		NB		98		98					0.5	A			0.5	A															
		SB		101	5	106					0.2	A	0.2	A	0.2	A															
	W Circle Dr at Valleyhigh Dr (Signal)	EB	159	242	200	601			53.8	D	47.8	D	3.2	A	34.6	C	31.2	C	290	97	169			1110	112	174					
		WB	43	84	104	231			63.6	E	56.8	E	3.0	A	34.5	C			295	37	84			1349	50	101					
		NB	121	440	78	639			63.0	E	33.9	C	6.1	A	35.7	D			295	86	145			1129	126	211			250	25	51
		SB	201	452	126	779			46.4	D	20.0	C	2.6	A	24.1	C			310	148	244			670	94	150					
	37th St at RTC West	EB	2	12		14			3.2	A	0.2	A			0.5	A	3.8	A													
		WB	67	23	91	181			2.8	A	0.4	A	2.3	A	1.1	A			80	20	20										
		NB		4	15	19					8.1	A	2.8	A	3.6	A								776	20	36					
		SB	292	31	4	327			8.3	A	6.0	A	3.6	A	7.9	A								727	66	109			130	20	21
	37th St at RTC East	EB		221	63	284					0.5	A	0.2	A	0.4	A	2.9	A						800		20					
		WB	474	453		927			5.9	A	0.6	A			3.1	A			340	55	105										
		NB	39		97	136			21.7	C	0.5	A	2.6	A	7.7	A			680	26	59										
		SB													0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB		167	149	316					6.5	A	0.7	A	3.7	A	11.6	B						650	20	54			200		20
		WB	257	788		1,045			10.5	B	8.4	A			8.9	A			265	43	101			610	76	177					
		NB													0.0	A															
		SB	125		305	430			45.6	D	0.5	A	15.7	B	23.5	C								972	79	156			485	104	202
	37th St at NB US 52 Ramp (Signal)	EB	58	234		292			18.8	B	6.0	A			8.2	A	18.7	B	175	20	45			610	22	54					
		WB		571	134	705					13.5	B	4.2	A	11.8	B								405	118	221			185	20	52
		NB	474	329	353	1,156			35.4	D	30.5	C	8.5	A	25.7	C			820	134	227			800	111	185			820	68	119
		SB													0.0	A															
	37th St at 21st Ave/E Frontage Rd (Signa	EB	13	548	26	587			7.2	A	2.3	A	1.0	A	2.4	A	4.9	A	200	20	20			390	21	55			200	20	20
		WB	26	669	22	717			6.2	A	2.8	A	0.8	A	2.8	A			195	20	28			960	37	92			300	20	20
		NB	36	9	15	60			49.3	D	49.5	D	8.6	A	39.0	D			150	28	69			888	20	36					
		SB	15	8		23			50.4	D	10.8	B			21.9	C								686	20	52					
	Watson Ave at RTC South	EB		18	10	28					6.1	A	2.5	A	4.7	A	3.0	A						983	20	38			160	20	30
		WB	82	56		138			5.7	A	1.9	A			2.7	A								1822	42	65					
		NB	21		221	242			4.3	A	0.0	A	3.2	A	3.3	A			380	20	32								190	38	60
		SB													0.0	A															
	Marketplace Dr at E RTC Access	EB	17		22	39			5.3	A			2.1	A	3.5	A	1.0	A	940	20	29								110	20	23
		WB													0.0	A															
		NB	35	83		118			1.7	A	0.6	A			0.9	A			130	20	21										
		SB		84	34	118					0.3	A	0.2	A	0.3	A													170		20
	Valleyhigh Dr at Watson Ave	EB													0.0	A	1.6	A													
		WB	39		28	67			11.7	B	0.1	A	3.6	A	7.7	A								543	24	49					
		NB		394	119	513					0.5	A	1.0	A	0.6	A													305	20	20
		SB	123	261		384			4.7	A	0.6	A			1.9	A			260	24	54										
	19th St at W Frontage Rd (Signal)	EB	22	551	10	583			15.1	B	5.9	A	4.7	A	6.2	A	9.7	A	100	20	45	1 %		1122	57	133	1 %				
		WB	143	809	94	1,046			11.4	B	6.1	A	5.3	A	6.7	A			110	36	75			265	45	109					
		NB	8	14	71	93			35.8	D	53.7	D	6.1	A	15.3	B			225	20	27			888	20	39			445	31	55
		SB	107	31	25	163			45.6	D	38.9	D	15.3	B	40.0	D			250	62	124			702	23	68					
	19th St at US 52 Interchange (Signal)	EB	105	333	291	729			45.1	D	24.7	C			29.5	C	30.5	C	175	56	94			284	87	148	1 %				
		WB	335	382	201	918			38.0	D	19.5	B			28.1	C			555	146	234			812	111	188					
		NB	420		446	866			33.8	C					33.8	C			860	198	327										
		SB	368		244	612			32.6	C					32.6	C			865	182	304										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B4b
Rochester Tech Campus
2027 Phase 1 Build Conditions - No Additional Mitigations (2027 No Build Mitigations Only)
PM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane				Through Lane (s)					Right Turn Lane				
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Left[2] <----	% Block Thru[2] ---->	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB	30	236	100	366			45.1	D	55.3	E	2.4	A	39.1	D	24.2	C	305	20	50			944	107	166			170	20	23
		WB	401	364	39	804			43.6	D	33.4	C	26.3	C	38.1	D			290	136	217			1236	122	202					
		NB	239	626	404	1,269			22.1	C	8.6	A	5.8	A	10.2	B			330	88	160			1197	51	105			325	35	71
		SB	50	451	34	535			33.2	C	26.5	C	4.7	A	25.7	C			270	32	74			922	130	207			270	20	35
	41st St at NW MF Access	EB		642	22	664					1.9	A	1.8	A	1.9	A	1.8	A														
		WB	5	770		775			5.9	A	1.4	A			1.4	A								721	20	40					
		NB	13		8	21			16.5	C			5.1	A	11.5	B								501	20	41					
		SB													0.0	A																
	41st St at 31st Ave/RTC West (Signal)	EB	49	528	87	664			21.1	C	12.4	B	4.0	A	12.0	B	13.4	B	200	26	61			1212	88	150	1 %		135	26	56
		WB	52	466	62	580			20.6	C	13.2	B	7.9	A	13.2	B			165	31	79		1 %	1336	98	182	1 %				
		NB	192	54	56	302			15.9	B	17.4	B	10.2	B	15.3	B			130	62	**124**		1 %	597	44	97					
		SB	130	36	89	255			16.5	B	27.7	C	8.8	A	15.2	B			100	52	**95**		1 %	906	55	102					
	41st St at W Frontage Rd/Marketplace D	EB	69	706	71	846			21.5	C	32.4	C	11.6	B	29.7	C	27.8	C	160	36	98		11 %	1336	197	320	35 %		95	53	**149**
		WB	201	363	225	789			29.3	C	24.5	C	5.7	A	20.5	C			435	91	163			433	92	151			160	50	91
		NB	102	157	389	648			45.7	D	45.7	D	1.4	A	19.1	B			310	75	147			272	103	175			240	20	30
		SB	386	151	49	586			45.7	D	45.7	D	31.0	C	44.5	D			270	165	**274**		6 %	140	**112**	**206**					
	41st St at SB US 52 Ramp (Signal)	EB		824	656	1,480					25.8	C	17.6	B	22.2	C	19.6	B						450	202	**370**			440	184	**363**
		WB	336	602		938			18.0	B	5.3	A			9.7	A			220	115	**208**			576	52	123					
		NB													0.0	A																
		SB	72	172	187	431			50.1	D	48.6	D	9.9	A	32.3	C			290	47	101			953	111	209			290	50	93
	41st St at NB US 52 Ramp/E Frontage R	EB	258	638		896			18.8	B	11.0	B			13.3	B	16.6	B	250	108	207		1 %	576	143	275					
		WB		713	112	825					18.5	B	13.8	B	17.8	B								345	138	245					
		NB	225	15	230	470			30.2	C	28.3	C	10.6	B	20.5	C			625	80	138			625	110	180			315	104	169
		SB													0.0	A																
	41st St at E Frontage Rd (Signal)	EB	293	467	108	868			13.6	B	7.5	A	3.3	A	9.0	A	16.1	B	320	93	164			318	80	142					
		WB	36	367	49	452			17.4	B	14.3	B	3.1	A	13.3	B			345	20	47		8 %	457	124	234	8 %		125	23	93
		NB	127	52	53	232			50.9	D	56.4	E	25.4	C	46.3	D			225	82	145		9 %	830	77	140					
		SB	100	62	331	493			44.0	D	54.6	D	3.5	A	17.3	B			175	64	117			809	48	96			180	33	108
	Marketplace Dr at SE Target Access	EB	52		62	114			15.7	C			3.4	A	8.8	A	1.7	A	410	30	64								60	29	**49**
		WB													0.0	A																
		NB	265	476		741			2.6	A	0.7	A			1.4	A			200	20	38											
		SB		48		48					0.3	A			0.3	A																
	Marketplace Dr at Slip Ramp from 37th St	EB			8	8							4.1	A	4.1	A	5.4	A											110	20	28
		WB	22		398	420			11.6	B	1.9	A	12.1	B	12.1	B			60	22	**70**							22 %	390	102	190
		NB		295		295					1.4	A			1.4	A																
		SB		304	5	309					0.3	A	0.2	A	0.3	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB	172	108	249	529			70.9	E	53.5	D	2.9	A	35.3	D	31.8	C	290	110	185			1110	63	129					
		WB	88	224	256	568			59.8	E	49.2	D	3.5	A	30.3	C			295	69	134			1349	97	152					
		NB	259	841	69	1,169			57.2	E	31.1	C	5.6	A	35.5	D			295	149	220		1 %	1129	197	301	3 %		250	21	46
		SB	121	677	160	958			60.1	E	25.6	C	3.1	A	26.4	C			310	103	182			670	160	247					
	37th St at RTC West	EB	4	11		15			3.0	A	0.1	A			0.7	A	3.6	A	65		20											
		WB	17	35	285	337			2.7	A	0.2	A	3.1	A	2.8	A			80		20								585	20	20
		NB		16	54	70					6.3	A	3.0	A	3.7	A								776	28	47					
		SB	143	8	2	153			6.1	A	1.8	A	2.7	A	5.2	A								727	40	62			130	20	20
	37th St at RTC East	EB		395	53	448					0.8	A	0.2	A	0.7	A	2.7	A						800	20	20					
		WB	175	276		451			5.2	A	0.6	A			2.4	A			340	34	71											
		NB	58		440	498			12.1	B			4.0	A	4.9	A			680	29	56							1 %	130	20	66
		SB													0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB		425	411	836					17.3	B	1.0	A	9.4	A	17.0	B						650	93	131			200		20
		WB	525	792		1,317			25.2	C	11.6	B			16.9	B			265	165	**242**			610	115	207					
		NB													0.0	A																
		SB	242	5	79	326			44.8	D	34.4	C	8.8	A	36.1	D								972	198	323			485	36	75
	37th St at NB US 52 Ramp (Signal)	EB	280	387		667			24.3	C	3.8	A			12.0	B	33.1	C	175	67	131	1 %		610	20	55					
		WB		881	227	1,108					43.6	D	14.7	B	37.7	D								405	**339**	**455**	6 %		185	69	**153**
		NB	436	450	531	1,417			51.8	D	49.8	D	21.7	C	39.8	D			820	199	316			800	210	309			820	156	306
		SB													0.0	A																
	37th St at 21st Ave/E Frontage Rd (Signa	EB	26	808	84	918			16.9	B	7.7	A	2.0	A	7.4	A	15.0	B	200	20	34			390	70	128			200	20	20
		WB	74	921	44	1,039			16.6	B	14.7	B	1.8	A	14.3	B			195	41	134		7 %	960	154	307			300	20	20
		NB	113	41	84	238			50.1	D	41.8	D	16.8	B	36.8	D			150	78	**143**		1 %	888	60	137					
		SB	49	56	74	179			44.7	D	29.2	C	14.5	B	27.6	C								686	75	141	2 %		130	39	76
	Watson Ave at RTC South	EB		51	19	70					6.4	A	2.8	A	5.4	A	5.3	A						983	27	50			160	20	38
		WB	215	14		229			6.3	A	7.7	A			6.4	A								1822	50	73					
		NB	7		100	107			4.4	A			2.6	A	2.7	A			380	20	21								190	25	43
		SB													0.0	A																
	Marketplace Dr at E RTC Access	EB	88		119	207			9.7	A			4.1	A	6.3	A	2.6	A	940	29	54								110	26	47
		WB													0.0	A																
		NB	101	191		292			3.7	A	1.4	A			2.2	A			130	20	50											
		SB		240	86	326					0.8	A	0.4	A	0.7	A													170	20	20
	Valleyhigh Dr at Watson Ave	EB													0.0	A	2.6	A														
		WB	110		124	234			13.0	B	0.3	A	6.8	A	9.0	A								543	58	107					
		NB		397	50	447					0.4	A	0.8	A	0.4	A								977		20			305		20
		SB	57	396		453			3.8	A	0.8	A			1.2	A			260	20	37											
	19th St at W Frontage Rd (Signal)	EB	52	798	10	860			20.6	C	12.4	B	9.8	A	12.8	B	15.8	B	100	29	76		7 %	1122	130	240	7 %				
		WB	107	755	165	1,027			16.6	B	9.2	A	8.0	A	9.8	A			110	41	86		1 %	265	76	161	1 %				
		NB	19	50	193	262			33.1	C	41.6	D	14.0	B	20.3	C			225	20	43			888	36	81			445	68	118
		SB	241	48	74	363			44.1	D	32.3	C	13.5	B	36.1	D			250	139	**239**			702	55	142					
	19th St at US 52 Interchange (Signal)	EB	243	421	568	1,232			41.8	D	19.8	B			27.8	C	31.7	C	175	96	**149**			284	97	182	1 %				
		WB	333	358	254	945			43.6	D	20.9	C			31.6	C			555	155	226			812	98	166					
		NB	438		405	843			38.1	D					38.1	D			860	216	337											
		SB	205		231	436			29.8	C					29.8	C			865	103	182											

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B5a
Rochester Tech Campus
2027 Phase 1 Build Conditions - Mitigated
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Left[2] <----	% Block Thru[2] <----	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	17	264	103	384			32.3	C	53.6	D	2.5	A	38.9	D	19.7	B	305	20	34			944	112	176	1 %		170	20	20
		WB	209	161	16	386			37.4	D	31.4	C	10.7	B	33.7	C			290	67	116			1236	47	98					
		NB	82	324	297	703			13.4	B	4.3	A	4.2	A	5.3	A			330	32	71			1197	20	53			325	29	80
		SB	40	467	26	533			18.6	B	15.2	B	2.6	A	14.8	B			270	21	52			922	99	178			270	20	29
	41st St at NW MF Access	EB		581	8	589					2.1	A	2.5	A	2.1	A	1.7	A													
		WB	4	352		356			4.2	A	0.7	A			0.7	A								721	20	20					
		NB	23		10	33			10.1	B			4.0	A	8.2	A								501	20	46					
		SB													0.0	A															
	41st St at 31st Ave/RTC West (Signal)	EB	71	290	223	584			12.0	B	9.1	A	4.9	A	7.9	A	9.5	A	200	30	65			1212	54	100			135	49	91
		WB	27	261	41	329			12.5	B	8.3	A	5.2	A	8.3	A			165	20	46			1336	62	115					
		NB	87	27	49	163			15.3	B	22.5	C	6.1	A	13.6	B			130	34	69			597	24	56					
		SB	83	39	37	159			14.8	B	22.0	C	7.8	A	14.9	B			100	37	73			906	39	81					
	41st St at W Frontage Rd/Marketplace D	EB	26	338	30	394			15.6	B	11.6	B	4.2	A	11.3	B	15.0	B	160	20	42			1336	67	132	4 %		95	20	53
		WB	83	372	229	684			9.7	A	6.5	A	3.0	A	5.7	A			435	23	53			433	44	86			160	30	62
		NB	59	73	84	216			42.6	D	41.8	D	0.7	A	26.7	C			310	42	85			272	48	101			240		
		SB	133	66	32	231			42.9	D	43.7	D	19.7	B	40.0	D			270	50	105			140	45	97					
	41st St at SB US 52 Ramp (Signal)	EB		298	258	556					8.5	A	7.2	A	7.9	A	14.6	B						450	40	94			440	48	119
		WB	263	485		748			17.1	B	5.4	A			9.3	A			220	79	154			576	36	85					
		NB													0.0	A															
		SB	38	363	199	600			33.9	C	37.1	D	9.6	A	27.8	C			290	20	53	1 %		953	183	291	1 %		290	50	93
	41st St at NB US 52 Ramp/E Frontage R	EB	92	244		336			10.6	B	3.2	A			5.1	A	9.3	A	250	36	79			576	20	65					
		WB		516	33	549					9.0	A	6.1	A	8.8	A								345	65	143					
		NB	232	5	113	350			19.1	B	9.5	A	3.1	A	13.8	B			625	40	84			625	73	132			315	28	54
		SB													0.0	A															
	41st St at E Frontage Rd (Signal)	EB	137	196	24	357			5.4	A	1.0	A	0.7	A	2.7	A	5.3	A	320	28	58			318	20	31					
		WB	13	303	44	360			4.3	A	2.2	A	1.0	A	2.1	A			345	20	20			457	30	81			125	20	27
		NB	18	11	9	38			41.6	D	23.8	C	8.3	A	27.2	C			225	20	50			830	20	51					
		SB	32	8	228	268			47.0	D	48.0	D	2.1	A	8.7	A			175	24	69			809	20	31			180	20	39
	Marketplace Dr at SE Target Access	EB	6		11	17			6.4	A			3.0	A	4.1	A	0.7	A	410	20	25								60	20	32
		WB													0.0	A															
		NB	60	192		252			2.5	A	0.3	A			0.8	A			200	20	30										
		SB		107	12	119					0.2	A	0.2	A	0.2	A								510		20					
	Marketplace Dr at Slip Ramp from 37th St	EB			5	5							2.8	A	2.8	A	1.7	A											110	20	22
		WB	11		155	166			4.8	A			3.5	A	3.6	A			60	20	27								390	28	52
		NB		98		98					0.5	A			0.5	A															
		SB		101	5	106					0.2	A	0.1	A	0.2	A															
	W Circle Dr at Valleyhigh Dr (Signal)	EB	159	242	200	601			52.3	D	50.2	D	3.3	A	35.0	D	31.3	C	290	92	158			1110	113	177					
		WB	43	84	104	231			58.7	E	56.5	E	3.1	A	32.9	C			295	36	80			1349	46	92					
		NB	121	440	78	639			61.3	E	34.6	C	5.8	A	35.9	D			295	87	150			1129	135	217			250	25	52
		SB	201	452	126	779			47.7	D	20.0	C	2.6	A	24.1	C			310	143	250			670	97	157					
	37th St at RTC West	EB	2	12		14			2.0	A	0.2	A			0.5	A	3.8	A	65		20										
		WB	67	23	91	181			2.9	A	0.4	A	2.3	A	1.1	A			80	20	20										
		NB		4	15	19					8.0	A	2.7	A	3.3	A								776	20	36					
		SB	292	31	4	327			8.1	A	5.9	A	3.2	A	7.7	A								727	65	105			130	20	23
	37th St at RTC East	EB		221	63	284					0.5	A	0.2	A	0.4	A	2.9	A						800							
		WB	474	453		927			5.9	A	0.6	A			3.2	A			340	56	105			482		20					
		NB	39		97	136			20.1	C	0.4	A	2.5	A	7.1	A			680	26	55										
		SB													0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB		167	149	316					7.2	A	0.7	A	4.1	A	11.5	B						650	20	56			200		
		WB	257	788		1,045			11.1	B	8.3	A			9.0	A			265	44	99			610	75	176					
		NB													0.0	A															
		SB	125		305	430			42.4	D	0.5	A	15.1	B	22.4	C								972	77	159			485	103	208
	37th St at NB US 52 Ramp (Signal)	EB	58	234		292			18.6	B	5.8	A			7.9	A	18.3	B	175	20	47			610	20	57					
		WB		571	134	705					13.9	B	4.3	A	12.1	B								405	115	205			185	20	48
		NB	474	329	353	1,156			33.8	C	29.8	C	8.1	A	24.9	C			820	129	217			800	115	189			820	66	123
		SB													0.0	A															
	37th St at 21st Ave/E Frontage Rd (Signa	EB	13	548	26	587			7.6	A	2.3	A	0.9	A	2.3	A	5.1	A	200	20	20			390	20	54			200		20
		WB	26	669	22	717			6.3	A	3.0	A	0.9	A	3.1	A			195	20	31			960	38	95			300	20	20
		NB	36	9	15	60			53.0	D	49.4	D	7.6	A	40.2	D			200	30	76			888	20	36					
		SB	15	8		23			44.8	D	13.4	B			24.6	C								686	21	58					
	Watson Ave at RTC South	EB		18	10	28					6.0	A	2.5	A	4.8	A	3.1	A						983	20	40			160	20	31
		WB	82	56		138			5.8	A	1.8	A			2.7	A								1822	41	67					
		NB	21		221	242			4.3	A	0.0	A	3.3	A	3.4	A			380	20	34								190	38	62
		SB													0.0	A															
	Marketplace Dr at E RTC Access	EB	17		22	39			5.1	A			2.1	A	3.4	A	1.0	A	940	20	30								110	20	22
		WB													0.0	A															
		NB	35	83		118			1.6	A	0.6	A			0.9	A			130	20	20										
		SB		84	34	118					0.3	A	0.2	A	0.3	A															
	Valleyhigh Dr at Watson Ave	EB													0.0	A	1.7	A													
		WB	39		28	67			11.9	B	0.1	A	3.4	A	7.8	A								543	25	49					
		NB		394	119	513					0.5	A	1.0	A	0.6	A													305	20	20
		SB	123	261		384			5.0	A	0.7	A			2.0	A			260	27	59										
	19th St at W Frontage Rd (Signal)	EB	22	551	10	583			16.4	B	5.9	A	3.2	A	6.2	A	9.8	A	100	20	36	1 %		1122	53	124	1 %				
		WB	143	809	94	1,046			11.6	B	6.2	A	5.9	A	6.9	A			110	37	83			265	49	120					
		NB	8	14	71	93			38.3	D	48.3	D	5.9	A	15.8	B			225	20	30			888	20	48			445	31	57
		SB	107	31	25	163			42.8	D	39.5	D	13.2	B	37.3	D			250	62	123			702	22	63					
	19th St at US 52 Interchange (Signal)	EB	105	333	291	729			44.4	D	23.6	C			28.5	C	30.8	C	175	53	94			284	81	145	1 %				
		WB	335	382	201	918			38.6	D	19.1	B			28.4	C			555	153	237			812	108	181					
		NB	420		446	866			34.2	C					34.2	C			860	202	332										
		SB	368		244	612			34.3	C					34.3	C			865	183	307										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B5b
Rochester Tech Campus
2027 Phase 1 Build Conditions - Mitigated
PM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane				Through Lane (s)					Right Turn Lane				
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Left[2] <----	% Block Thru[2] ---->	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB	30	236	100	366			50.3	D	56.5	E	2.4	A	41.5	D	24.5	C	305	21	54			944	110	164			170	20	20
		WB	401	364	39	804			43.7	D	34.6	C	26.5	C	38.7	D			290	139	219			1236	123	200					
		NB	239	626	404	1,269			21.1	C	8.6	A	5.8	A	10.0	B			330	85	161			1197	47	103			325	36	71
		SB	50	451	34	535			33.2	C	25.7	C	4.9	A	25.1	C			270	35	83			922	129	207			270	20	35
	41st St at NW MF Access	EB		642	22	664					2.0	A	1.8	A	2.0	A	1.8	A														
		WB	5	770		775			6.4	A	1.2	A			1.2	A								721	20	37					
		NB	13		8	21			19.0	C			4.1	A	13.4	B								501	20	44					
		SB													0.0	A																
	41st St at 31st Ave/RTC West (Signal)	EB	49	528	87	664			21.2	C	12.9	B	4.2	A	12.3	B	13.9	B	200	27	57			1212	92	159	2 %		135	28	57
		WB	52	466	62	580			21.2	C	13.8	B	8.9	A	13.9	B			165	32	72	2 %		1336	107	189	2 %				
		NB	192	54	56	302			15.7	B	18.5	B	10.4	B	15.4	B			130	66	**124**			597	42	86					
		SB	130	36	89	255			16.4	B	28.3	C	10.7	B	16.2	B			100	56	**99**	2 %		906	56	112					
	41st St at W Frontage Rd/Marketplace D	EB	69	706	71	846			23.3	C	35.5	D	13.9	B	32.7	C	28.7	C	160	42	117	12 %		1336	216	368	39 %		95	66	**171**
		WB	201	363	225	789			29.4	C	24.9	C	6.1	A	20.8	C			435	92	155			433	95	154	1 %		160	51	92
		NB	102	157	389	648			44.1	D	47.9	D	1.5	A	19.9	B			310	71	132			272	112	194			260	20	50
		SB	386	151	49	586			45.2	D	44.7	D	29.1	C	43.7	D			270	162	**282**	5 %		140	**115**	**219**					
	41st St at SB US 52 Ramp (Signal)	EB		824	656	1,480					26.9	C	17.5	B	22.8	C	19.8	B						450	203	**408**			440	185	**376**
		WB	336	602		938			18.4	B	5.3	A			9.8	A			220	117	**209**			576	55	135					
		NB													0.0	A																
		SB	72	172	187	431			48.8	D	49.4	D	10.2	B	31.8	C			290	47	98			953	109	203			290	52	100
	41st St at NB US 52 Ramp/E Frontage R	EB	258	638		896			19.6	B	11.4	B			13.8	B	17.1	B	250	109	207	1 %		576	152	276					
		WB		713	112	825					19.1	B	14.0	B	18.4	B								345	143	254					
		NB	225	15	230	470			30.5	C	28.6	C	10.9	B	20.7	C			625	80	139			625	109	175			315	107	175
		SB													0.0	A																
	41st St at E Frontage Rd (Signal)	EB	293	467	108	868			14.8	B	7.0	A	3.6	A	9.2	A	15.7	B	320	100	172			318	75	140					
		WB	36	367	49	452			17.3	B	15.2	B	3.1	A	14.1	B			345	20	42	9 %		457	131	236	9 %		125	21	91
		NB	127	52	53	232			42.5	D	49.5	D	20.6	C	39.3	D			225	72	132			830	77	138					
		SB	100	62	331	493			43.9	D	48.5	D	4.1	A	17.8	B			175	68	126			809	52	105			180	40	129
	Marketplace Dr at SE Target Access	EB	52		62	114			16.2	C			3.4	A	8.7	A	1.7	A	410	29	63								60	29	**53**
		WB													0.0	A																
		NB	265	476		741			2.6	A	0.7	A			1.4	A			200	20	39											
		SB		48		48					0.3	A			0.3	A																
	Marketplace Dr at Slip Ramp from 37th St	EB			8	8							3.8	A	3.8	A	5.4	A											110	20	27
		WB	22		398	420			12.2	B	4.9	A	12.0	B	12.0	B			60	25	**77**							23 %	390	107	187
		NB		295		295					1.4	A			1.4	A																
		SB		304	5	309					0.3	A	0.1	A	0.3	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB	172	108	249	529			70.3	E	51.2	D	3.0	A	34.3	C	32.1	C	290	105	172			1110	61	115					
		WB	88	224	256	568			59.9	E	50.6	D	3.5	A	31.0	C			295	69	135			1349	100	153					
		NB	259	841	69	1,169			58.7	E	32.2	C	5.5	A	36.4	D			295	145	211	1 %		1129	206	302	3 %		250	20	47
		SB	121	677	160	958			60.3	E	25.7	C	3.1	A	26.6	C			310	103	185			670	161	253					
	37th St at RTC West	EB	4	11		15			2.2	A	0.2	A			0.7	A	3.7	A														
		WB	17	35	285	337			2.7	A	0.3	A	3.2	A	2.9	A			80		20											
		NB		16	54	70					6.7	A	2.9	A	3.7	A								776	27	46					
		SB	143	8	2	153			6.2	A	1.8	A	3.1	A	5.4	A								727	41	65			130	20	20
	37th St at RTC East	EB		395	53	448					0.8	A	0.2	A	0.7	A	2.7	A						800	20	20					
		WB	175	276		451			5.4	A	0.6	A			2.3	A			340	35	78											
		NB	58		440	498			12.7	B			4.0	A	5.0	A			680	30	60							1 %	130	20	79
		SB													0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB		425	411	836					17.5	B	1.0	A	9.4	A	16.5	B						650	94	130			200	20	20
		WB	525	792		1,317			24.3	C	10.8	B			16.0	B			265	159	**240**			610	115	214					
		NB													0.0	A																
		SB	242	5	79	326			45.0	D	38.3	D	9.2	A	36.5	D								972	196	312			485	38	73
	37th St at NB US 52 Ramp (Signal)	EB	280	387		667			23.3	C	3.6	A			11.6	B	29.6	C	175	63	119			610	20	47					
		WB		881	227	1,108					31.6	C	9.5	A	27.1	C								405	261	**413**	2 %		185	48	113
		NB	436	450	531	1,417			52.7	D	49.3	D	22.2	C	40.3	D			820	211	340			800	214	308			820	155	315
		SB													0.0	A																
	37th St at 21st Ave/E Frontage Rd (Signa	EB	26	808	84	918			13.1	B	8.8	A	2.2	A	8.3	A	13.5	B	200	20	29			390	91	158			200	20	22
		WB	74	921	44	1,039			13.5	B	9.6	A	2.0	A	9.6	A			195	30	72	2 %		960	120	233			300	20	20
		NB	113	41	84	238			64.9	E	45.1	D	21.5	C	45.9	D			200	81	151	1 %		888	68	205					
		SB	49	56	74	179			31.6	C	20.6	C	10.5	B	19.3	B								686	67	122	1 %		130	37	74
	Watson Ave at RTC South	EB		51	19	70					6.4	A	2.6	A	5.4	A	5.2	A						983	26	51			160	20	39
		WB	215	14		229			6.2	A	7.6	A			6.3	A								1822	49	72					
		NB	7		100	107			4.2	A			2.6	A	2.7	A			380	20	20								190	26	43
		SB													0.0	A																
	Marketplace Dr at E RTC Access	EB	88		119	207			10.0	B			4.0	A	6.5	A	2.7	A	940	30	54								110	24	44
		WB													0.0	A																
		NB	101	191		292			3.8	A	1.5	A			2.3	A			130	22	50											
		SB		240	86	326					0.8	A	0.5	A	0.7	A													170	20	20
	Valleyhigh Dr at Watson Ave	EB													0.0	A	2.7	A														
		WB	110		124	234			13.4	B	0.3	A	6.8	A	9.2	A								543	56	104					
		NB		397	50	447					0.5	A	0.8	A	0.5	A													305		20
		SB	57	396		453			4.2	A	0.8	A			1.2	A			260	20	41											
	19th St at W Frontage Rd (Signal)	EB	52	798	10	860			21.3	C	12.0	B	12.2	B	12.6	B	16.0	B	100	34	84	8 %		1122	125	229	8 %				
		WB	107	755	165	1,027			17.1	B	9.6	A	8.7	A	10.2	B			110	41	86	2 %		265	78	165	2 %				
		NB	19	50	193	262			30.4	C	43.2	D	13.4	B	20.8	C			225	20	44			888	41	87			445	64	109
		SB	241	48	74	363			45.1	D	33.7	C	13.1	B	37.3	D			250	142	**238**			702	52	147					
	19th St at US 52 Interchange (Signal)	EB	243	421	568	1,232			42.0	D	20.4	C			28.2	C	31.8	C	175	98	**153**			284	96	169	1 %				
		WB	333	358	254	945			43.4	D	21.5	C			31.8	C			555	153	231			812	102	175					
		NB	438		405	843			37.4	D					37.4	D			860	221	336											
		SB	205		231	436			29.5	C					29.5	C			865	103	182											

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B6a
Rochester Tech Campus
2028 Phase 2 Build Conditions
AM Peak Hour

	Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)											
																			Left Turn Lane				Through Lane (s)					Right Turn Lane			
			L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Thru [2] ---->	% Block Left [2] <----	Link Length (feet)	Avg. Queue (feet) [1]	95th% Queue (feet) [1]	% Block Right [2] ---->	% Block Thru [2] <----	Storage (feet) [3]	Avg. Queue (feet) [1]	95th% Queue (feet) [1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB	16	242	118	376			48.4	D	51.2	D	2.5	A	35.8	D	17.9	B	305	20	36			944	104	166			170	20	21
		WB	45	123	16	184			42.0	D	38.7	D	16.6	B	37.5	D			290	20	49			1236	41	90					
		NB	110	326	99	535			12.2	B	2.8	A	1.6	A	4.5	A			330	36	82			1197	20	37			325	20	31
		SB	40	467	26	533			13.2	B	11.7	B	2.1	A	11.3	B			270	20	49			922	86	163			270	20	26
	41st St at NW MF Access	EB		361	4	365					2.5	A	2.5	A	2.5	A	2.0	A						1236		20					
		WB	4	157		161			3.8	A	0.4	A			0.5	A								721	20	20					
		NB	12		10	22			8.0	A			3.6	A	5.6	A								501	20	41					
		SB													0.0	A															
	41st St at 31st Ave/RTC West (Signal)	EB	65	151	146	362			10.9	B	8.4	A	4.9	A	7.4	A	8.6	A	200	26	63			1212	30	71			135	42	90
		WB	42	134	41	217			11.5	B	6.2	A	3.9	A	6.6	A			165	22	54			1336	36	74					
		NB	27	35	61	123			14.5	B	19.1	B	5.8	A	11.5	B			130	20	37			597	30	66					
		SB	83	49	28	160			14.3	B	16.0	B	5.6	A	13.2	B			100	39	76			906	35	68					
	41st St at W Frontage Rd/Marketplace D	EB	26	207	42	275			16.5	B	11.8	B	3.6	A	11.0	B	16.3	B	160	20	41			1336	39	87	1 %		95	20	45
		WB	97	229	230	556			10.5	B	7.0	A	3.0	A	6.0	A			435	27	63			433	31	72			160	32	63
		NB	61	78	92	231			40.7	D	38.5	D	0.8	A	25.1	C			310	42	90			272	48	99			240		
		SB	134	68	32	234			41.5	D	43.6	D	17.1	B	38.9	D			270	51	109			140	49	**106**					
	41st St at SB US 52 Ramp (Signal)	EB		291	144	435					9.2	A	4.3	A	7.6	A	15.5	B						450	48	122			440	20	51
		WB	266	349		615			19.4	B	6.8	A			11.9	B			220	89	171			576	36	88					
		NB													0.0	A															
		SB	38	378	207	623			31.9	C	33.8	C	7.8	A	25.1	C			290	20	54		2 %	953	177	296	2 %		290	53	147
	41st St at NB US 52 Ramp/E Frontage R	EB	88	241		329			11.0	B	2.7	A			4.7	A	8.1	A	250	34	78			576	20	60					
		WB		517	33	550					7.9	A	5.2	A	7.7	A								345	57	138					
		NB	98	5	113	216			22.1	C	11.4	B	5.2	A	12.7	B			625	20	55			625	34	78			315	39	73
		SB													0.0	A															
	41st St at E Frontage Rd (Signal)	EB	137	196	21	354			5.8	A	0.9	A	0.6	A	2.8	A	5.2	A	320	33	71			318	20	27					
		WB	13	305	44	362			5.0	A	2.2	A	0.9	A	2.1	A			345	20	20			457	28	78			125	20	25
		NB	18	11	9	38			50.1	D	21.7	C	11.8	B	29.2	C			225	20	48			830	20	54					
		SB	32	8	227	267			45.7	D	47.4	D	2.0	A	8.5	A			175	26	66			809	20	30			180	20	27
	Marketplace Dr at SE Target Access	EB	6		11	17			5.5	A			3.0	A	3.7	A	0.6	A	410	20	22								60	20	34
		WB													0.0	A															
		NB	55	203		258			2.5	A	0.3	A			0.7	A			200	20	29										
		SB		125	12	137					0.3	A	0.2	A	0.3	A															
	Marketplace Dr at Slip Ramp from 37th S	EB			5	5							3.5	A	3.5	A	1.6	A											110	20	23
		WB	11		155	166			5.3	A			3.5	A	3.6	A			60	20	24								390	27	52
		NB		104		104					0.5	A			0.5	A															
		SB		119	5	124					0.3	A	0.1	A	0.3	A															
	W Circle Dr at Valleyhigh Dr (Signal)	EB	56	399	211	666			57.5	E	46.5	D	3.5	A	34.1	C	30.5	C	290	40	92			1110	138	221					
		WB	60	242	54	356			61.6	E	34.2	C	1.9	A	34.3	C			295	50	104			1321	83	152					
		NB	129	425	96	650			59.8	E	33.8	C	7.0	A	35.1	D			295	88	151			1129	129	209			250	27	58
		SB	147	437	46	630			36.5	D	15.7	B	2.2	A	19.5	B			310	99	180			670	78	138					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	186		378	564			4.4	A			6.0	A	5.5	A	5.6	A	525		20								525		40
		WB													0.0	A															
		NB	255	73		328			5.5	A	3.8	A			5.1	A					30			173							
		SB		71	188	259					6.5	A			6.5	A					35			1030							
	37th St at RTC West	EB	34	202	23	259			4.1	A	1.7	A	1.2	A	2.0	A	3.6	A	65	20	25			1294	20	20					
		WB	67	197	50	314			4.0	A	0.6	A	2.0	A	1.1	A			80	20	40										
		NB	4	2	15	21			9.3	A	11.2	B	4.0	A	5.7	A								778	20	38					
		SB	229	14	36	279			11.8	B	5.3	A	4.0	A	10.2	B			130	65	**114**			727	29	62					
	37th St at RTC East	EB		340	42	382					0.5	A	0.2	A	0.5	A	3.1	A						800	20	20					
		WB	517	592		1,109			7.8	A	0.9	A			4.0	A			340	75	148			482	20	84					
		NB	7		176	183			36.5	E	0.1	A	2.7	A	3.9	A			680	20	28										
		SB													0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB		350	166	516					3.9	A	0.1	A	2.7	A	8.5	A						650	20	63			200		
		WB	254	950		1,204			9.6	A	5.7	A			6.5	A			265	33	79			610	44	135					
		NB													0.0	A															
		SB	29		325	354			61.0	E	0.2	A	19.3	B	21.8	C								972	29	70			635	89	157
	37th St at NB US 52 Ramp (Signal)	EB	112	267		379			18.9	B	9.5	A			12.0	B	19.9	B	175	31	67			610	40	84					
		WB		718	15	733					16.5	B	3.4	A	16.2	B								405	135	232			185	20	20
		NB	486	312	353	1,151			35.0	D	27.4	C	9.3	A	25.1	C			820	139	225			800	108	169			820	71	133
		SB													0.0	A															
	37th St at 21st Ave/E Frontage Rd (Sign	EB	13	581	26	620			8.3	A	3.0	A	1.3	A	3.0	A	6.1	A	200	20	20			390	26	68			200	20	20
		WB	26	675	22	723			6.9	A	3.5	A	1.0	A	3.5	A			195	20	31			960	49	111			300	20	20
		NB	58	9	14	81			48.4	D	42.3	D	9.5	A	41.3	D			200	45	94			888	20	37					
		SB	15	8		23			43.5	D	14.0	B			23.2	C								686	21	56					
	Watson Ave at RTC South	EB		14	13	27					5.9	A	2.5	A	4.5	A	2.7	A						983	20	38			160	20	33
		WB	66	47		113			5.3	A	1.5	A			2.2	A								1822	38	59					
		NB	24		192	216			4.3	A	0.2	A	3.2	A	3.3	A			380	20	34								190	37	60
		SB													0.0	A															
	RTC East at RTC South (Roundabout) (HCS)	EB	95	16		111					3.6	A			3.6	A	4.9	A						1822		20					
		WB		16	9	25					3.5	A			3.5	A								467		20					
		NB		81		81					3.7	A			3.7	A								421		20					
		SB	13	43	325	381					5.6	A			5.6	A								209		40					
	Marketplace Dr at E RTC Access	EB	17		22	39			5.7	A			2.3	A	3.8	A	1.1	A	940	20	29								110	20	23
		WB													0.0	A															
		NB	35	88		123			1.9	A	0.7	A			1.0	A			130	20	22										
		SB		102	34	136					0.4	A	0.2	A	0.4	A													170		20
	Valleyhigh Dr at Watson Ave	EB													0.0	A	2.4	A													
		WB	52		83	135			15.6	C	0.1	A	5.6	A	8.9	A								543	37	76					
		NB		452	98	550					0.7	A	1.1	A	0.8	A													305	20	20
		SB	159	297		456			5.8	A	0.8	A			2.4	A			260	34	69										
	Marketplace Dr at SE MF Access	EB	32		95	127			5.7	A			3.0	A	3.7	A	1.8	A						321	31	57					
		WB													0.0	A															
		NB	78	91		169			1.6	A	0.4	A			1.0	A			130	20	31										
		SB		77	47	124					0.9	A	0.8	A	0.9	A													170		20
	19th St at W Frontage Rd (Signal)	EB	27	550	10	587			16.2	B	6.3	A	4.0	A	6.7	A	13.1	B	100	20	40		1 %	1122	64	147	1 %				
		WB	143	807	140	1,090			12.0	B	6.5	A	6.3	A	7.1	A			110	38	83			265	56	131					
		NB	7	14	72	93			47.3	D	53.7	D	7.3	A	16.0	B			225	20	27			888	20	39			445	33	59
		SB	180	31	30	241			64.9	E	38.7	D	12.7	B	54.7	D			250	122	**237**			702	34	126					
	19th St at US 52 Interchange (Signal)	EB	105	333	364	802			46.6	D	25.9	C			30.8	C	31.0	C	175	56	94			284	92	170	2 %				
		WB	335	382	202	919			38.8	D	19.8	B			28.7	C			555	146	230			812	109	189					
		NB	464		447	911			33.7	C					33.7	C			620	213	333										
		SB	370		244	614			32.1	C					32.1	C			865	177	304										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B6b
Rochester Tech Campus
2028 Phase 2 Build Conditions bv
PM Peak Hour

Intersection	Approach	Demand Volumes L	T	R	Total	Delay (s/veh) U	LOS	L	LOS	T	LOS	R	LOS	LOS By Approach Delay (S/Veh)	LOS	LOS By Intersection Delay (S/Veh)	LOS	Vehicle Queing Information (feet) — Left Turn Lane: Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ---->	% Block Left[2] <----	Through Lane (s): Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Right Turn Lane: Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour																														
W Circle Dr at 41st St (Signal)	EB	26	203	128	357			50.8	D	51.5	D	2.3	A	34.5	C	21.7	C	305	20	51			944	93	151			170		20
	WB	197	326	39	562			39.8	D	37.0	D	24.3	C	37.1	D			290	69	123			1236	110	175					
	NB	266	623	179	1,068			20.0	C	6.4	A	3.0	A	9.2	A			330	96	185			1197	37	93			325	20	37
	SB	50	455	36	541			28.2	C	22.5	C	3.8	A	21.8	C			270	30	71			922	124	209			270	20	32
41st St at NW MF Access	EB		387	11	398					1.9	A	2.1	A	1.9	A	1.4	A						1236		20					
	WB	5	527		532			4.7	A	0.9	A			0.9	A								721	20	20					
	NB	6		8	14			10.6	B			3.4	A	6.5	A								501	20	33					
	SB													0.0	A															
41st St at 31st Ave/RTC West (Signal)	EB	36	317	52	405			16.9	B	11.2	B	3.7	A	10.7	B	11.6	B	200	20	48			1212	60	108			135	20	47
	WB	66	327	62	455			17.2	B	12.0	B	6.0	A	11.9	B			165	35	79			1336	73	131					
	NB	93	65	74	232			12.6	B	12.8	B	7.6	A	11.3	B			130	31	67		1 %	597	45	94					
	SB	130	49	79	258			13.5	B	19.4	B	7.7	A	12.9	B			100	50	88		1 %	906	50	94					
41st St at W Frontage Rd/Marketplace Dr	EB	69	501	92	662			22.1	C	28.9	C	7.2	A	25.1	C	25.5	C	160	34	79		4 %	1336	132	234	20 %		95	49	132
	WB	226	207	225	658			24.0	C	16.7	B	4.7	A	14.9	B			435	84	148			433	45	88			160	43	79
	NB	111	160	415	686			47.8	D	47.2	D	1.6	A	19.8	B			310	80	152		5 %	272	109	192			145	20	48
	SB	388	157	49	594			44.5	D	47.4	D	33.3	C	44.4	D			270	167	327		8 %	140	122	229					
41st St at SB US 52 Ramp (Signal)	EB		823	480	1,303					34.5	C	12.0	B	26.3	C	23.0	C						450	253	419			440	129	313
	WB	340	452		792			19.7	B	7.0	A			12.3	B			220	130	231			576	59	164					
	NB													0.0	A															
	SB	72	209	200	481			46.0	D	48.2	D	8.8	A	31.8	C			290	46	102			953	132	249			290	49	103
41st St at NB US 52 Ramp/E Frontage Rd	EB	258	637		895			21.4	C	12.1	B			14.8	B	16.8	B	250	117	221		1 %	576	149	279					
	WB		714	112	826					19.2	B	13.7	B	18.5	B								345	144	258					
	NB	78	15	230	323			23.3	C	22.8	C	15.6	B	17.7	B			625	31	73			625	52	105			315	152	245
	SB													0.0	A															
41st St at E Frontage Rd (Signal)	EB	293	471	103	867			14.1	B	7.6	A	3.8	A	9.3	A	15.8	B	320	105	179			318	85	148					
	WB	36	370	47	453			18.5	B	15.0	B	3.2	A	14.1	B			345	20	49		8 %	457	125	226	8 %		125	20	73
	NB	127	52	53	232			44.9	D	51.3	D	21.2	C	41.0	D			225	74	129			830	73	139					
	SB	100	62	329	491			43.2	D	53.3	D	4.1	A	18.2	B			175	68	122			809	52	102			180	41	127
Marketplace Dr at SE Target Access	EB	52		62	114			35.8	E			5.5	A	19.7	C	3.2	A	410	39	88								60	31	65
	WB													0.0	A															
	NB	267	514		781			5.0	A	0.7	A			2.2	A			200	46	85										
	SB		337	37	374					0.9	A	0.7	A	0.9	A								510	20	20					
Marketplace Dr at Slip Ramp from 37th St	EB			8	8							5.0	A	5.0	A	5.2	A											110	20	29
	WB	22		399	421			10.6	B	1.7	A	12.3	B	12.2	B			60	20	64							24 %	390	102	178
	NB		334		334					1.5	A			1.5	A															
	SB		343	5	348					0.6	A	0.4	A	0.6	A															
W Circle Dr at Valleyhigh Dr (Signal)	EB	87	273	264	624			61.5	E	45.3	D	3.4	A	29.4	C	31.0	C	290	53	101			1110	95	159					
	WB	106	414	158	678			59.6	E	40.6	D	2.5	A	34.7	C			295	85	150			1321	130	201					
	NB	274	823	87	1,184			53.7	D	27.6	C	5.9	A	32.0	C			295	144	213		1 %	1129	195	293	1 %		250	23	52
	SB	75	661	44	780			54.4	D	26.0	C	2.9	A	27.5	C			310	66	130			670	165	252					
Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	210		340	550			4.6	A			5.7	A	5.3	A	7.1	A	525		20								525		35
	WB													0.0	A															
	NB	445	75		520			7.9	A	3.8	A			7.3	A					60			173		60					
	SB		90	226	316					9.9	A			9.9	A					60			1030		60					
37th St at RTC West	EB	65	218	5	288			4.7	A	1.6	A	0.8	A	2.3	A	3.3	A	65	20	42			1294		20					
	WB	16	266	196	478			3.7	A	0.9	A	2.7	A	1.8	A			80	20	20								585		20
	NB	19	7	51	77			9.2	A	8.9	A	4.4	A	6.0	A								778	31	54					
	SB	123	3	33	159			10.2	B	2.2	A	4.5	A	8.4	A			130	46	75			727	22	49					
37th St at RTC East	EB		563	32	595					0.7	A	0.1	A	0.7	A	3.5	A						800	20	20					
	WB	261	421		682			7.0	A	0.8	A			3.1	A			340	52	98			482	20	20					
	NB	33		493	526			25.1	D			5.8	A	7.0	A			680	35	129							5 %	130	39	164
	SB													0.0	A															
37th St at SB US 52 Ramp (Signal)	EB		631	425	1,056					14.7	B	0.2	A	8.8	A	12.0	B						650	81	113			200		
	WB	517	983		1,500			19.8	B	8.5	A			12.3	B			265	104	170			610	107	200					
	NB													0.0	A															
	SB	96	5	120	221			41.9	D	12.7	B	9.3	A	23.4	C								972	102	192			635	41	82
37th St at NB US 52 Ramp (Signal)	EB	317	410		727			23.6	C	7.3	A			13.9	B	30.7	C	175	71	124			610	45	106					
	WB		1057	95	1,152					36.8	D	8.4	A	34.4	C					411			405	278	411	19 %		185	52	202
	NB	443	431	531	1,405			50.7	D	43.2	D	19.7	B	36.8	D			820	189	284			800	166	234			820	142	266
	SB													0.0	A															
37th St at 21st Ave/E Frontage Rd (Signal	EB	26	832	83	941			16.3	B	11.8	B	3.3	A	11.2	B	16.1	B	200	20	30		1 %	390	125	211	1 %		200	20	26
	WB	75	942	44	1,061			13.4	B	10.2	B	2.0	A	10.1	B			195	29	61		1 %	960	125	212			300	20	22
	NB	136	41	85	262			71.7	E	50.5	D	24.3	C	52.5	D			200	103	176		1 %	888	85	280					
	SB	49	56	74	179			34.0	C	24.1	C	10.7	B	21.6	C								686	73	140	2 %		130	37	74
Watson Ave at RTC South	EB		39	20	59					6.1	A	2.8	A	5.0	A	4.9	A						983	25	47			160	20	41
	WB	178	12		190			5.8	A	6.9	A			5.9	A								1822	45	68					
	NB	8		80	88			4.4	A	0.0	A	2.5	A	2.6	A			380	20	22								190	24	41
	SB													0.0	A															
RTC East at RTC South (Roundabout) (HCS)	EB	260	42		302					5.8	A			5.8	A	5.1	A						1822		35					
	WB		41	43	84					4.8	A			4.8	A								467		20					
	NB		79		79					4.8	A			4.8	A								421		20					
	SB	39	104	96	239					4.5	A			4.5	A								209		25					
Marketplace Dr at E RTC Access	EB	85		116	201			11.3	B			4.2	A	7.2	A	2.8	A	940	31	58								110	27	50
	WB													0.0	A															
	NB	99	232		331			4.0	A	1.6	A			2.3	A			130	23	51										
	SB		280	85	365					0.9	A	0.5	A	0.8	A													170		20
Watson Ave at Internal Roadway	EB													0.0	A	1.3	A													
	WB	75			75			6.4	A	0.5	A			4.6	A								2577	34	58					
	NB		88	101	189					0.8	A	0.4	A	0.6	A															
	SB		198		198					0.2	A			0.2	A															
Internal Roadway at Internal Roadway	EB		35	69	104					1.0	A	0.4	A	0.6	A	1.3	A						558		20					
	WB	37	38		75			2.5	A	0.3	A			0.6	A								781	20	24					
	NB	41		36	77			5.9	A	0.5	A	3.7	A	3.8	A								2577	34	56					
	SB													0.0	A															
Valleyhigh Dr at Watson Ave	EB													0.0	A	3.3	A													
	WB	99		174	273			16.8	C	0.3	A	8.6	A	10.7	B								543	66	129					
	NB		435	69	504					0.7	A	0.8	A	0.7	A													305	20	20
	SB	120	448		568			5.0	A	0.8	A			1.7	A			260	27	58										
19th St at W Frontage Rd (Signal)	EB	67	787	10	864			24.6	C	14.8	B	12.4	B	15.5	B	22.8	C	100	38	88		9 %	1122	142	250	9 %				
	WB	107	743	268	1,118			17.6	B	11.5	B	10.4	B	11.8	B			110	41	86		3 %	265	107	213	3 %				
	NB	18	50	194	262			33.8	C	42.2	D	15.0	B	21.5	C			225	20	36			888	39	80			445	69	124
	SB	323	48	89	460			80.1	F	41.2	D	21.9	C	64.9	E			250	230	398			702	154	473					
19th St at US 52 Interchange (Signal)	EB	243	422	639	1,304			44.5	D	22.8	C			30.6	C	33.2	C	175	97	150			284	105	189	2 %				
	WB	334	358	255	947			44.8	D	23.8	C			34.0	C			555	161	230			812	96	170					
	NB	528		406	934			35.6	D					35.6	D			620	247	375										
	SB	206		232	438			26.6	C					26.6	C			865	98	174										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B7a
Rochester Tech Campus
2028 Phase 2 Build Conditions - Mitigated
AM Peak Hour

Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																		Left Turn Lane					Through Lane (s)					Right Turn Lane			
		L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ---->	% Block Left[2] <----	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)	95th% Queue (feet)[1]
W Circle Dr at 41st St (Signal)	EB	16	242	118	376			41.0	D	43.1	D	2.4	A	30.7	C	23.3	C	305	20	36			944	98	158			170	20	20
	WB	45	123	16	184			37.6	D	32.8	C	12.5	B	31.9	C			290	20	46			1236	38	78					
	NB	110	326	99	535			63.5	E	6.0	A	2.0	A	17.0	B			330	81	157			1197	29	78			325	20	37
	SB	40	467	26	533			57.3	E	19.0	B	2.9	A	21.2	C			270	37	85			922	116	189			270	20	31
41st St at NW MF Access	EB		361	4	365					2.4	A	3.4	A	2.4	A	1.9	A						1236		20					
	WB	4	157		161			3.6	A	0.3	A			0.4	A								721	20	20					
	NB	12		10	22			7.3	A			3.7	A	5.4	A								501	20	42					
	SB													0.0	A															
41st St at 31st Ave/RTC West (Signal)	EB	65	151	146	362			11.5	B	8.5	A	4.4	A	7.4	A	8.8	A	200	29	68			1212	34	76			135	40	82
	WB	42	134	41	217			12.7	B	6.2	A	4.5	A	6.9	A			165	22	57			1336	36	73					
	NB	27	35	61	123			13.7	B	20.3	C	5.5	A	11.9	B			130	20	37			597	29	63					
	SB	83	49	28	160			14.8	B	15.6	B	5.9	A	13.4	B			100	39	77			906	37	70					
41st St at W Frontage Rd/Marketplace Dr	EB	26	207	42	275			13.9	B	12.2	B	3.8	A	11.1	B	15.3	B	160	20	38			1336	38	85	1 %		95	20	44
	WB	97	229	230	556			10.9	B	6.8	A	3.5	A	6.1	A			420	27	62			420	31	69			160	38	77
	NB	61	78	92	231			43.3	D	36.7	D	0.8	A	24.8	C			310	40	86			272	49	97			240		
	SB	134	68	32	234			36.5	D	39.3	D	17.1	B	34.5	C			270	44	93		1 %	140	46	104					
41st St at SB US 52 Ramp (Signal)	EB		291	144	435					9.3	A	3.9	A	7.5	A	14.3	B						450	38	99			440	20	37
	WB	266	349		615			14.5	B	5.7	A			9.1	A			220	71	136			576	39	94					
	NB													0.0	A															
	SB	38	378	207	623			32.1	C	32.7	C	7.9	A	24.5	C			290	20	45			951	136	219			290	48	89
41st St at NB US 52 Ramp/E Frontage Rd	EB	88	241		329			10.9	B	3.8	A			5.6	A	11.6	B	250	34	77			576	23	61					
	WB		517	33	550					8.2	A	5.4	A	8.0	A								345	60	149					
	NB	98	5	113	216			47.7	D	15.2	B	6.2	A	25.0	C			625	25	63			625	42	86			315	45	94
	SB													0.0	A															
41st St at E Frontage Rd (Signal)	EB	137	196	21	354			5.5	A	1.1	A	0.6	A	2.7	A	5.5	A	320	30	64			318	20	30					
	WB	13	305	44	362			4.8	A	3.0	A	1.1	A	2.8	A			345	20	20			457	34	97			125	20	28
	NB	18	11	9	38			44.8	D	22.7	C	9.1	A	28.0	C			225	20	52			830	20	51					
	SB	32	8	227	267			43.9	D	53.3	D	2.0	A	8.5	A			175	26	68			809	20	28			180	20	34
Marketplace Dr at SE Target Access	EB	6		11	17			6.8	A			2.9	A	4.4	A	0.6	A	410	20	24								60	20	30
	WB													0.0	A															
	NB	55	203		258			2.5	A	0.3	A			0.7	A			200	20	29										
	SB		125	12	137					0.3	A	0.2	A	0.3	A								510		20					
Marketplace Dr at Slip Ramp from 37th St	EB			5	5							3.3	A	3.3	A	1.7	A											110	20	22
	WB	11		155	166			5.6	A			3.5	A	3.7	A			60	20	30								390	29	54
	NB		104		104					0.5	A			0.5	A															
	SB		119	5	124					0.3	A	0.1	A	0.3	A															
W Circle Dr at Valleyhigh Dr (Signal)	EB	56	399	211	666			59.2	E	43.5	D	4.1	A	32.0	C	29.5	C	290	39	101		1 %	1110	144	244	1 %		270	20	51
	WB	60	242	54	356			61.4	E	28.3	C	1.9	A	29.7	C			295	50	108			1321	73	147					
	NB	129	425	96	650			49.1	D	27.5	C	6.5	A	28.5	C			295	79	146			1129	113	191			250	28	58
	SB	147	437	46	630			56.4	E	20.8	C	2.5	A	27.5	C			310	114	216			670	103	180					
Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	186		378	564			4.4	A			6.0	A	5.5	A	5.6	A	525		20								525		40
	WB													0.0	A															
	NB	255	73		328			5.5	A	3.8	A			5.1	A								173		30					
	SB		71	188	259					6.5	A			6.5	A								1030		35					
37th St at RTC West	EB	34	202	23	259			4.3	A	1.8	A	1.0	A	2.0	A	3.5	A	65	20	29			1294		20					
	WB	67	197	50	314			4.0	A	0.6	A	2.2	A	1.1	A			80	20	38			1166		20					
	NB	4	2	15	21			8.9	A	8.5	A	3.5	A	4.8	A								778	20	39					
	SB	229	14	36	279			11.4	B	5.2	A	3.9	A	9.9	A			130	66	112			727	29	53					
37th St at RTC East	EB		340	42	382					0.6	A	0.2	A	0.6	A	3.0	A						800	20	20					
	WB	517	592		1,109			7.7	A	0.9	A			3.9	A			340	76	142			482	20	48					
	NB	7		176	183			27.2	D	0.4	A	2.7	A	3.3	A			680	20	23										
	SB													0.0	A															
37th St at SB US 52 Ramp (Signal)	EB		350	166	516					8.1	A	0.1	A	5.5	A	14.4	B						650	37	85			200		
	WB	254	950		1,204			47.4	D	7.3	A			15.7	B			265	98	161			610	72	190					
	NB													0.0	A															
	SB	29		325	354			55.6	E	0.8	A	20.3	C	22.3	C								972	28	70			635	94	164
37th St at NB US 52 Ramp (Signal)	EB	112	267		379			35.9	D	6.6	A			14.3	B	20.7	C	175	42	93			610	28	67					
	WB		718	15	733					17.2	B	3.9	A	16.9	B								405	134	217			185	20	20
	NB	486	312	353	1,151			35.2	D	28.6	C	9.3	A	25.5	C			820	134	220			800	107	168			820	72	128
	SB													0.0	A															
37th St at 21st Ave/E Frontage Rd (Signal)	EB	13	581	26	620			8.4	A	3.0	A	1.1	A	3.0	A	5.8	A	200	20	20			390	27	66			200	20	20
	WB	26	675	22	723			6.7	A	3.5	A	1.3	A	3.5	A			195	20	30			960	48	111			300	20	20
	NB	58	9	14	81			45.6	D	46.8	D	8.8	A	38.5	D			200	38	85			888	20	36					
	SB	15	8		23			46.4	D	12.1	B			25.0	C								686	20	50					
Watson Ave at RTC South	EB		14	13	27					5.9	A	2.5	A	4.4	A	2.8	A						983	20	39			160	20	33
	WB	66	47		113			5.5	A	1.8	A			2.5	A								1822	40	63					
	NB	24		192	216			4.3	A	0.2	A	3.1	A	3.2	A			380	20	35								190	36	60
	SB													0.0	A															
RTC East at RTC South (Roundabout) (HCS)	EB	95	16		111					3.6	A			3.6	A	4.9	A						1822		20					
	WB		16	9	25					3.5	A			3.5	A								467		20					
	NB		81		81					3.7	A			3.7	A								421		20					
	SB	13	43	325	381					5.6	A			5.6	A								209		40					
Marketplace Dr at E RTC Access	EB	17		22	39			5.2	A			2.3	A	3.5	A	1.0	A	940	20	29								110	20	24
	WB													0.0	A															
	NB	35	88		123			1.8	A	0.7	A			1.0	A			130	20	20										
	SB		102	34	136					0.4	A	0.2	A	0.4	A															
Watson Ave at Internal Roadway	EB													0.0	A	1.4	A													
	WB	81			81			6.0	A					6.0	A								2577	34	59					
	NB		216	41	257					0.5	A	0.3	A	0.5	A															
	SB		54		54					0.1	A			0.1	A															
Internal Roadway at Internal Roadway	EB		18	25	43					0.4	A	0.0	A	0.2	A	1.8	A													
	WB	10	10		20			1.9	A	0.1	A			0.3	A								781	20	20					
	NB	71		17	88			5.1	A			3.3	A	4.7	A								2577	34	57					
	SB													0.0	A															
Valleyhigh Dr at Watson Ave	EB													0.0	A	2.3	A													
	WB	52		83	135			15.8	C	0.0	A	2.7	A	7.6	A			150	27	57								545	23	41
	NB		452	98	550					0.7	A	0.9	A	0.7	A								977		20			305	20	20
	SB	159	297		456			5.8	A	0.9	A			2.6	A			260	36	74										
Marketplace Dr at SE MF Access	EB	32		95	127			6.0	A			3.0	A	3.7	A	1.8	A						321	31	55					
	WB													0.0	A															
	NB	78	91		169			1.7	A	0.4	A			1.0	A			130	20	32										
	SB		77	47	124					1.0	A	0.7	A	0.9	A															
19th St at W Frontage Rd (Signal)	EB	27	550	10	587			16.2	B	8.8	A	6.9	A	9.1	A	14.0	B	100	20	40		2 %	1116	76	154	2 %				
	WB	143	807	140	1,090			14.2	B	9.8	A	8.8	A	10.2	B			110	52	118		3 %	265	105	212	3 %				
	NB	7	14	72	93			48.4	D	46.4	D	7.7	A	16.5	B			225	20	26			888	20	42			445	33	59
	SB	180	31	30	241			46.3	D	37.1	D	13.0	B	40.7	D			280	93	167			300	21	62					
19th St at US 52 Interchange (Signal)	EB	105	333	364	802			44.0	D	23.8	C			28.4	C	30.4	C	175	56	100			276	88	146	1 %				
	WB	335	382	202	919			40.1	D	17.8	B			28.2	C			555	148	233			808	97	168					
	NB	464		447	911			31.6	C					31.6	C			620	157	245								340		
	SB	370		244	614			35.8	D					35.8	D			865	187	323										

AM Peak Hour

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B7b
Rochester Tech Campus
2028 Phase 2 Build Conditions - Mitigated
PM Peak Hour

Intersection	Approach	Demand Volumes				Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																		Left Turn Lane					Through Lane (s)					Right Turn Lane			
		L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ---->	% Block Left[2] <----	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)	95th% Queue (feet)[1]
PM Peak Hour																															
W Circle Dr at 41st St (Signal)	EB	26	203	128	357			54.5	D	52.9	D	2.4	A	35.2	D	29.7	C	305	20	55			944	93	152			170	20	20		
	WB	197	326	39	562			59.7	E	37.6	D	27.8	C	44.6	D			290	87	147			1236	109	179							
	NB	266	623	179	1,068			61.5	E	8.9	A	3.7	A	20.5	C			330	181	313			1197	62	127			325	20	46		
	SB	50	455	36	541			30.0	C	31.7	C	5.6	A	29.7	C			270	30	73			922	146	224			270	20	38		
41st St at NW MF Access	EB		387	11	398					2.0	A	1.8	A	2.0	A	1.4	A														
	WB	5	527		532			4.5	A	0.8	A			0.8	A								721	20	20							
	NB	6		8	14			9.8	A			3.8	A	5.9	A								501	20	34							
	SB													0.0	A																
41st St at 31st Ave/RTC West (Signal)	EB	36	317	52	405			13.6	B	14.1	B	4.0	A	12.9	B	13.5	B	200	20	47			1212	65	113			135	20	50		
	WB	66	327	62	455			14.0	B	14.0	B	7.1	A	13.1	B			165	32	69			1336	79	140							
	NB	93	65	74	232			14.7	B	14.8	B	9.6	A	13.4	B			130	37	83			597	52	105							
	SB	130	49	79	258			15.7	B	23.6	C	8.7	A	15.1	B			100	55	100		1 %	906	54	103							
41st St at W Frontage Rd/Marketplace Dr	EB	69	501	92	662			23.5	C	34.5	C	9.1	A	29.9	C	25.9	C	160	36	86		5 %	1336	156	259	28 %		95	59	152		
	WB	226	207	225	658			21.8	C	18.1	B	5.3	A	15.2	B			420	90	161			420	51	98			160	48	82		
	NB	111	160	415	686			48.7	D	49.1	D	1.7	A	20.0	C			310	77	147		7 %	272	114	199			145	20	45		
	SB	388	157	49	594			42.0	D	42.5	D	28.3	C	41.0	D			270	151	254		6 %	140	112	208							
41st St at SB US 52 Ramp (Signal)	EB		823	480	1,303					28.6	C	10.9	B	22.0	C	19.8	B						450	241	382			440	107	281		
	WB	340	452		792			16.1	B	5.9	A			10.1	B			220	105	214			576	46	128							
	NB													0.0	A																
	SB	72	209	200	481			45.0	D	45.6	D	8.3	A	29.9	C			290	47	100			951	81	144			290	51	91		
41st St at NB US 52 Ramp/E Frontage Rd	EB	258	637		895			22.0	C	12.2	B			15.1	B	23.7	C	250	130	244		1 %	576	170	314							
	WB		714	112	826					29.5	C	21.4	C	28.4	C								345	205	332							
	NB	78	15	230	323			59.0	E	40.3	D	23.3	C	32.9	C			625	26	66			625	44	112			315	137	240		
	SB													0.0	A																
41st St at E Frontage Rd (Signal)	EB	293	471	103	867			10.3	B	4.0	A	2.1	A	5.9	A	14.1	B	320	73	141			318	35	99							
	WB	36	370	47	453			11.8	B	10.9	B	2.3	A	10.1	B			345	20	40		5 %	457	103	206	5 %		125	20	70		
	NB	127	52	53	232			49.9	D	55.0	E	23.6	C	45.1	D			225	85	147			830	77	145							
	SB	100	62	329	491			47.5	D	51.9	D	4.2	A	19.1	B			175	70	126			809	52	106		1 %	180	35	125		
Marketplace Dr at SE Target Access	EB	52		62	114			34.0	D			5.5	A	18.6	C	3.2	A	410	39	80								60	31	57		
	WB													0.0	A																
	NB	267	514		781			5.2	A	0.7	A			2.2	A			200	48	86												
	SB		337	37	374					1.0	A	0.6	A	1.0	A								510	20	20							
Marketplace Dr at Slip Ramp from 37th St	EB			8	8							4.7	A	4.7	A	4.8	A											110	20	25		
	WB	22		399	421			11.8	B	2.1	A	11.4	B	11.4	B			60	20	61							21 %	390	93	168		
	NB		334		334					1.5	A			1.5	A																
	SB		343	5	348					0.6	A	0.5	A	0.6	A																
W Circle Dr at Valleyhigh Dr (Signal)	EB	87	273	264	624			61.0	E	48.1	D	3.4	A	31.4	C	32.4	C	290	54	105			1110	99	164							
	WB	106	414	158	678			62.5	E	43.1	D	2.5	A	36.7	D			295	83	150			1321	136	203							
	NB	274	823	87	1,184			41.1	D	26.7	C	5.6	A	28.4	C			295	134	210		1 %	1129	194	291	1 %		250	24	52		
	SB	75	661	44	780			66.7	E	34.2	C	3.0	A	35.5	D			310	67	132			670	179	288							
Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	210		340	550			4.6	A			5.7	A	5.3	A	7.1	A	525		20								525		35		
	WB													0.0	A																
	NB	445	75		520			7.9	A	3.8	A			7.3	A					60			173								
	SB		90	226	316					9.9	A			9.9	A					60			1030								
37th St at RTC West	EB	65	218	5	288			4.6	A	1.7	A	1.6	A	2.4	A	3.3	A	65	20	43												
	WB	16	266	196	478			3.8	A	0.8	A	2.9	A	1.8	A			80	20	20								585	20	29		
	NB	19	7	51	77			9.6	A	9.8	A	3.9	A	5.9	A								778	31	53							
	SB	123	3	33	159			10.2	B	1.9	A	4.1	A	8.4	A			130	45	76			727	20	47							
37th St at RTC East	EB		563	32	595					0.7	A	0.2	A	0.7	A	3.3	A						800	20	20							
	WB	261	421		682			7.2	A	0.8	A			3.1	A			340	56	108			482	20	21							
	NB	33		493	526			22.1	C			5.4	A	6.4	A			680	29	102							4 %	130	36	156		
	SB													0.0	A																
37th St at SB US 52 Ramp (Signal)	EB		631	425	1,056					12.3	B	0.2	A	7.5	A	13.0	B						650	80	110			200				
	WB	517	983		1,500			23.2	C	6.8	A			12.3	B			265	145	229			610	84	172							
	NB													0.0	A																
	SB	96	5	120	221			79.5	E	30.8	C	11.8	B	40.8	D								972	94	175			635	40	76		
37th St at NB US 52 Ramp (Signal)	EB	317	410		727			32.3	C	5.2	A			16.6	B	27.9	C	175	81	138			610	24	74							
	WB		1057	95	1,152					25.2	C	6.8	A	23.6	C								405	226	353	8 %		185	28	118		
	NB	443	431	531	1,405			52.2	D	43.8	D	21.0	C	37.7	D			820	189	287			800	168	230			820	155	280		
	SB													0.0	A																
37th St at 21st Ave/E Frontage Rd (Signal	EB	26	832	83	941			16.3	B	11.9	B	2.9	A	11.3	B	15.0	B	200	20	33		1 %	390	120	215	1 %		200	20	25		
	WB	75	942	44	1,061			14.4	B	10.5	B	1.8	A	10.4	B			195	30	63		2 %	960	132	235			300	20	20		
	NB	136	41	85	262			50.2	D	38.6	D	17.1	B	37.2	D			200	90	151			888	57	119							
	SB	49	56	74	179			48.2	D	30.8	C	12.6	B	28.0	C								686	78	140	2 %		130	39	76		
Watson Ave at RTC South	EB		39	20	59					6.2	A	2.5	A	4.9	A	4.7	A						983	23	47			160	20	40		
	WB	178	12		190			5.6	A	6.4	A			5.6	A								1822	44	66							
	NB	8		80	88			4.1	A	0.0	A	2.5	A	2.6	A			380	20	21								190	23	41		
	SB													0.0	A																
RTC East at RTC South (Roundabout) (HCS)	EB	260	42		302					5.8	A			5.8	A	5.1	A						1822		35							
	WB		41	43	84					4.8	A			4.8	A								467		20							
	NB		79		79					4.8	A			4.8	A								421		20							
	SB	39	104	96	239					4.5	A			4.5	A								209		25							
Marketplace Dr at E RTC Access	EB	85		116	201			11.2	B			4.3	A	7.2	A	2.8	A	940	31	60								110	24	46		
	WB													0.0	A																
	NB	99	232		331			4.2	A	1.6	A			2.3	A			130	22	51												
	SB		280	85	365					0.9	A	0.5	A	0.8	A													170	20	20		
Watson Ave at Internal Roadway	EB													0.0	A	1.3	A														
	WB	75			75			6.7	A	0.4	A			4.8	A								2577	34	59							
	NB		88	101	189					0.8	A	0.4	A	0.6	A																
	SB		198		198					0.2	A			0.2	A																
Internal Roadway at Internal Roadway	EB		35	69	104					0.8	A	0.3	A	0.5	A	1.2	A														
	WB	37	38		75			2.3	A	0.3	A			0.5	A								781	20	21							
	NB	41		36	77			5.8	A	0.4	A	3.8	A	3.8	A								2577	33	55							
	SB													0.0	A																
Valleyhigh Dr at Watson Ave	EB													0.0	A	2.5	A														
	WB	99		174	273			15.7	C	0.2	A	3.5	A	7.3	A			150	39	78								545	33	56		
	NB		435	69	504					0.6	A	0.7	A	0.6	A													305	20	20		
	SB	120	448		568			4.7	A	0.9	A			1.7	A			260	25	53												
Marketplace Dr at SE MF Access	EB	99		178	277			15.9	C			9.3	A	11.6	B	4.7	A						321	73	134							
	WB													0.0	A																
	NB	178	232		410			4.1	A	1.1	A			2.4	A			130	34	61												
	SB		283	113	396					2.3	A	1.8	A	2.2	A													170	20	20		
19th St at W Frontage Rd (Signal)	EB	67	787	10	864			24.5	C	18.1	B	14.8	B	18.6	B	22.2	C	100	45	110		12 %	1116	166	283	12 %						
	WB	107	743	268	1,118			20.2	C	18.5	B	17.7	B	18.5	B			110	63	144		13 %	265	193	321	13 %						
	NB	18	50	194	262			48.4	D	45.8	D	18.9	B	26.5	C			225	20	48			888	43	90			445	75	137		
	SB	323	48	89	460			42.7	D	32.0	C	12.1	B	35.7	D			280	138	225			300	40	93							
19th St at US 52 Interchange (Signal)	EB	243	422	639	1,304			42.2	D	19.8	B			28.0	C	31.9	C	175	96	149			276	103	191	1 %						
	WB	334	358	255	947			44.4	D	18.4	B			30.9	C			555	157	236			808	87	152							
	NB	528		406	934			38.2	D					38.2	D			620	206	289								340				
	SB	206		232	438			31.0	C					31.0	C			865	105	178												

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B8a
Rochester Tech Campus
2029 Build Conditions
AM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)												
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ---->	% Block Left[2] <----	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB		16	254	144	414			39.1	D	43.3	D	2.6	A	29.3	C			305	20	35			944	99	163			170	20	28
		WB		45	133	16	194			35.5	D	32.1	C	14.1	B	31.5	C	23.8	C	290	20	44			1236	41	81					
		NB		132	328	99	559			64.0	E	5.7	A	2.0	A	18.3	B			330	92	173			1197	26	74			325	20	35
		SB		40	467	26	533			54.8	D	20.9	C	3.0	A	22.6	C			270	36	80			922	131	208			270	20	28
	41st St at NW MF Access	EB			369	4	373					2.4	A	2.7	A	2.4	A															
		WB		4	163		167			3.0	A	0.4	A			0.4	A	1.9	A						721	20	20					
		NB		12		10	22			7.9	A			3.6	A	5.8	A								501	20	41					
		SB														0.0	A															
	41st St at 31st Ave/IBM (Signal)	EB		67	156	146	369			10.9	B	8.1	A	4.7	A	7.3	A			200	29	67			1212	35	76			135	42	82
		WB		42	137	41	220			11.2	B	6.6	A	3.9	A	6.8	A	8.5	A	165	20	51			1336	38	76					
		NB		27	35	61	123			13.1	B	18.9	B	5.0	A	10.7	B			130	20	36			597	27	59					
		SB		83	49	29	161			14.2	B	16.6	B	6.1	A	13.5	B			170	36	73			906	39	74					
	41st St at W Frontage Rd/Marketplace Dr	EB		26	206	44	276			15.8	B	11.9	B	3.7	A	11.1	B			160	20	38			1336	42	87	1 %		95	20	48
		WB		100	229	230	559			11.4	B	7.0	A	3.3	A	6.3	A	15.6	B	420	29	65			420	33	71			160	34	67
		NB		63	81	93	237			42.1	D	39.8	D	0.7	A	25.4	C			310	39	82			272	49	97			240	20	20
		SB		134	71	32	237			38.0	D	38.9	D	15.2	B	35.2	D			270	44	96			140	43	93					
	41st St at SB US 52 Ramp (Signal)	EB			292	141	433					9.3	A	4.0	A	7.6	A								450	45	109			440	20	41
		WB		266	352		618			16.3	B	6.1	A			10.2	B	14.8	B	220	77	153			576	44	99					
		NB														0.0	A															
		SB		38	420	207	665			30.9	C	31.5	C	7.8	A	24.1	C			290	20	47			951	147	224			290	48	87
	41st St at NB US 52 Ramp/E Frontage Rd	EB		87	243		330			10.5	B	3.9	A			5.5	A			250	36	79			576	28	75					
		WB			517	33	550					8.6	A	5.2	A	8.4	A	12.4	B						345	61	155					
		NB		101	5	113	219			52.2	D	20.5	C	6.9	A	27.5	C			625	28	66			625	48	99			315	47	100
		SB														0.0	A															
	41st St at E Frontage Rd/Maplewood Sq A	EB		136	199	21	356			5.7	A	1.2	A	0.8	A	3.0	A			320	32	68			318	20	32					
		WB		13	307	44	364			5.3	A	2.9	A	1.1	A	2.8	A	5.5	A	345	20	20			457	38	97			125	20	29
		NB		18	11	9	38			43.0	D	22.8	C	8.1	A	26.7	C			225	20	46			830	20	47					
		SB		32	8	225	265			52.2	D	48.7	D	2.0	A	9.3	A			175	27	74			809	20	30			180	20	32
	Marketplace Dr at SE Target Access	EB		6		11	17			6.6	A			3.0	A	4.1	A			410	20	23								60	20	34
		WB														0.0	A	0.7	A													
		NB		55	201		256			2.5	A	0.3	A			0.8	A			200	20	31										
		SB			134	12	146					0.3	A	0.3	A	0.3	A															
	Marketplace Dr at Slip Ramp from 37th St	EB				5	5							3.2	A	3.2	A													110	20	21
		WB		11		155	166			5.2	A			3.6	A	3.7	A	1.7	A	60	20	27						1 %		390	28	54
		NB			102		102					0.5	A			0.5	A															
		SB			127	5	132					0.3	A	0.2	A	0.3	A															
	W Circle Dr at Valleyhigh Rd (Signal)	EB		57	430	221	708			55.7	E	40.1	D	3.9	A	30.1	C			290	43	97			1110	135	225					
		WB		60	266	77	403			57.2	E	26.8	C	1.9	A	26.8	C	29.0	C	295	49	103			1321	79	146					
		NB		137	425	97	659			44.2	D	30.2	C	6.9	A	29.6	C			350	79	142			1129	122	197			250	29	62
		SB		172	437	47	656			54.8	D	22.3	C	2.6	A	28.9	C			310	129	247			670	112	189					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	6	186		431	617			4.4	A			6.6	A	5.9	A			525		20								525		50
		WB														0.0	A	6.0	A													
		NB		302	73		375			6.0	A	3.8	A			5.5	A					35			173		35					
		SB	3		71	188	259					7.0	A			7.0	A					35			1030		35					
	37th St at IBM West (Signal)	EB		34	202	23	259			4.0	A	1.6	A	1.4	A	1.9	A			65	20	25			1294		20					
		WB		67	197	50	314			4.0	A	0.6	A	2.1	A	1.1	A	3.7	A	80	20	39										
		NB		4	2	15	21			7.9	A	11.6	B	3.4	A	5.0	A								778	20	38					
		SB		229	14	36	279			12.2	B	5.4	A	3.9	A	10.7	B			130	70	**124**			727	28	53					
	37th St at IBM East (Signal)	EB			337	45	382					0.7	A	0.2	A	0.6	A								800	20	20					
		WB		622	593		1,215			10.3	B	1.1	A			5.6	A	4.3	A	340	107	210			482	20	85					
		NB		7		285	292			54.8	D	0.4	A	3.2	A	4.1	A			680	20	25								580		
		SB														0.0	A															
	37th St at SB US 52 Ramp (Signal)	EB			424	198	622					10.2	B	0.1	A	6.9	A								650	49	99			200		
		WB		251	1014		1,265			46.1	D	9.1	A			15.9	B	15.1	B	265	87	144			610	96	226					
		NB														0.0	A															
		SB		31		367	398			48.0	D	0.8	A	23.3	C	23.8	C			972	23	62								635	112	186
	37th St at NB US 52 Ramp (Signal)	EB		152	303		455			37.4	D	7.0	A			16.3	B			175	54	111			610	29	68					
		WB			759	13	772					18.0	B	3.9	A	17.8	B	21.2	C						405	143	226			185	20	20
		NB		506	312	354	1,172			35.2	D	28.5	C	9.6	A	25.5	C			820	133	218			1437	107	170			820	71	129
		SB														0.0	A															
	37th St at 21st Ave/Maplewood Sq Access	EB		13	618	26	657			6.9	A	3.2	A	1.0	A	3.2	A			200	20	20			390	30	75			200	20	20
		WB		26	714	22	762			7.7	A	3.6	A	1.1	A	3.7	A	5.7	A	195	20	31			960	52	113			300	20	20
		NB		58	9	14	81			45.6	D	41.8	D	6.7	A	37.4	D			200	39	82			888	20	34					
		SB		15	8		23			37.7	D	12.8	B			21.5	C								686	20	53					
	31st Ave at IBM	EB			14	13	27					6.0	A	2.5	A	4.1	A								983	20	34			160	20	36
		WB		139	47		186			5.9	A	1.7	A			3.1	A	3.2	A						1822	47	71					
		NB		24		215	239			4.4	A	0.1	A	3.3	A	3.4	A			380	20	35								190	39	63
		SB														0.0	A															
	IBM at Internal Roadway (Roundabout) (HCS)	EB		145	30		175					4.4	A			4.4	A								1822		21					
		WB			25	34	59					4.2	A			4.2	A	5.7	A						467		20					
		NB			115	2	117					4.5	A			4.5	A								421		21					
		SB		48	55	386	489					6.7	A			6.7	A								209		79					
	Marketplace Dr at E IBM Access	EB		37		42	79			5.3	A	0.1	A	2.3	A	3.6	A			940	20	36								110	20	31
		WB														0.0	A	1.4	A													
		NB		67	66		133			2.1	A	0.7	A			1.3	A			130	20	29										
		SB			80	65	145					0.4	A	0.3	A	0.4	A													170		20
	31st Ave at Internal Roadway	EB														0.0	A															
		WB		117		2	119			7.5	A			4.0	A	7.4	A	1.8	A						2577	40	65					
		NB			237	94	331					0.9	A	0.4	A	0.8	A								543		20					
		SB		8	92		100			3.1	A	0.2	A			0.3	A								400	20	20					
	Internal Roadway at Internal Roadway	EB		8	27	25	60			1.9	A	0.4	A	0.1	A	0.5	A								558		20					
		WB		10	13	8	31			2.0	A	0.1	A	0.1	A	0.2	A	2.2	A						781		20					
		NB		71	5	17	93			5.3	A	2.4	A	3.5	A	4.7	A								2577	33	53					
		SB		25	19	25	69			4.5	A	6.4	A	2.8	A	4.4	A								373	25	45					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A															
		WB		75		126	201			20.8	C	0.1	A	3.1	A	8.8	A	3.1	A	150	35	73								545	27	48
		NB			459	162	621					0.9	A	1.4	A	1.0	A								977					305	20	24
		SB		208	303		511			7.4	A	0.8	A			3.4	A			260	45	88										
	Marketplace Dr at SE MF Access	EB		31		129	160			6.1	A			3.1	A	3.6	A								321	33	57					
		WB														0.0	A	1.8	A													
		NB		89	102		191			1.8	A	0.4	A			1.0	A			130	20	36										
		SB			75	47	122					1.0	A	0.8	A	0.9	A													170		20
	19th St at W Frontage Rd (Signal)	EB		31	553	10	594			16.9	B	8.9	A	4.5	A	9.2	A			100	20	47		2 %	1116	77	166	2 %				
		WB		144	842	157	1,143			14.1	B	10.1	B	9.3	A	10.5	B	15.1	B	110	49	**109**		3 %	265	109	**214**	3 %				
		NB		7	14	72	93			56.2	E	47.4	D	7.5	A	16.6	B			225	20	32			888	20	40			445	33	59
		SB		216	31	34	281			51.9	D	37.4	D	14.5	B	45.4	D			280	114	202			300	24	70					
	19th St at US 52 Interchange (Signal)	EB		106	332	403	841			44.7	D	24.1	C			29.0	C			175	56	99			276	85	150	1 %				
		WB		336	383	202	921			40.5	D	19.0	B			29.1	C	30.9	C	555	155	265			808	107	183					
		NB		515		447	962			32.4	C					32.4	C			620	175	270								340		
		SB		371		245	616			34.9	C					34.9	C			865	186	318										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B8b
Rochester Tech Campus
2029 Build Conditions
PM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB		23	223	152	398			53.2	D	51.7	D	2.4	A	33.7	C			305	20	54			944	93	152			170	20	20
		WB		196	344	39	579			60.4	E	37.7	D	25.6	C	44.6	D	29.3	C	290	84	138			1236	112	184					
		NB		298	622	179	1,099			57.9	E	8.3	A	3.6	A	19.7	B			330	175	297			1197	55	111			325	20	47
		SB		50	458	38	546			29.3	C	32.2	C	5.3	A	30.1	C			270	32	72			922	151	240			270	20	36
	41st St at NW MF Access	EB			399	11	410					1.9	A	1.7	A	1.9	A																
		WB		5	539		544			3.8	A	0.9	A			0.9	A	1.4	A						721	20	21					
		NB		5		8	13			8.3	A			3.4	A	5.4	A								501	20	33					
		SB														0.0	A																
	41st St at 31st Ave/IBM (Signal)	EB		38	323	52	413			14.0	B	13.4	B	4.3	A	12.3	B			200	20	49			1212	61	115			135	21	53
		WB		65	333	62	460			15.2	B	14.0	B	6.8	A	13.2	B	13.1	B	165	31	65			1336	76	133					
		NB		92	65	74	231			14.6	B	14.5	B	9.0	A	13.0	B			130	35	70		1 %	597	47	96					
		SB		130	49	81	260			15.9	B	21.3	C	8.2	A	14.4	B			100	53	98		1 %	906	53	103					
	41st St at W Frontage Rd/Marketplace Dr	EB		69	499	97	665			23.4	C	32.8	C	8.1	A	28.3	C			160	35	82		6 %	1336	144	252	24 %		95	53	137
		WB		234	200	225	659			22.4	C	18.0	B	5.5	A	15.3	B	25.6	C	420	87	153			420	50	94			160	47	85
		NB		119	166	422	707			46.7	D	46.7	D	1.5	A	19.6	B			310	76	134		6 %	272	111	194			240	20	40
		SB		389	162	49	600			42.4	D	41.8	D	26.8	C	41.0	D			270	148	259		6 %	140	111	205					
	41st St at SB US 52 Ramp (Signal)	EB			825	485	1,310					28.4	C	10.5	B	21.8	C								450	238	388			440	103	264
		WB		340	454		794			16.7	B	5.8	A			10.3	B	19.7	B	220	107	215			576	44	115					
		NB														0.0	A																
		SB		72	252	199	523			45.3	D	44.8	D	8.5	A	29.9	C			290	49	102			951	80	147			290	50	86
	41st St at NB US 52 Ramp/E Frontage Rd	EB		259	638		897			21.1	C	12.2	B			14.8	B			250	128	238		1 %	576	163	305					
		WB			713	112	825					28.6	C	19.9	B	27.4	C	23.4	C						345	199	332					
		NB		81	15	230	326			61.6	E	41.1	D	24.1	C	33.8	C			625	26	60			625	41	94			315	143	252
		SB														0.0	A																
	41st St at E Frontage Rd/Maplewood Sq	EB		291	474	103	868			10.5	B	4.1	A	2.3	A	6.0	A			320	74	146			318	39	104					
		WB		36	371	47	454			12.1	B	10.1	B	2.1	A	9.4	A	14.1	B	345	20	41		4 %	457	99	193	4 %		125	20	45
		NB		127	52	53	232			51.0	D	53.1	D	24.7	C	45.5	D			225	89	155		8 %	830	76	147					
		SB		98	62	327	487			46.9	D	54.1	D	4.5	A	19.5	B			175	72	126			809	56	114		1 %	180	38	128
	Marketplace Dr at SE Target Access	EB		52		62	114			32.5	D			5.5	A	17.9	C			410	37	85								60	32	66
		WB														0.0	A	3.0	A														
		NB		268	534		802			5.1	A	0.7	A			2.2	A			200	47	83											
		SB			354	37	391					1.0	A	0.7	A	1.0	A								510	20	20					
	Marketplace Dr at Slip Ramp from 37th St	EB				8	8							4.5	A	4.5	A													110	20	26
		WB		22		399	421			11.8	B	1.7	A	10.5	B	10.5	B	4.5	A	60	20	59							18 %	390	88	155
		NB			356		356					1.5	A			1.5	A																
		SB			360	5	365					0.6	A	0.5	A	0.6	A																
	W Circle Dr at Valleyhigh Rd (Signal)	EB		89	301	279	669			61.3	E	50.8	D	3.5	A	32.6	C			290	52	105			1110	104	168					
		WB		108	444	185	737			62.6	E	43.2	D	2.5	A	37.2	D	32.5	C	295	90	162			1321	136	202					
		NB		289	825	89	1,203			41.1	D	26.0	C	5.7	A	28.0	C			350	133	202			1129	186	283	1 %		250	23	50
		SB		101	662	43	806			66.8	E	33.3	C	3.1	A	34.7	C			310	71	139			670	178	288	1 %				
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	2	210		395	605			4.6	A			6.3	A	5.7	A			525		20								525		45
		WB														0.0	A	7.8	A														
		NB		503	75		578			8.8	A	3.8	A			8.1	A								173		75					
		SB	11		90	224	314					11.0	B			11.0	B								1030		65					
	37th St at IBM West (Signal)	EB		65	218	5	288			4.6	A	1.6	A	1.1	A	2.2	A			65	20	38											
		WB		16	265	195	476			3.3	A	0.9	A	2.6	A	1.7	A	3.2	A	80	20	20											
		NB		18	7	50	75			8.8	A	12.0	B	4.1	A	5.9	A								778	31	52					
		SB		121	3	33	157			10.1	B	1.7	A	4.2	A	8.3	A			130	43	75			727	22	47					
	37th St at IBM East (Signal)	EB			550	39	589					0.8	A	0.1	A	0.8	A								800	20	20					
		WB		394	421		815			7.2	A	0.7	A			3.1	A	3.5	A	340	56	105			482	20	20					
		NB		33		625	658			22.8	C			5.9	A	7.0	A			680	37	132								580	39	165
		SB														0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB			712	463	1,175					11.5	B	0.2	A	7.1	A								650	80	111			200		20
		WB		511	1073		1,584			23.7	C	6.6	A			12.4	B	12.9	B	265	147	225			610	81	164					
		NB														0.0	A																
		SB		97	5	163	265			79.2	E	28.7	C	10.8	B	40.5	D			972	96	174								635	38	73
	37th St at NB US 52 Ramp (Signal)	EB		364	445		809			31.6	C	5.0	A			16.3	B			175	82	147			610	20	70					
		WB			1097	92	1,189					23.2	C	6.7	A	21.9	C	27.8	C						405	212	317	5 %		185	20	64
		NB		487	431	532	1,450			50.8	D	45.0	D	23.9	C	38.8	D			820	189	276			1437	176	245			820	166	333
		SB														0.0	A																
	37th St at 21st Ave/Maplewood Sq Acces	EB		26	867	84	977			15.5	B	11.9	B	2.8	A	11.2	B			200	20	33			390	123	215	1 %		200	20	20
		WB		75	978	44	1,097			14.2	B	9.5	A	1.9	A	9.5	A	14.8	B	195	30	70		1 %	960	122	215			300	20	22
		NB		137	41	85	263			50.5	D	40.9	D	16.3	B	37.9	D			200	89	149		1 %	888	58	127					
		SB		49	56	74	179			47.7	D	34.9	C	11.5	B	29.4	C								686	83	151	4 %		130	38	76
	31st Ave at IBM	EB			38	20	58					6.3	A	2.8	A	5.1	A								983	25	49			160	20	42
		WB		226	12		238			5.8	A	7.5	A			5.9	A	4.9	A						1822	46	70					
		NB		8		139	147			4.1	A	0.0	A	2.5	A	2.6	A			380	20	21								190	23	42
		SB														0.0	A																
	IBM at Internal Roadway (Roundabout) (HCS)	EB		307	74		381					7.9	A			7.9	A								1822		55					
		WB		2	72	114	188					6.7	A			6.7	A	6.8	A						467		30					
		NB			97	1	98					6.1	A			6.1	A								421		20					
		SB		109	130	139	378					6.0	A			6.0	A								209		40					
	Marketplace Dr at E IBM Access	EB		158		198	356			11.2	B			4.1	A	7.1	A			940	30	56								110	24	43
		WB														0.0	A	2.8	A														
		NB		174	180		354			4.2	A	1.5	A			2.3	A			130	22	52											
		SB			226	156	382					0.9	A	0.6	A	0.8	A													170	20	20
	31st Ave at Internal Roadway	EB														0.0	A																
		WB		118		6	124			6.6	A	0.5	A	0.0	A	4.9	A	1.3	A						2577	34	58					
		NB			141	136	277					0.7	A	0.4	A	0.6	A																
		SB		2	239		241					0.2	A			0.2	A																
	Internal Roadway at Internal Roadway	EB		21	41	66	128			0.0	A	0.8	A	0.3	A	0.5	A																
		WB		37	46	21	104			2.3	A	0.2	A	0.0	A	0.5	A	1.2	A						781	20	20					
		NB		41	17	34	92			5.6	A	0.5	A	4.0	A	3.7	A								2577	33	55					
		SB		12	8	14	34			0.0	A			0.0	A	0.0	A								373		20					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A																
		WB		148		230	378			18.6	B	0.3	A	3.6	A	8.3	A	2.8	A	150	42	92								545	33	57
		NB			441	101	542					0.7	A	0.8	A	0.7	A													305	20	20
		SB		173	455		628			5.0	A	0.8	A			1.7	A			260	27	54											
	Marketplace Dr at SE MF Access	EB		98		194	292			15.7	C			9.4	A	11.6	B								321	74	136					
		WB														0.0	A	4.7	A														
		NB		206	256		462			3.9	A	1.1	A			2.3	A			130	33	63											
		SB			311	113	424					2.4	A	1.7	A	2.2	A								1854		20			170	20	20
	19th St at W Frontage Rd (Signal)	EB		79	801	10	890			22.9	C	17.1	B	14.7	B	17.5	B			100	38	93		10 %	1116	163	278	10 %				
		WB		108	740	307	1,155			19.3	B	17.6	B	15.7	B	17.3	B	21.1	C	110	60	142		12 %	265	180	298	12 %				
		NB		19	50	194	263			48.0	D	45.0	D	18.1	B	25.2	C			225	20	45			888	40	85			445	75	132
		SB		352	48	101	501			41.5	D	31.5	C	12.6	B	34.8	C			280	131	217			300	42	109					
	19th St at US 52 Interchange (Signal)	EB		244	421	682	1,347			42.7	D	20.2	C			28.4	C			175	99	153			276	105	186	1 %				
		WB		335	357	256	948			44.0	D	17.7	B			30.6	C	32.0	C	555	156	225			808	86	152					
		NB		565		406	971			38.6	D					38.6	D			620	201	291								340		
		SB		206		233	439			33.6	C					33.6	C			865	118	203											

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B9a
Rochester Tech Campus
2029 Build Conditions - Mitigated
AM Peak Hour

Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach	LOS By Intersection		Vehicle Queing Information (feet)												
																		Left Turn Lane					Through Lane (s)					Right Turn Lane		
		U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ---->	% Block Left[2] <----	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ---->	% Block Thru[2] <----	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
W Circle Dr at 41st St (Signal)	EB		16	254	144	414			44.6	D	43.0	D	2.6	A	28.9	C			305	20	38			944	91	150			170	20	30
	WB		45	133	16	194			52.7	D	36.2	D	11.7	B	38.2	D	23.3	C	290	21	49			1236	38	76					
	NB		132	328	99	559			53.2	D	10.0	B	3.3	A	19.3	B			330	70	112			1197	45	108			325	20	50
	SB		40	467	26	533			59.2	E	15.0	B	2.8	A	17.6	B			270	39	81			922	101	179			270	20	25
41st St at NW MF Access	EB			369	4	373					2.5	A	2.2	A	2.5	A														
	WB		4	163		167			3.3	A	0.3	A			0.4	A	2.0	A						721	20	20					
	NB		12		10	22			7.6	A			3.7	A	5.8	A								501	20	39					
	SB														0.0	A														
41st St at 31st Ave/IBM (Signal)	EB		67	156	146	369			10.2	B	7.9	A	4.6	A	7.0	A			200	27	63			1212	29	70			135	40	83
	WB		42	137	41	220			11.6	B	6.5	A	4.2	A	6.9	A	8.4	A	165	21	53			1336	37	71					
	NB		27	35	61	123			14.1	B	18.5	B	5.1	A	10.8	B			130	20	37			597	28	60					
	SB		83	49	29	161			14.0	B	15.0	B	5.1	A	12.8	B			150	37	73			906	34	70					
41st St at W Frontage Rd/Marketplace Dr	EB		26	206	44	276			16.1	B	11.4	B	3.4	A	10.6	B			160	20	44			1336	37	80			95	20	41
	WB		100	229	230	559			10.8	B	7.3	A	3.6	A	6.4	A	15.5	B	420	27	63			420	31	75			160	36	74
	NB		63	81	93	237			41.1	D	38.6	D	0.8	A	24.6	C			310	40	85			272	48	100			240		
	SB		134	71	32	237			37.2	D	39.1	D	18.2	B	35.0	D			270	45	97			140	49	104					
41st St at SB US 52 Ramp (Signal)	EB			292	141	433					10.3	B	3.8	A	8.2	A								450	44	110			440	20	36
	WB		266	352		618			15.3	B	6.0	A			9.8	A	14.8	B	220	79	153			576	41	93					
	NB														0.0	A														
	SB		38	420	207	665			29.5	C	31.8	C	7.9	A	24.1	C			290	20	50			951	148	228			290	49	91
41st St at NB US 52 Ramp/E Frontage Rd	EB		87	243		330			9.9	A	3.7	A			5.2	A			250	31	72			576	25	68					
	WB			517	33	550					8.1	A	6.5	A	8.0	A	12.1	B						345	58	149					
	NB		101	5	113	219			52.0	D	19.4	B	6.6	A	27.9	C			625	29	70			625	48	102			315	46	100
	SB														0.0	A														
41st St at E Frontage Rd/Maplewood Sq A	EB		136	199	21	356			5.8	A	1.1	A	0.7	A	2.9	A			320	33	69			318	20	27					
	WB		13	307	44	364			5.1	A	3.3	A	1.1	A	3.1	A	5.7	A	345	20	20			457	35	102			125	20	37
	NB		18	11	9	38			46.6	D	24.3	C	8.6	A	28.6	C			225	20	45			830	20	50					
	SB		32	8	225	265			48.4	D	50.3	D	2.0	A	9.1	A			175	26	68			809	20	31			180	20	33
Marketplace Dr at SE Target Access	EB		6		11	17			6.4	A			2.9	A	4.2	A			410	20	25								60	20	31
	WB														0.0	A	0.6	A												
	NB		55	201		256			2.5	A	0.3	A			0.7	A			200	20	29									
	SB			134	12	146					0.3	A	0.1	A	0.3	A														
Marketplace Dr at Slip Ramp from 37th St	EB				5	5							2.9	A	2.9	A													110	20	20
	WB		11		155	166			5.5	A			3.5	A	3.6	A	1.6	A	60	20	27								390	26	48
	NB			102		102					0.5	A			0.5	A														
	SB			127	5	132					0.3	A	0.4	A	0.3	A														
W Circle Dr at Valleyhigh Rd (Signal)	EB		57	430	221	708			66.0	E	45.8	D	3.7	A	34.2	C			290	39	85			1110	152	231					
	WB		60	266	77	403			58.6	E	29.6	C	2.0	A	28.6	C	31.3	C	295	35	68			1321	81	143					
	NB		137	425	97	659			59.6	E	25.4	C	6.2	A	29.6	C			350	93	157			1129	118	194			250	27	56
	SB		172	437	47	656			58.0	E	25.0	C	2.4	A	31.9	C			310	82	138			670	112	194					
Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	6	186		431	617			4.4	A			6.6	A	5.9	A			525		20								525	20	50
	WB														0.0	A	6.0	A												
	NB		302	73		375			6.0	A	3.8	A			5.5	A					35			173		35					
	SB	3		71	188	259					7.0	A			7.0	A					35			1030		35					
37th St at IBM West (Signal)	EB		34	202	23	259			4.1	A	1.7	A	1.5	A	2.0	A			65	20	26			1294		20					
	WB		67	197	50	314			4.7	A	0.7	A	2.3	A	1.3	A	3.9	A	80	20	40			1166		20					
	NB		4	2	15	21			8.5	A	12.3	B	3.5	A	5.2	A								778	20	39					
	SB		229	14	36	279			12.7	B	5.3	A	4.0	A	11.1	B			130	72	**126**			727	27	51					
37th St at IBM East (Signal)	EB			337	45	382					24.9	C	18.1	B	24.2	C								800	109	184					
	WB		622	593		1,215			23.5	C	3.6	A			13.3	B	14.4	B	340	167	253			475	45	138					
	NB		7		285	292			31.1	C	0.4	A	3.4	A	4.0	A			680	20	24								580	20	34
	SB														0.0	A														
37th St at SB US 52 Ramp (Signal)	EB			424	198	622					7.4	A	0.2	A	5.2	A								650	38	93			200		
	WB		251	1014		1,265			45.3	D	9.2	A			16.3	B	14.5	B	265	94	155			610	97	238					
	NB														0.0	A														
	SB		31		367	398			46.1	D	1.1	A	22.1	C	22.6	C								970	21	58			635	108	185
37th St at NB US 52 Ramp (Signal)	EB		152	303		455			35.3	D	5.7	A			14.8	B			175	57	126			610	24	65					
	WB			759	13	772					18.2	B	4.5	A	18.0	B	20.6	C						405	147	230			185	20	20
	NB		506	312	354	1,172			34.5	C	28.1	C	8.6	A	25.0	C			820	133	219			1435	103	161			820	60	108
	SB														0.0	A														
37th St at 21st Ave/Maplewood Sq Access	EB		13	618	26	657			8.2	A	3.0	A	1.1	A	3.0	A			200	20	20			378	23	65			200	20	20
	WB		26	714	22	762			6.8	A	4.1	A	1.2	A	4.1	A	6.0	A	195	20	30			960	56	126			300	20	20
	NB		58	9	14	81			47.6	D	34.5	C	6.5	A	39.2	D			200	43	94			888	20	32					
	SB		15	8		23			38.4	D	11.1	B			20.4	C								686	20	51					
31st Ave at IBM	EB			14	13	27					5.7	A	2.5	A	4.1	A								983	20	36			160	20	36
	WB		139	47		186			6.3	A	1.9	A			3.3	A	3.4	A						1822	47	72					
	NB		24		215	239			4.3	A	0.0	A	3.5	A	3.6	A			380	20	35								190	40	67
	SB														0.0	A														
IBM at Internal Roadway (Roundabout) (HCS)	EB		145	30		175					4.4	A			4.4	A								1822		21					
	WB			25	34	59					4.2	A			4.2	A	7.0	A						467		20					
	NB			115	2	117					4.5	A			4.5	A								421		21					
	SB		48	55	386	489					6.7	A			6.7	A								209		79					
Marketplace Dr at E IBM Access	EB		37		42	79			5.6	A	0.0	A	2.5	A	3.9	A			940	20	39								110	20	33
	WB														0.0	A	5.7	A												
	NB		67	66		133			2.0	A	0.8	A			1.4	A			130	20	30									
	SB			80	65	145					0.4	A	0.3	A	0.4	A													170		20
31st Ave at Internal Roadway	EB														0.0	A														
	WB		117		2	119			7.5	A			5.3	A	7.5	A	2.0	A						2577	41	64					
	NB			237	94	331					1.1	A	0.7	A	1.0	A								543		20					
	SB		8	92		100			3.8	A	0.2	A			0.4	A								400	20	21					
Internal Roadway at Internal Roadway	EB		8	27	25	60			2.0	A	0.3	A	0.2	A	0.4	A								558		20					
	WB		10	13	8	31			2.2	A	0.1	A	0.1	A	0.2	A	2.3	A						781	20	20					
	NB		71	5	17	93			5.6	A	3.5	A	3.6	A	5.0	A								2577	35	59					
	SB		25	19	25	69			4.6	A	6.5	A	2.8	A	4.5	A								373	25	41					
Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A														
	WB		75		126	201			19.1	B	0.1	A	4.1	A	8.9	A	8.4	A	150	33	69								545	28	50
	NB			459	162	621					11.8	B	4.4	A	9.8	A								977	84	145			305	34	67
	SB		208	303		511			10.3	B	4.0	A			6.5	A			260	61	115			1817	33	70					
Marketplace Dr at SE MF Access	EB		31		129	160			6.2	A			3.2	A	3.8	A								321	35	62					
	WB														0.0	A	1.9	A												
	NB		89	102		191			1.7	A	0.4	A			1.0	A			130	20	36									
	SB			75	47	122					1.1	A	0.7	A	0.9	A													170		20
19th St at W Frontage Rd (Signal)	EB		31	553	10	594			16.8	B	8.9	A	6.1	A	9.2	A			100	20	46		2 %	1116	73	166	2 %				
	WB		144	842	157	1,143			13.8	B	10.2	B	8.9	A	10.5	B	15.4	B	110	47	**107**		4 %	265	109	**220**	4 %				
	NB		7	14	72	93			51.6	D	52.6	D	7.5	A	16.7	B			225	20	30			888	20	39			445	30	55
	SB		216	31	34	281			54.0	D	35.4	D	15.8	B	47.1	D			280	120	218			300	23	67					
19th St at US 52 Interchange (Signal)	EB		106	332	403	841			45.1	D	24.2	C			29.1	C			175	55	96			276	84	165	1 %				
	WB		336	383	202	921			39.7	D	18.4	B			28.3	C	30.6	C	555	153	241			808	103	178					
	NB		515		447	962			31.5	C					31.5	C			745	170	258								340		
	SB		371		245	616			35.4	D					35.4	D			865	186	314										

AM Peak Hour

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B9b
Rochester Tech Campus
2029 Build Conditions - Mitigated
PM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB		23	223	152	398			53.9	D	53.4	D	2.5	A	33.9	C			305	20	43			944	106	167			170	20	21
		WB		196	344	39	579			58.9	E	37.9	D	24.2	C	43.9	D	25.8	C	290	84	143			1236	113	192					
		NB		298	622	179	1,099			29.0	C	6.4	A	3.2	A	12.1	B			330	104	160			1197	39	83			325	20	51
		SB		50	458	38	546			21.8	C	30.1	C	5.4	A	27.7	C			270	27	65			922	149	224			270	20	37
	41st St at NW MF Access	EB			399	11	410					2.1	A	2.1	A	2.1	A																
		WB		5	539		544			4.2	A	0.9	A			0.9	A	1.5	A						721	20	24					
		NB		5		8	13			10.6	B			4.0	A	6.0	A								501	20	33					
		SB														0.0	A																
	41st St at 31st Ave/IBM (Signal)	EB		38	323	52	413			12.3	B	13.9	B	4.1	A	12.6	B			200	20	48			1212	68	123	1 %		135	20	50
		WB		65	333	62	460			15.3	B	14.0	B	6.7	A	13.2	B	13.4	B	165	33	71			1336	77	138					
		NB		92	65	74	231			14.5	B	15.5	B	10.4	B	13.7	B			130	35	76		2 %	597	52	105					
		SB		130	49	81	260			15.3	B	22.9	C	8.6	A	14.6	B			150	54	95		2 %	906	55	107					
	41st St at W Frontage Rd/Marketplace Dr	EB		69	499	97	665			22.1	C	33.6	C	8.5	A	28.7	C			160	36	85		5 %	1336	149	247	26 %		95	60	151
		WB		234	200	225	659			22.4	C	17.6	B	5.6	A	15.2	B	25.4	C	420	88	156			420	47	95			160	49	89
		NB		119	166	422	707			46.5	D	48.4	D	1.6	A	20.0	C			310	81	147		6 %	272	116	202			240	20	51
		SB		389	162	49	600			41.6	D	41.0	D	25.4	C	40.2	D			270	147	253		5 %	140	108	204					
	41st St at SB US 52 Ramp (Signal)	EB			825	485	1,310					30.0	C	11.4	B	23.2	C								450	243	386			440	107	269
		WB		340	454		794			16.5	B	6.5	A			10.6	B	20.9	C	220	113	217			576	51	129					
		NB														0.0	A																
		SB		72	252	199	523			46.0	D	44.4	D	8.9	A	31.1	C			290	45	92			951	101	175			290	53	98
	41st St at NB US 52 Ramp/E Frontage Rd	EB		259	638		897			23.4	C	12.5	B			15.7	B			250	134	244		1 %	576	168	313					
		WB			713	112	825					29.0	C	19.9	B	27.7	C	23.7	C						345	199	330					
		NB		81	15	230	326			61.2	E	38.1	D	22.9	C	32.7	C			625	27	66			625	40	89			315	136	246
		SB														0.0	A																
	41st St at E Frontage Rd/Maplewood Sq	EB		291	474	103	868			10.7	B	3.9	A	2.3	A	6.0	A			320	77	148			318	35	99					
		WB		36	371	47	454			11.8	B	10.5	B	2.0	A	9.7	A	14.2	B	345	20	43		5 %	457	101	212	5 %		125	20	59
		NB		127	52	53	232			50.5	D	53.7	D	23.5	C	44.9	D			225	89	153			830	77	145					
		SB		98	62	327	487			45.8	D	53.6	D	4.7	A	19.7	B			175	76	129			809	55	117		1 %	180	41	134
	Marketplace Dr at SE Target Access	EB		52		62	114			41.3	E			6.0	A	21.3	C			410	43	99								60	35	71
		WB														0.0	A	3.5	A														
		NB		268	534		802			5.4	A	0.7	A			2.3	A			200	50	90											
		SB			354	37	391					1.0	A	0.7	A	1.0	A								510	20	20					
	Marketplace Dr at Slip Ramp from 37th St	EB				8	8							5.6	A	5.6	A													110	20	26
		WB		22		399	421			12.2	B	2.8	A	11.9	B	11.9	B	4.8	A	60	20	62							21 %	390	92	172
		NB			356		356					1.5	A			1.5	A																
		SB			360	5	365					0.6	A	0.4	A	0.6	A																
	W Circle Dr at Valleyhigh Rd (Signal)	EB		89	301	279	669			63.2	E	45.7	D	3.5	A	30.0	C			290	54	108			1110	106	172					
		WB		108	444	185	737			60.8	E	43.0	D	2.6	A	36.1	D	28.7	C	295	52	89			1321	143	214					
		NB		289	825	89	1,203			59.5	E	27.2	C	6.0	A	33.2	C			350	155	220		1 %	1129	193	285	1 %		250	24	53
		SB		101	662	43	806			37.6	D	11.4	B	2.7	A	14.2	B			310	49	90			670	77	138					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	2	210		395	605			4.6	A			6.3	A	5.7	A			525		20								525		45
		WB														0.0	A	7.8	A														
		NB		503	75		578			8.8	A	3.8	A			8.1	A								173		75					
		SB	11		90	224	314					11.0	B			11.0	B								1030		65					
	37th St at IBM West (Signal)	EB		65	218	5	288			4.6	A	1.6	A	1.2	A	2.2	A			65	20	41			1294		20					
		WB		16	265	195	476			3.6	A	0.9	A	2.7	A	1.7	A	3.2	A	80	20	20			1166		20					
		NB		18	7	50	75			9.3	A	9.7	A	4.1	A	5.8	A								778	31	51					
		SB		121	3	33	157			10.1	B	2.4	A	4.2	A	8.3	A			130	44	76			727	22	48					
	37th St at IBM East (Signal)	EB			550	39	589					33.7	C	25.0	C	33.2	C								800	162	239					
		WB		394	421		815			14.9	B	2.9	A			8.4	A	15.7	B	340	82	136			475	22	57					
		NB		33		625	658			41.4	D			7.8	A	9.6	A			680	75	248								580	112	274
		SB														0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB			712	463	1,175					13.1	B	0.4	A	8.0	A								650	82	114			200		20
		WB		511	1073		1,584			23.8	C	7.1	A			12.5	B	13.2	B	265	141	223			610	84	172					
		NB														0.0	A																
		SB		97	5	163	265			79.5	E	19.7	B	14.1	B	36.5	D			970	93	169								635	47	87
	37th St at NB US 52 Ramp (Signal)	EB		364	445		809			35.6	D	6.0	A			18.5	B			175	89	158			610	29	87					
		WB			1097	92	1,189					28.2	C	7.4	A	26.6	C	28.1	C						405	246	378	11 %		185	30	133
		NB		487	431	532	1,450			52.4	D	44.0	D	11.8	B	34.8	C			820	191	280			1435	170	233			820	86	135
		SB														0.0	A																
	37th St at 21st Ave/Maplewood Sq Acces	EB		26	867	84	977			18.5	B	11.3	B	2.8	A	10.8	B			200	20	33		1 %	378	112	213	1 %		200	20	20
		WB		75	978	44	1,097			15.2	B	11.0	B	2.0	A	10.9	B	15.5	B	195	29	60		2 %	960	137	249			300	20	20
		NB		137	41	85	263			55.5	E	42.9	D	20.5	C	42.2	D			200	92	157		1 %	888	67	230					
		SB		49	56	74	179			47.5	D	32.0	C	12.8	B	28.9	C								686	77	144	3 %		130	38	73
	31st Ave at IBM	EB			38	20	58					6.1	A	2.7	A	4.9	A								983	23	48			160	20	40
		WB		226	12		238			6.4	A	7.4	A			6.4	A	5.0	A						1822	51	74					
		NB		8		139	147			4.8	A			2.9	A	3.0	A			380	20	25								190	30	51
		SB														0.0	A																
	IBM at Internal Roadway (Roundabout) (HCS)	EB		307	74		381					7.9	A			7.9	A								1822		55					
		WB		2	72	114	188					6.7	A			6.7	A	6.8	A						467		30					
		NB			97	1	98					6.1	A			6.1	A								421		20					
		SB		109	130	139	378					6.0	A			6.0	A								209		40					
	Marketplace Dr at E IBM Access	EB		158		198	356			18.7	C			5.4	A	11.2	B			940	54	115								110	38	82
		WB														0.0	A	5.0	A														
		NB		174	180		354			5.1	A	1.8	A			3.4	A			130	34	63											
		SB			226	156	382					1.1	A	0.8	A	1.0	A													170	20	20
	31st Ave at Internal Roadway	EB														0.0	A																
		WB		118		6	124			8.5	A			5.5	A	8.3	A	2.1	A						2577	43	71					
		NB			141	136	277					1.3	A	0.8	A	1.1	A																
		SB		2	239		241			2.5	A	0.3	A			0.3	A								400	20	20					
	Internal Roadway at Internal Roadway	EB		21	41	66	128			2.2	A	1.0	A	0.5	A	1.0	A								558	20	20					
		WB		37	46	21	104			2.6	A	0.3	A	0.4	A	0.6	A	1.7	A						781	20	24					
		NB		41	17	34	92			6.3	A	2.6	A	4.4	A	4.2	A								2577	37	61					
		SB		12	8	14	34			5.4	A	6.6	A	2.8	A	4.6	A								373	20	39					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A																
		WB		148		230	378			17.7	B	0.3	A	4.9	A	9.3	A	9.7	A	150	55	109								545	42	75
		NB			441	101	542					14.2	B	3.8	A	12.2	B								977	87	145			305	27	54
		SB		173	455		628			12.2	B	6.2	A			7.9	A			260	58	108			1817	49	88					
	Marketplace Dr at SE MF Access	EB		98		194	292			23.1	C			15.0	C	17.8	C								321	92	179					
		WB														0.0	A	6.2	A														
		NB		206	256		462			4.5	A	1.3	A			2.7	A			130	38	68											
		SB			311	113	424					2.3	A	1.7	A	2.1	A													170	20	20
	19th St at W Frontage Rd (Signal)	EB		79	801	10	890			23.7	C	18.3	B	15.7	B	18.7	B			100	46	108		10 %	1116	177	300	10 %				
		WB		108	740	307	1,155			20.1	C	18.8	B	17.3	B	18.5	B	22.5	C	110	57	133		13 %	265	196	324	13 %				
		NB		19	50	194	263			46.3	D	44.7	D	19.4	B	26.4	C			225	20	48			888	37	77			445	73	134
		SB		352	48	101	501			43.8	D	32.4	C	13.2	B	36.6	D			280	148	235			300	45	115					
	19th St at US 52 Interchange (Signal)	EB		244	421	682	1,347			42.7	D	20.3	C			28.6	C			175	98	149			276	101	186	2 %				
		WB		335	357	256	948			45.2	D	18.2	B			31.4	C	33.4	C	555	156	235			808	80	140					
		NB		565		406	971			41.5	D					41.5	D			745	227	326								340		
		SB		206		233	439			32.3	C					32.3	C			865	115	195										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B10a
Rochester Tech Campus
2045 Build Conditions
AM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
AM Peak Hour	W Circle Dr at 41st St (Signal)	EB		14	452	173	639			54.6	D	38.4	D	2.9	A	29.3	C			305	20	35			944	151	231	3 %		170	20	59
		WB		45	292	16	353			50.0	D	32.1	C	20.2	C	33.8	C	27.1	C	290	22	49			1236	77	134					
		NB		166	318	99	583			53.5	D	14.5	B	4.4	A	24.1	C			330	81	129			1197	55	124			325	23	58
		SB		40	455	29	524			60.2	E	21.2	C	3.6	A	23.2	C			270	38	81			922	122	210			270	20	32
	41st St at NW MF Access	EB			504	4	508					3.2	A	3.5	A	3.2	A								1236		20					
		WB		4	260		264			6.2	A	0.5	A			0.5	A	2.4	A						721	20	20					
		NB		12		10	22			8.7	A			3.8	A	5.8	A								501	20	41					
		SB														0.0	A																
	41st St at 31st Ave/RTC West (Signal)	EB		90	221	147	458			11.3	B	8.5	A	5.5	A	8.1	A			200	38	85			1212	46	100			135	42	99
		WB		42	189	41	272			12.8	B	7.9	A	4.8	A	8.2	A	9.2	A	165	23	61			1336	48	88					
		NB		25	35	61	121			14.5	B	20.8	C	6.3	A	12.3	B			130	20	33			597	31	70					
		SB		83	49	54	186			15.3	B	15.1	B	6.0	A	12.4	B			150	40	77			906	42	88					
	41st St at W Frontage Rd/Marketplace Dr	EB		26	227	45	298			16.3	B	11.5	B	4.3	A	10.9	B			160	20	39			1336	43	96	1 %		95	20	51
		WB		107	265	241	613			10.9	B	7.3	A	3.4	A	6.4	A	15.0	B	420	28	61			420	38	82			160	35	69
		NB		65	82	101	248			41.2	D	38.1	D	0.8	A	23.7	C			310	42	87			272	49	102			240		
		SB		140	71	32	243			36.8	D	38.5	D	17.7	B	34.9	C			270	44	88			140	48	104					
	41st St at SB US 52 Ramp (Signal)	EB			311	157	468					10.5	B	4.8	A	8.6	A								450	46	110			440	20	49
		WB		266	393		659			15.6	B	6.5	A			10.1	B	15.0	B	220	79	154			576	46	105					
		NB														0.0	A																
		SB		38	420	220	678			30.7	C	31.5	C	9.1	A	24.2	C			290	20	49			951	142	220			290	55	107
	41st St at NB US 52 Ramp/E Frontage Rd	EB		97	252		349			10.7	B	4.1	A			5.9	A			250	38	83			576	26	70					
		WB			531	33	564					8.9	A	6.4	A	8.8	A	12.9	B						345	64	153					
		NB		128	5	113	246			50.7	D	27.0	C	6.4	A	29.3	C			625	33	75			625	52	106			315	42	97
		SB														0.0	A																
	41st St at E Frontage Rd (Signal)	EB		128	216	21	365			5.6	A	1.2	A	0.5	A	2.7	A			320	29	63			318	20	34					
		WB		13	337	44	394			5.1	A	2.9	A	0.9	A	2.7	A	5.1	A	345	20	20			457	35	101			125	20	34
		NB		18	11	9	38			48.8	D	25.1	C	7.7	A	29.6	C			225	20	45			830	20	51					
		SB		24	8	209	241			51.0	D	54.4	D	2.2	A	7.9	A			175	21	61			809	20	28			180	20	47
	Marketplace Dr at SE Target Access	EB		6		11	17			6.1	A			3.0	A	3.9	A			410	20	22								60	20	31
		WB														0.0	A	0.6	A														
		NB		56	214		270			2.5	A	0.3	A			0.7	A			200	20	31											
		SB			139	12	151					0.3	A	0.3	A	0.3	A																
	Marketplace Dr at Slip Ramp from 37th St	EB				5	5							3.0	A	3.0	A													110	20	22
		WB		11		158	169			5.4	A	0.0	A	3.6	A	3.7	A	1.6	A	60	20	27								390	28	53
		NB			109		109					0.4	A			0.4	A																
		SB			132	5	137					0.2	A	0.3	A	0.2	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB		70	556	396	1,022			61.4	E	45.2	D	4.2	A	30.0	C			290	42	95		1 %	1110	186	268	1 %		270	20	28
		WB		68	325	78	471			59.5	E	29.5	C	2.1	A	29.5	C	32.6	C	295	42	79			1321	100	161					
		NB		269	435	112	816			56.8	E	28.9	C	8.0	A	35.2	D			350	149	224			1129	124	196			250	34	71
		SB		174	442	57	673			59.6	E	31.4	C	2.5	A	36.0	D			310	86	148			670	129	210					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	6	186		514	700					4.4	A	7.6	A	6.7	A			525		20								525	20	65
		WB														0.0	A	6.8	A														
		NB		372	73		445			6.8	A	3.8	A			6.3	A								173		45					
		SB	3		71	188	259					7.8	A			7.8	A								1030		40					
	37th St at RTC West (Signal)	EB		34	202	23	259			4.2	A	1.8	A	1.2	A	2.1	A			65	20	26			1294		20					
		WB		67	197	50	314			4.6	A	0.8	A	2.2	A	1.3	A	4.0	A	80	20	43			1166		20					
		NB		4	2	15	21			8.1	A	7.9	A	3.5	A	5.1	A								778	20	39					
		SB		229	14	36	279			12.9	B	5.6	A	4.5	A	11.2	B			130	69	**120**			727	31	76					
	37th St at RTC East (Signal)	EB			339	45	384					24.3	C	18.4	B	23.7	C								800	108	184					
		WB		622	609		1,231			23.4	C	3.8	A			13.3	B	14.2	B	340	163	246			475	43	116					
		NB		7		285	292			34.4	C	0.3	A	3.3	A	4.0	A			680	20	26								580	20	20
		SB														0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB			427	197	624					8.0	A	0.2	A	5.5	A								650	43	99			200		
		WB		262	1029		1,291			45.7	D	9.7	A			17.0	B	15.1	B	265	97	160			610	104	238					
		NB														0.0	A																
		SB		44		371	415			42.2	D	0.8	A	21.4	C	22.5	C			970	29	76								635	106	186
	37th St at NB US 52 Ramp (Signal)	EB		152	319		471			36.9	D	5.7	A			15.0	B			175	55	124			610	21	60					
		WB			785	19	804					17.8	B	3.6	A	17.5	B	21.0	C						405	145	232	1 %		185	20	20
		NB		506	312	364	1,182			36.3	D	29.4	C	8.9	A	25.9	C			820	137	227			1435	104	167			820	60	101
		SB														0.0	A																
	37th St at 21st Ave/E Frontage Rd (Signa	EB		13	642	28	683			8.8	A	3.0	A	0.9	A	3.0	A			200	20	20			378	25	70			200	20	20
		WB		28	744	22	794			6.7	A	3.9	A	1.6	A	3.9	A	5.8	A	195	20	30			960	53	121			300	20	20
		NB		60	9	16	85			46.1	D	41.5	D	6.2	A	38.1	D			200	43	91			888	20	33					
		SB		15	8		23			42.1	D	11.8	B			22.1	C								686	20	49					
	Watson Ave at RTC South	EB			14	13	27					6.0	A	2.4	A	4.4	A								983	20	38			160	20	33
		WB		139	47		186			6.2	A	2.0	A			3.4	A	3.5	A						1822	48	72					
		NB		24		215	239			4.3	A	0.0	A	3.5	A	3.6	A			380	20	35								190	41	65
		SB														0.0	A																
	IBM at Internal Roadway (Roundabout) (HCS)	EB		145	30		175					4.4	A			4.4	A								1822		21					
		WB			25	34	59					4.2	A			4.2	A	5.7	A						467		20					
		NB			115	2	117					4.5	A			4.5	A								421		21					
		SB		48	55	386	489					6.7	A			6.7	A								209		79					
	Marketplace Dr at E RTC Access	EB		37		42	79			5.7	A	0.0	A	2.6	A	4.0	A			940	20	39								110	20	32
		WB														0.0	A	1.5	A														
		NB		67	71		138			2.0	A	0.9	A			1.4	A			130	20	33											
		SB			86	65	151					0.4	A	0.3	A	0.4	A													170		20
	Watson Ave at Internal Roadway	EB														0.0	A																
		WB		117		2	119			7.9	A			5.2	A	7.8	A	2.1	A						2577	42	71					
		NB			237	94	331					1.1	A	0.7	A	1.0	A								543		20					
		SB		8	92		100			3.5	A	0.2	A			0.4	A								400	20	21					
	Internal Roadway at Internal Roadway	EB		8	27	25	60			1.8	A	0.3	A	0.2	A	0.5	A								558		20					
		WB		10	13	8	31			2.2	A	0.1	A	0.1	A	0.2	A	2.3	A						781	20	20					
		NB		71	5	17	93			5.5	A	2.7	A	3.8	A	4.8	A								2577	35	58					
		SB		25	19	25	69			4.6	A	6.5	A	2.9	A	4.5	A								373	26	44					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A																
		WB		75		126	201			19.1	B	0.1	A	5.0	A	9.5	A	9.2	A	150	35	71								545	32	59
		NB			606	162	768					12.8	B	4.5	A	11.1	B								977	102	171			305	34	68
		SB		208	400		608			11.5	B	4.4	A			6.8	A			260	64	119			1817	40	78					
	Marketplace Dr at SE MF Access	EB		31		129	160			6.5	A			3.2	A	3.8	A								321	35	62					
		WB														0.0	A	1.9	A														
		NB		89	107		196			1.7	A	0.4	A			1.0	A			130	20	35											
		SB			81	47	128					1.1	A	0.7	A	1.0	A													170		20
	19th St at W Frontage Rd (Signal)	EB		31	561	11	603			18.1	B	9.0	A	5.8	A	9.4	A			100	20	47		2 %	1116	82	172	2 %				
		WB		148	854	157	1,159			14.3	B	10.4	B	9.8	A	10.8	B	15.0	B	110	47	**105**		4 %	265	116	**225**	4 %				
		NB		8	14	74	96			53.4	D	50.0	D	7.5	A	16.0	B			225	20	27			888	20	40			445	33	59
		SB		216	31	34	281			50.6	D	36.1	D	14.9	B	44.8	D			280	111	195			300	21	64					
	19th St at US 52 Interchange (Signal)	EB		112	328	411	851			44.9	D	25.2	C			30.1	C			175	58	100			276	88	147	1 %				
		WB		344	374	211	929			41.0	D	19.3	B			29.5	C	30.9	C	555	156	244			808	105	176					
		NB		526		457	983			30.8	C					30.8	C			745	176	261								340		
		SB		388		259	647			34.6	C					34.6	C			865	189	327										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B10b
Rochester Tech Campus
2045 Build Conditions
PM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB		5	526	157	688			57.9	E	55.2	E	3.2	A	43.3	D			305	20	20		1 %	944	213	307	12 %		170	20	65
		WB		196	670	39	905			56.5	E	36.8	D	27.8	C	40.6	D	31.7	C	290	88	155		1 %	1236	206	305	1 %				
		NB		401	565	179	1,145			35.1	D	8.1	A	4.8	A	17.1	B			330	138	216			1197	43	92			325	22	57
		SB		50	474	59	583			25.9	C	36.2	D	11.5	B	32.8	C			270	30	66			922	165	245			270	25	59
	41st St at NW MF Access	EB			587	11	598					3.4	A	3.5	A	3.4	A								1236		20					
		WB		5	746		751			4.8	A	1.3	A			1.3	A	2.4	A						721	20	38					
		NB		5		8	13			14.9	B			4.4	A	7.4	A								501	20	36					
		SB														0.0	A																
	41st St at 31st Ave/RTC West (Signal)	EB		63	435	52	550			15.7	B	14.1	B	4.4	A	13.4	B			200	33	73			1212	95	178	3 %		135	20	48
		WB		65	427	62	554			16.6	B	17.4	B	9.2	A	16.4	B	15.1	B	165	36	75		2 %	1336	104	179	2 %				
		NB		93	65	74	232			16.3	B	16.4	B	11.0	B	14.9	B			130	36	77			597	53	112					
		SB		130	49	125	304			17.6	B	26.4	C	11.1	B	16.2	B			150	58	110			906	71	140					
	41st St at W Frontage Rd/Marketplace Dr	EB		70	550	98	718			23.1	C	36.2	D	11.7	B	31.5	C			160	40	103		9 %	1336	176	294	30 %		95	64	161
		WB		249	231	237	717			24.9	C	19.4	B	5.5	A	16.8	B	26.5	C	420	102	175			420	57	105			160	50	88
		NB		120	167	451	738			47.0	D	48.8	D	1.7	A	19.6	B			310	85	157		5 %	272	113	196	5 %		240	20	63
		SB		408	163	50	621			42.2	D	42.2	D	27.2	C	40.9	D			270	153	264		6 %	140	114	210					
	41st St at SB US 52 Ramp (Signal)	EB			887	522	1,409					32.5	C	11.9	B	25.0	C				450	257	421			440	127	315					
		WB		340	503		843			16.0	B	6.0	A			10.0	B	21.5	C	220	105	212			576	49	124					
		NB														0.0	A																
		SB		72	252	208	532			46.4	D	43.8	D	9.1	A	31.0	C			290	50	107			951	99	170			290	53	95
	41st St at NB US 52 Ramp/E Frontage Rd	EB		284	675		959			22.0	C	13.3	B			15.9	B			250	134	249		1 %	576	181	312					
		WB			723	112	835					31.6	C	21.7	C	30.3	C	24.5	C			345	219	341									
		NB		120	15	230	365			57.4	E	38.2	D	19.1	B	32.6	C			625	35	79			625	46	99			315	108	210
		SB														0.0	A																
	41st St at E Frontage Rd (Signal)	EB		267	535	103	905			9.7	A	3.8	A	2.3	A	5.3	A			320	66	132			318	30	90					
		WB		36	406	35	477			14.2	B	9.0	A	1.9	A	8.8	A	13.4	B	345	20	41		4 %	457	97	192	4 %		125	20	42
		NB		127	54	53	234			49.1	D	54.0	D	23.7	C	44.5	D			225	90	156			830	84	161					
		SB		79	61	302	442			47.3	D	56.2	E	3.7	A	18.7	B			175	59	112			809	50	97			180	32	114
	Marketplace Dr at SE Target Access	EB		52		61	113			40.4	E			6.6	A	22.4	C			410	40	92								60	32	63
		WB														0.0	A	3.4	A														
		NB		269	569		838			5.8	A	0.8	A			2.4	A			200	52	92											
		SB			374	37	411					1.0	A	0.8	A	1.0	A								510	20	20					
	Marketplace Dr at Slip Ramp from 37th St	EB				8	8							4.8	A	4.8	A													110	20	26
		WB		22		406	428			13.6	B	0.0	A	14.5	B	14.5	B	5.7	A	60	24	78							28 %	390	106	200
		NB			377		377					1.6	A			1.6	A																
		SB			377	5	382					0.6	A	0.5	A	0.6	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB		107	365	514	986			62.5	E	45.9	D	4.0	A	25.8	C			290	60	116			1110	128	195					
		WB		134	563	189	886			62.5	E	47.1	D	3.1	A	40.1	D	33.3	C	295	63	108			1321	192	275	1 %				
		NB		530	849	111	1,490			75.8	E	30.8	C	7.4	A	44.9	D			350	261	378	2 %	2 %	1129	230	398	1 %		250	30	64
		SB		103	673	51	827			36.2	D	12.3	B	2.8	A	14.6	B			310	47	88			670	78	133					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	2	210		482	692			4.6	A			7.3	A	6.5	A			525		20								525		60
		WB														0.0	A	7.8	A														
		NB		618	75		693			11.1	B	3.8	A			10.3	B								173		115					
		SB	11		90	224	314					13.8	B			13.8	B								1030		80					
	37th St at RTC West (Signal)	EB		65	218	5	288			4.4	A	1.5	A	1.5	A	2.1	A			65	20	40			1294		20					
		WB		16	265	195	476			4.0	A	1.0	A	2.9	A	1.9	A	3.4	A	80	20	20			1166		20			585	20	20
		NB		18	7	50	75			9.6	A	10.4	B	4.1	A	5.9	A								778	30	52					
		SB		121	3	33	157			10.7	B	2.1	A	4.2	A	8.8	A			130	45	79			727	20	46					
	37th St at RTC East (Signal)	EB			556	39	595					33.3	C	24.0	C	32.7	C								800	158	233					
		WB		394	455		849			16.3	B	2.8	A			8.7	A	15.4	B	340	89	158			475	26	88					
		NB		33		625	658			39.9	D			7.6	A	9.2	A			680	64	213								580	119	278
		SB														0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB			718	463	1,181					13.7	B	0.3	A	8.4	A								650	82	111			200		20
		WB		531	1113		1,644			24.9	C	8.2	A			13.5	B	11.4	B	265	151	232			610	108	207					
		NB														0.0	A																
				117	5	164	286									0.0	A																
	37th St at NB US 52 Ramp (Signal)	EB		364	471		835			38.5	D	5.6	A			19.3	B			175	100	173	2 %		610	21	74					
		WB			1157	103	1,260					30.1	C	7.8	A	28.4	C	29.2	C		405	272	402	15 %		185	44	179					
		NB		487	431	543	1,461			53.6	D	45.6	D	12.9	B	36.0	D			820	194	293			1435	166	236			820	91	150
		SB														0.0	A																
	37th St at 21st Ave/E Frontage Rd (Signa	EB		26	897	91	1,014			19.8	B	12.2	B	2.8	A	11.6	B			200	20	35		1 %	378	125	230	2 %		200	20	41
		WB		81	1040	44	1,165			17.0	B	12.2	B	2.0	A	12.1	B	15.8	B	195	35	67		3 %	960	148	249			300	20	21
		NB		146	41	92	279			50.1	D	38.1	D	18.0	B	37.7	D			200	99	166			888	66	143					
		SB		49	56	74	179			45.1	D	29.7	C	13.7	B	27.4	C								686	76	140	2 %		130	40	79
	Watson Ave at RTC South	EB			38	20	58					6.1	A	2.6	A	4.8	A								983	22	46			160	20	40
		WB		226	12		238			6.5	A	7.8	A			6.6	A	5.2	A						1822	51	75					
		NB		8		139	147			4.2	A			3.0	A	3.1	A			380	20	24								190	31	52
		SB														0.0	A																
	IBM at Internal Roadway (Roundabout) (HCS)	EB		307	74		381					7.9	A			7.9	A								1822		55					
		WB		2	72	114	188					6.7	A			6.7	A	6.8	A						467		30					
		NB			97	1	98					6.1	A			6.1	A								421		20					
		SB		109	130	139	378					6.0	A			6.0	A								209		40					
	Marketplace Dr at E RTC Access	EB		158		198	356			18.9	C			5.4	A	11.4	B			940	58	116								110	38	83
		WB														0.0	A	5.1	A														
		NB		174	194		368			5.5	A	1.9	A			3.5	A			130	36	72											
		SB			244	156	400					1.2	A	0.8	A	1.0	A								347		20			170	20	20
	Watson Ave at Internal Roadway	EB														0.0	A																
		WB		118		6	124			8.8	A			5.0	A	8.6	A	2.2	A						2577	46	76					
		NB			141	136	277					1.3	A	0.8	A	1.1	A								543		20					
		SB		2	239		241			3.4	A	0.3	A			0.3	A								400	20	20					
	Internal Roadway at Internal Roadway	EB		21	41	66	128			2.4	A	1.1	A	0.5	A	1.0	A								558	20	20					
		WB		37	46	21	104			2.6	A	0.3	A	0.5	A	0.6	A	1.7	A						781	20	23					
		NB		41	17	34	92			6.2	A	2.6	A	4.0	A	4.1	A								2577	36	58					
		SB		12	8	14	34			5.2	A	7.1	A	2.6	A	4.5	A								373	20	41					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A																
		WB		148		230	378			19.0	B	0.3	A	5.9	A	10.5	B	10.7	B	150	63	119								545	48	86
		NB			590	101	691					15.4	B	4.0	A	13.7	B								977	113	174			305	28	51
		SB		173	604		777			13.8	B	6.4	A			8.1	A			260	59	108			1817	57	100					
	Marketplace Dr at SE MF Access	EB		98		194	292			23.9	C			16.1	C	18.8	C								321	92	177					
		WB														0.0	A	6.4	A														
		NB		206	270		476			4.5	A	1.3	A			2.7	A			130	37	66											
		SB			329	113	442					2.4	A	1.7	A	2.2	A													170	20	20
	19th St at W Frontage Rd (Signal)	EB		79	813	11	903			26.6	C	18.8	B	13.6	B	19.5	B			100	53	121		12 %	1116	181	299	12 %				
		WB		112	753	307	1,172			20.0	C	19.6	B	19.2	B	19.5	B	23.7	C	110	61	134		15 %	265	205	334	15 %				
		NB		20	50	201	271			48.6	D	47.5	D	21.4	C	28.1	C			225	20	47			888	39	81			445	79	146
		SB		352	48	101	501			46.5	D	34.3	C	14.1	B	38.9	D			280	156	254			300	47	127					
	19th St at US 52 Interchange (Signal)	EB		256	414	696	1,366			43.0	D	20.8	C			29.2	C			175	100	152			276	112	206	1 %				
		WB		343	353	268	964			44.8	D	18.8	B			31.9	C	33.7	C	555	160	241			808	83	141					
		NB		575		417	992			41.0	D					41.0	D			745	226	317								340		
		SB		217		244	461			32.6	C					32.6	C			865	118	196										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B11a
Rochester Tech Campus
2045 Build Conditions - Mitigated
AM Peak Hour

AM Peak Hour

Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																			Left Turn Lane					Through Lane (s)					Right Turn Lane			
		U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
W Circle Dr at 41st St (Signal)	EB		14	452	173	639			35.5	D	38.6	D	2.9	A	28.8	C	26.6	C	305	20	31			944	149	222	2 %		170	20	47
	WB		45	292	16	353			33.3	C	27.8	C	10.8	B	27.8	C			290	20	46			1236	74	128					
	NB		166	318	99	583			64.9	E	6.9	A	2.6	A	22.9	C			330	79	132			1197	29	79			325	20	43
	SB		40	455	29	524			62.1	E	26.0	C	4.3	A	27.3	C			270	34	79			922	138	223			270	20	31
41st St at NW MF Access	EB			504	4	508					3.1	A	3.1	A	3.1	A	2.4	A													
	WB		4	260		264			5.0	A	0.6	A			0.7	A								721	20	20					
	NB		12		10	22			9.0	A			4.2	A	6.8	A								501	20	42					
	SB														0.0	A															
41st St at 31st Ave/RTC West (Signal)	EB		90	221	147	458			11.2	B	7.7	A	4.8	A	7.5	A	9.0	A	200	38	84			1212	42	90			135	40	79
	WB		42	189	41	272			12.7	B	8.0	A	5.5	A	8.2	A			165	21	52			1336	47	88					
	NB		25	35	61	121			14.8	B	19.5	B	5.4	A	11.3	B			130	20	37			597	29	67					
	SB		83	49	54	186			15.7	B	16.5	B	6.4	A	13.0	B			150	41	84			906	45	85					
41st St at W Frontage Rd/Marketplace Dr	EB		26	227	45	298			14.8	B	11.6	B	3.9	A	10.8	B	15.3	B	160	20	39			1336	46	106	2 %		95	20	44
	WB		107	265	241	613			11.7	B	7.3	A	3.7	A	6.6	A			420	31	66			420	38	81			160	38	79
	NB		65	82	101	248			40.8	D	39.1	D	0.8	A	24.3	C			310	44	92			272	52	104			240		
	SB		140	71	32	243			38.5	D	39.3	D	16.6	B	35.9	D			270	49	100			140	46	100					
41st St at SB US 52 Ramp (Signal)	EB			311	157	468					10.4	B	4.9	A	8.5	A	14.6	B						450	47	114			440	20	52
	WB		266	393		659			16.8	B	6.0	A			10.1	B			220	83	166			576	43	100					
	NB														0.0	A															
	SB		38	420	220	678			31.3	C	30.9	C	9.1	A	23.7	C			290	20	48			951	140	211			290	54	107
41st St at NB US 52 Ramp/E Frontage Rd	EB		97	252		349			11.1	B	4.0	A			5.8	A	12.9	B	250	36	83			576	28	70					
	WB			531	33	564					9.2	A	5.8	A	9.0	A								345	68	168					
	NB		128	5	113	246			49.8	D	17.2	B	5.8	A	29.0	C			625	34	79			625	52	107			315	40	87
	SB														0.0	A															
41st St at E Frontage Rd (Signal)	EB		128	216	21	365			5.7	A	1.1	A	0.6	A	2.7	A	4.8	A	320	30	62			318	20	29					
	WB		13	337	44	394			4.2	A	2.9	A	1.0	A	2.7	A			345	20	20		1 %	457	36	101	1 %		125	20	26
	NB		18	11	9	38			46.5	D	18.8	B	10.3	B	26.5	C			225	20	44			830	20	48					
	SB		24	8	209	241			46.6	D	52.8	D	2.0	A	7.4	A			175	20	51			809	20	29			180	20	35
Marketplace Dr at SE Target Access	EB		6		11	17			6.5	A			2.7	A	4.0	A	0.7	A	410	20	25								60	20	31
	WB														0.0	A															
	NB		56	214		270			2.6	A	0.3	A			0.8	A			200	20	33										
	SB			139	12	151					0.3	A	0.2	A	0.3	A															
Marketplace Dr at Slip Ramp from 37th St	EB				5	5							3.0	A	3.0	A	1.7	A											110	20	23
	WB		11		158	169			5.7	A	0.0	A	3.7	A	3.8	A			60	20	27								390	29	52
	NB			109		109					0.5	A			0.5	A															
	SB			132	5	137					0.2	A	0.1	A	0.2	A															
W Circle Dr at Valleyhigh Dr (Signal)	EB		70	556	396	1,022			69.3	E	48.6	D	4.8	A	32.9	C	34.9	C	290	57	166		4 %	1110	196	332	5 %		270	20	92
	WB		68	325	78	471			65.8	E	33.5	C	2.1	A	33.2	C			295	41	76			1321	106	198	1 %				
	NB		269	435	112	816			60.4	E	32.9	C	8.9	A	38.8	D			350	156	243			1129	131	221			250	34	70
	SB		174	442	57	673			69.0	E	25.9	C	2.6	A	34.5	C			310	84	154			670	104	177					
Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	6	186		514	700					4.4	A	7.6	A	6.7	A	6.8	A	525		20								525	20	65
	WB														0.0	A															
	NB		372	73		445			6.8	A	3.8	A			6.3	A								173		45					
	SB	3		71	188	259					7.8	A			7.8	A								1030		40					
37th St at RTC West (Signal)	EB		34	202	23	259			4.5	A	1.6	A	1.3	A	2.0	A	3.7	A	65	20	30			1294		20					
	WB		67	197	50	314			4.5	A	0.7	A	2.1	A	1.2	A			80	20	37			1166		20					
	NB		4	2	15	21			9.3	A	14.2	B	3.8	A	5.3	A								778	20	39					
	SB		229	14	36	279			12.2	B	5.3	A	4.1	A	10.7	B			130	68	**120**			727	27	55					
37th St at RTC East (Signal)	EB			339	45	384					24.6	C	19.7	B	24.1	C	14.1	B						800	106	185					
	WB		622	609		1,231			23.2	C	3.5	A			13.0	B			340	165	250			475	37	109					
	NB		7		285	292			30.7	C	0.2	A	3.3	A	3.8	A			680	20	22								580	20	28
	SB														0.0	A															
37th St at SB US 52 Ramp (Signal)	EB			427	197	624					7.5	A	0.2	A	5.2	A	14.8	B						650	42	97			200		
	WB		262	1029		1,291			46.1	D	9.3	A			16.5	B			265	95	152			610	103	230					
	NB														0.0	A															
	SB		44		371	415			46.1	D	1.0	A	21.6	C	23.0	C								970	30	77			635	105	182
37th St at NB US 52 Ramp (Signal)	EB		152	319		471			33.7	C	5.6	A			14.0	B	20.7	C	175	53	116			610	24	65					
	WB			785	19	804					18.5	B	3.5	A	18.2	B								405	148	231	1 %		185	20	20
	NB		506	312	364	1,182			35.2	D	28.9	C	8.7	A	25.4	C			820	137	229			1435	107	170			820	59	102
	SB														0.0	A															
37th St at 21st Ave/E Frontage Rd (Signa	EB		13	642	28	683			9.4	A	2.9	A	1.0	A	2.9	A	5.7	A	200	20	20			378	24	66			200	20	20
	WB		28	744	22	794			7.4	A	3.7	A	1.3	A	3.7	A			195	20	32			960	50	117			300	20	20
	NB		60	9	16	85			47.6	D	41.3	D	8.5	A	39.5	D			200	42	89			888	20	32					
	SB		15	8		23			46.2	D	9.2	A			22.7	C								686	20	51					
Watson Ave at RTC South	EB			14	13	27					5.9	A	2.5	A	4.3	A	3.5	A						983	20	37			160	20	34
	WB		139	47		186			6.5	A	1.9	A			3.4	A								1822	49	72					
	NB		24		215	239			4.4	A	0.1	A	3.4	A	3.5	A			380	20	34								190	39	65
	SB														0.0	A															
IBM at Internal Roadway (Roundabout) (HCS)	EB		145	30		175					4.4	A			4.4	A	5.7	A						1822		20					
	WB			25	34	59					4.2	A			4.2	A								467		20					
	NB			115	2	117					4.5	A			4.5	A								421		20					
	SB		48	55	386	489					6.7	A			6.7	A								209		55					
Marketplace Dr at E RTC Access	EB		37		42	79			6.1	A	0.2	A	2.5	A	4.1	A	1.6	A	940	20	38								110	20	35
	WB														0.0	A															
	NB		67	71		138			2.3	A	0.7	A			1.5	A			130	20	35										
	SB			86	65	151					0.4	A	0.3	A	0.4	A													170		20
Watson Ave at Internal Roadway	EB														0.0	A	2.0	A													
	WB		117		2	119			7.7	A			5.4	A	7.7	A								2577	42	70					
	NB			237	94	331					1.0	A	0.7	A	0.9	A															
	SB		8	92		100			3.6	A	0.2	A			0.4	A								400	20	20					
Internal Roadway at Internal Roadway	EB		8	27	25	60			2.2	A	0.3	A	0.2	A	0.5	A	2.3	A						558		20					
	WB		10	13	8	31			1.9	A	0.1	A	0.2	A	0.2	A								781		20					
	NB		71	5	17	93			5.7	A	2.5	A	3.6	A	4.9	A								2577	35	58					
	SB		25	19	25	69			4.8	A	6.3	A	2.8	A	4.5	A								373	27	44					
Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A	9.0	A													
	WB		75		126	201			20.3	C	0.1	A	5.0	A	10.0	B			150	37	76								545	30	59
	NB			606	162	768					12.2	B	4.3	A	10.6	B								977	99	170			305	33	67
	SB		208	400		608			11.5	B	4.2	A			6.6	A			260	60	111			1817	38	82					
Marketplace Dr at SE MF Access	EB		31		129	160			5.9	A			3.1	A	3.6	A	1.8	A						400	34	60					
	WB														0.0	A															
	NB		89	107		196			1.7	A	0.4	A			1.0	A			130	20	32										
	SB			81	47	128					1.1	A	0.7	A	0.9	A													170		20
19th St at W Frontage Rd (Signal)	EB		31	561	11	603			17.6	B	9.3	A	4.9	A	9.6	A	15.3	B	100	20	48		2 %	1116	82	176	2 %				
	WB		148	854	157	1,159			14.4	B	10.7	B	9.0	A	11.0	B			110	49	**107**		3 %	265	113	**230**	3 %				
	NB		8	14	74	96			51.5	D	54.6	D	8.0	A	17.4	B			225	20	23			888	20	49			445	34	62
	SB		216	31	34	281			50.0	D	37.5	D	14.1	B	44.2	D			280	108	196			300	23	70					
19th St at US 52 Interchange (Signal)	EB		112	328	411	851			45.6	D	24.1	C			29.4	C	31.0	C	175	58	99			276	86	154	1 %				
	WB		344	374	211	929			40.1	D	19.4	B			29.2	C			555	149	237			808	104	174					
	NB		526		457	983			31.5	C					31.5	C			745	175	261										
	SB		388		259	647			35.6	D					35.6	D			865	194	324										

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

Table B11b
Rochester Tech Campus
2045 Build Conditions - Mitigated
PM Peak Hour

	Intersection	Approach	Demand Volumes					Delay (s/veh)								LOS By Approach		LOS By Intersection		Vehicle Queing Information (feet)													
																				Left Turn Lane					Through Lane (s)						Right Turn Lane			
			U	L	T	R	Total	U	LOS	L	LOS	T	LOS	R	LOS	Delay (S/Veh)	LOS	Delay (S/Veh)	LOS	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Thru[2] ⟶	% Block Left[2] ⟵	Link Length (feet)	Avg. Queue (feet)[1]	95th% Queue (feet)[1]	% Block Right[2] ⟶	% Block Thru[2] ⟵	Storage (feet)[3]	Avg. Queue (feet)[1]	95th% Queue (feet)[1]
PM Peak Hour	W Circle Dr at 41st St (Signal)	EB		5	526	157	688			51.3	D	46.5	D	2.9	A	37.1	D			305	20	20		1 %	944	202	288	8 %		170	20	51
		WB		196	670	39	905			58.5	E	32.3	C	26.6	C	37.9	D	31.5	C	290	91	151			1236	181	264					
		NB		401	565	179	1,145			47.2	D	8.7	A	3.8	A	21.3	C			330	126	197			1197	52	98			325	20	46
		SB		50	474	59	583			37.0	D	38.2	D	10.8	B	35.2	D			270	36	76			922	163	233			270	24	59
	41st St at NW MF Access	EB			587	11	598					3.3	A	3.1	A	3.3	A																
		WB		5	746		751			4.9	A	1.2	A			1.2	A	2.3	A						721	20	24					
		NB		5		8	13			12.7	B			4.3	A	7.9	A								501	20	35					
		SB														0.0	A																
	41st St at 31st Ave/RTC West (Signal)	EB		63	435	52	550			15.0	B	13.5	B	4.2	A	12.8	B			200	33	68			1212	91	173	2 %		135	22	51
		WB		65	427	62	554			15.8	B	16.5	B	9.4	A	15.6	B	14.5	B	165	34	68		2 %	1336	107	181	2 %				
		NB		93	65	74	232			15.7	B	16.2	B	11.2	B	14.7	B			130	35	72			597	52	105					
		SB		130	49	125	304			17.9	B	23.9	C	9.8	A	15.7	B			150	54	99			906	66	123					
	41st St at W Frontage Rd/Marketplace Dr	EB		70	550	98	718			24.8	C	42.0	D	16.5	B	36.9	D			160	45	128		14 %	1336	187	355	33 %		95	67	166
		WB		249	231	237	717			25.2	C	18.4	B	5.7	A	16.7	B	27.9	C	420	101	180			420	57	108			160	53	94
		NB		120	167	451	738			47.5	D	48.1	D	1.8	A	19.8	B			310	89	162		5 %	272	110	190	5 %		240	20	67
		SB		408	163	50	621			42.9	D	41.0	D	27.5	C	41.1	D			270	153	262		5 %	140	114	206					
	41st St at SB US 52 Ramp (Signal)	EB			887	522	1,409					34.3	C	13.2	B	26.6	C								450	266	432			440	143	356
		WB		340	503		843			17.7	B	5.8	A			10.4	B	22.4	C	220	109	215			576	46	109					
		NB														0.0	A																
		SB		72	252	208	532			46.7	D	44.3	D	8.7	A	30.9	C			290	48	105			951	94	160			290	51	87
	41st St at NB US 52 Ramp/E Frontage Rd	EB		284	675		959			22.1	C	12.4	B			15.3	B			250	136	249		1 %	576	173	309					
		WB			723	112	835					32.8	C	23.1	C	31.4	C	25.1	C		345	220	351										
		NB		120	15	230	365			59.1	E	40.9	D	21.1	C	34.6	C			625	37	82			625	49	108			315	119	224
		SB														0.0	A																
	41st St at E Frontage Rd (Signal)	EB		267	535	103	905			10.7	B	3.8	A	2.0	A	5.6	A			320	73	144			318	34	104					
		WB		36	406	35	477			13.9	B	10.6	B	2.1	A	10.3	B	13.6	B	345	20	45		6 %	457	111	219	6 %		125	20	41
		NB		127	54	53	234			50.5	D	50.9	D	24.9	C	44.7	D			225	84	144			830	81	159					
		SB		79	61	302	442			45.9	D	53.8	D	4.4	A	18.1	B			175	58	111			809	50	100			180	41	130
	Marketplace Dr at SE Target Access	EB		52		61	113			42.2	E			7.2	A	23.2	C			410	41	100								60	32	63
		WB														0.0	A	3.5	A														
		NB		269	569		838			5.5	A	0.8	A			2.3	A			200	50	90											
		SB			374	37	411					1.0	A	0.8	A	1.0	A								510	20	20					
	Marketplace Dr at Slip Ramp from 37th St	EB				8	8							4.5	A	4.5	A													110	20	29
		WB		22		406	428			12.1	B	1.1	A	12.4	B	12.4	B	4.9	A	60	20	65							23 %	390	95	174
		NB			377		377					1.5	A			1.5	A																
		SB			377	5	382					0.6	A	0.3	A	0.6	A																
	W Circle Dr at Valleyhigh Dr (Signal)	EB		107	365	514	986			69.8	E	51.4	D	4.0	A	28.7	C			290	62	122			1110	137	208			270		20
		WB		134	563	189	886			57.7	E	47.0	D	3.0	A	39.5	D	32.3	C	295	67	117			1321	186	270	1 %				
		NB		530	849	111	1,490			52.3	D	26.4	C	6.3	A	34.2	C			350	227	328			1129	198	289	1 %		250	28	58
		SB		103	673	51	827			67.6	E	20.6	C	3.0	A	25.3	C			310	51	93			670	117	200					
	Valleyhigh Dr at 37th St (Roundabout) (HCS)	EB	2	210		482	692			4.6	A			7.3	A	6.5	A			525		20								525		60
		WB														0.0	A	7.8	A														
		NB		618	75		693			11.1	B	3.8	A			10.3	B								173		115					
		SB	11		90	224	314					13.8	B			13.8	B								1030		80					
	37th St at RTC West (Signal)	EB		65	218	5	288			4.7	A	1.6	A	1.4	A	2.3	A			65	20	39											
		WB		16	265	195	476			4.0	A	1.0	A	2.7	A	1.8	A	3.3	A	80	20	20											
		NB		18	7	50	75			9.3	A	11.0	B	4.0	A	5.8	A								778	30	54					
		SB		121	3	33	157			10.0	B	2.2	A	3.8	A	8.2	A			130	45	76			727	22	46					
	37th St at RTC East (Signal)	EB			556	39	595					34.2	C	24.5	C	33.6	C								800	159	236					
		WB		394	455		849			14.4	B	2.8	A			7.9	A	15.6	B	340	82	136			475	23	67					
		NB		33		625	658			42.7	D			7.4	A	9.4	A			680	67	224								580	112	274
		SB														0.0	A																
	37th St at SB US 52 Ramp (Signal)	EB			718	463	1,181					13.8	B	0.3	A	8.5	A								650	82	113			200		20
		WB		531	1113		1,644			24.1	C	8.1	A			13.3	B	14.3	B	265	148	225			610	104	203					
		NB														0.0	A																
		SB		117	5	164	286			77.7	E	26.2	C	15.9	B	40.9	D			970	108	195								635	48	85
	37th St at NB US 52 Ramp (Signal)	EB		364	471		835			36.8	D	5.4	A			18.7	B			175	95	161	1 %		610	21	69					
		WB			1157	103	1,260					30.1	C	8.4	A	28.2	C	28.8	C			405	268	399	14 %		185	39	159					
		NB		487	431	543	1,461			53.0	D	45.0	D	13.0	B	35.3	D			820	191	292			1435	167	234			820	92	151
		SB														0.0	A																
	37th St at 21st Ave/E Frontage Rd (Signa	EB		26	897	91	1,014			21.3	C	13.0	B	2.9	A	12.3	B			200	20	34		2 %	378	127	239	2 %		200	20	22
		WB		81	1040	44	1,165			17.4	B	12.3	B	2.3	A	12.3	B	16.8	B	195	37	97		3 %	960	152	256			300	20	21
		NB		146	41	92	279			60.6	E	40.9	D	16.9	B	43.6	D			200	107	184		1 %	888	76	189					
		SB		49	56	74	179			46.0	D	29.7	C	15.2	B	28.6	C								686	76	147	3 %		130	37	81
	Watson Ave at RTC South	EB			38	20	58					6.1	A	2.7	A	4.8	A								983	22	46			160	20	40
		WB		226	12		238			6.5	A	7.8	A			6.6	A	5.2	A						1822	53	77					
		NB		8		139	147			4.2	A			3.0	A	3.1	A			380	20	22								190	30	53
		SB														0.0	A																
	IBM at Internal Roadway (Roundabout) (HCS)	EB		307	74		381					7.9	A			7.9	A								1822		55					
		WB		2	72	114	188					6.7	A			6.7	A	6.8	A						467		30					
		NB			97	1	98					6.1	A			6.1	A								421		20					
		SB		109	130	139	378					6.0	A			6.0	A								209		40					
	Marketplace Dr at E RTC Access	EB		158		198	356			18.8	C			5.5	A	11.2	B			940	55	114								110	38	84
		WB														0.0	A	5.0	A														
		NB		174	194		368			5.4	A	1.8	A			3.5	A			130	38	68											
		SB			244	156	400					1.2	A	0.9	A	1.1	A								347		20			170	20	20
	Watson Ave at Internal Roadway	EB														0.0	A																
		WB		118		6	124			8.7	A			5.8	A	8.6	A	2.2	A						2577	45	74					
		NB			141	136	277					1.2	A	0.7	A	1.0	A																
		SB		2	239		241			3.3	A	0.3	A			0.3	A								400	20	20					
	Internal Roadway at Internal Roadway	EB		21	41	66	128			2.3	A	1.1	A	0.5	A	1.0	A								558	20	20					
		WB		37	46	21	104			2.6	A	0.3	A	0.4	A	0.6	A	1.6	A						781	20	26					
		NB		41	17	34	92			6.5	A	2.3	A	3.8	A	3.9	A								2577	35	56					
		SB		12	8	14	34			5.1	A	6.8	A	2.7	A	4.4	A								373	20	39					
	Valleyhigh Dr at Watson Ave (Signal)	EB														0.0	A																
		WB		148		230	378			18.2	B	0.3	A	5.7	A	10.1	B	10.1	B	150	58	107								545	46	84
		NB			590	101	691					14.1	B	3.7	A	12.6	B								977	105	167			305	26	51
		SB		173	604		777			12.4	B	6.6	A			7.8	A			260	56	97			1817	60	104					
	Marketplace Dr at SE MF Access	EB		98		194	292			22.3	C			14.3	B	17.1	C								321	87	162					
		WB														0.0	A	6.0	A														
		NB		206	270		476			4.6	A	1.3	A			2.8	A			130	40	73											
		SB			329	113	442					2.4	A	1.7	A	2.2	A								1854		20			170	20	20
	19th St at W Frontage Rd (Signal)	EB		79	813	11	903			26.7	C	19.3	B	18.7	B	19.9	B			100	52	120		11 %	1116	186	306	11 %				
		WB		112	753	307	1,172			21.8	C	20.3	C	19.3	B	20.2	C	24.4	C	110	64	144		16 %	265	215	345	16 %				
		NB		20	50	201	271			47.3	D	46.7	D	21.3	C	27.8	C			225	20	47			888	40	87			445	80	144
		SB		352	48	101	501			48.5	D	32.6	C	14.8	B	40.4	D			280	165	272			300	52	138					
	19th St at US 52 Interchange (Signal)	EB		256	414	696	1,366			42.0	D	19.8	B			28.2	C			175	100	151			276	108	205	1 %				
		WB		343	353	268	964			43.4	D	18.6	B			31.0	C	33.1	C	555	158	231			808	83	152					
		NB		575		417	992			41.1	D					41.1	D			745	230	327											
		SB		217		244	461			32.5	C					32.5	C			865	119	196											

NOTES
1. If the reported queue is greater than zero (0), but less than 20 ft, a minimum of 20 ft is reported.
2. Block Percentage is proportion of analysis time (1 hour) the storage lane or through lane is blocked or blocking.
3. Multiple storage lanes of different length are averaged together to show the "Effective Storage Length" per lane.

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2028
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	4	186		378					0	255	73		5		71	188
Percent Heavy Vehicles, %	2	2		2					2	2	2		2		2	2
Flow Rate (v_{PCE}), pc/h	5	211		428					0	289	83		6		80	213
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		216	428				289	83			299	
Entry Volume, veh/h		212	420				283	81			293	
Circulating Flow (v_c), pc/h	86			594			222			294		
Exiting Flow (v_{ex}), pc/h	0			507			300			80		
Capacity (c_{pce}), pc/h		1264	1272				1160	1160			1022	
Capacity (c), veh/h		1239	1247				1138	1138			1002	
v/c Ratio (x)		0.17	0.34				0.25	0.07			0.29	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.4	6.0				5.5	3.8			6.5	
Lane LOS		A	A				A	A			A	
95% Queue Length, Q_{95} (veh)		0.6	1.5				1.0	0.2			1.2	
95% Queue Length, Q_{95} (ft)		15.2	38.1				25.4	5.1			30.5	
Approach Delay, s/veh | LOS	5.5	A					5.1	A		6.5	A	
Intersection Delay, s/veh | LOS	5.6						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2028
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	2	210		340					0	445	75		5		90	226
Percent Heavy Vehicles, %	1	1		1					1	1	1		1		1	1
Flow Rate (v_{PCE}), pc/h	2	236		382					0	499	84		6		101	254
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		238	382				499	84			361	
Entry Volume, veh/h		236	378				494	83			357	
Circulating Flow (v_c), pc/h	107			827			244			501		
Exiting Flow (v_{ex}), pc/h	0			755			326			101		
Capacity (c_{pce}), pc/h		1237	1245				1137	1137			828	
Capacity (c), veh/h		1225	1233				1126	1126			820	
v/c Ratio (x)		0.19	0.31				0.44	0.07			0.44	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.6	5.7				7.9	3.8			9.9	
Lane LOS		A	A				A	A			A	
95% Queue Length, Q_{95} (veh)		0.7	1.3				2.3	0.2			2.2	
95% Queue Length, Q_{95} (ft)		17.6	32.8				58.0	5.0			55.4	
Approach Delay, s/veh | LOS	5.3	A					7.3	A		9.9	A	
Intersection Delay, s/veh | LOS	7.1						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2029
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	4	186		431					0	302	73		5		71	188
Percent Heavy Vehicles, %	2	2		2					2	2	2		2		2	2
Flow Rate (v_{PCE}), pc/h	5	211		488					0	342	83		6		80	213
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		216	488				342	83			299	
Entry Volume, veh/h		212	478				335	81			293	
Circulating Flow (v_c), pc/h	86			647			222			347		
Exiting Flow (v_{ex}), pc/h	0			560			300			80		
Capacity (c_{pce}), pc/h		1264	1272				1160	1160			969	
Capacity (c), veh/h		1239	1247				1138	1138			950	
v/c Ratio (x)		0.17	0.38				0.29	0.07			0.31	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.4	6.6				6.0	3.8			7.0	
Lane LOS		A	A				A	A			A	
95% Queue Length, Q_{95} (veh)		0.6	1.8				1.2	0.2			1.3	
95% Queue Length, Q_{95} (ft)		15.2	45.7				30.5	5.1			33.0	
Approach Delay, s/veh | LOS	5.9	A					5.5	A		7.0	A	
Intersection Delay, s/veh | LOS	6.0						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2029
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	2	210		395					0	503	75		5		90	224
Percent Heavy Vehicles, %	1	1		1					1	1	1		1		1	1
Flow Rate (v_{PCE}), pc/h	2	236		443					0	564	84		6		101	251
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		238	443				564	84			358	
Entry Volume, veh/h		236	439				558	83			354	
Circulating Flow (v_c), pc/h	107			892			244			566		
Exiting Flow (v_{ex}), pc/h	0			817			326			101		
Capacity (c_{pce}), pc/h		1237	1245				1137	1137			775	
Capacity (c), veh/h		1225	1233				1126	1126			767	
v/c Ratio (x)		0.19	0.36				0.50	0.07			0.46	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.6	6.3				8.8	3.8			11.0	
Lane LOS		A	A				A	A			B	
95% Queue Length, Q_{95} (veh)		0.7	1.6				2.8	0.2			2.5	
95% Queue Length, Q_{95} (ft)		17.6	40.3				70.6	5.0			63.0	
Approach Delay, s/veh | LOS	5.7	A					8.1	A		11.0	B	
Intersection Delay, s/veh | LOS	7.8						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2045
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	4	186		514					0	372	73		5		71	188
Percent Heavy Vehicles, %	2	2		2					2	2	2		2		2	2
Flow Rate (v_{PCE}), pc/h	5	211		583					0	422	83		6		80	213
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		216	583				422	83			299	
Entry Volume, veh/h		212	572				414	81			293	
Circulating Flow (v_c), pc/h	86			727			222			427		
Exiting Flow (v_{ex}), pc/h	0			640			300			80		
Capacity (c_{pce}), pc/h		1264	1272				1160	1160			893	
Capacity (c), veh/h		1239	1247				1138	1138			875	
v/c Ratio (x)		0.17	0.46				0.36	0.07			0.33	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.4	7.6				6.8	3.8			7.8	
Lane LOS		A	A				A	A			A	
95% Queue Length, Q_{95} (veh)		0.6	2.5				1.7	0.2			1.5	
95% Queue Length, Q_{95} (ft)		15.2	63.5				43.2	5.1			38.1	
Approach Delay, s/veh | LOS	6.7	A					6.3	A		7.8	A	
Intersection Delay, s/veh | LOS	6.8						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2045
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	2	210		482					0	618	75		5		90	224
Percent Heavy Vehicles, %	1	1		1					1	1	1		1		1	1
Flow Rate (v_{PCE}), pc/h	2	236		541					0	694	84		6		101	251
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		238	541				694	84			358	
Entry Volume, veh/h		236	536				687	83			354	
Circulating Flow (v_c), pc/h	107			1022			244			696		
Exiting Flow (v_{ex}), pc/h	0			947			326			101		
Capacity (c_{pce}), pc/h		1237	1245				1137	1137			679	
Capacity (c), veh/h		1225	1233				1126	1126			672	
v/c Ratio (x)		0.19	0.43				0.61	0.07			0.53	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.6	7.3				11.1	3.8			13.8	
Lane LOS		A	A				B	A			B	
95% Queue Length, Q_{95} (veh)		0.7	2.2				4.4	0.2			3.1	
95% Queue Length, Q_{95} (ft)		17.6	55.4				110.9	5.0			78.1	
Approach Delay, s/veh | LOS	6.5	A					10.3	B		13.8	B	
Intersection Delay, s/veh | LOS	9.4						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2028
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	RTC East at RTC South
E/W Street Name	RTC South
N/S Street Name	RTC East
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	95	16	0	0	0	16	9	0	0	81	0	0	13	43	325
Percent Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Flow Rate (v_{PCE}), pc/h	0	108	18	0	0	0	18	10	0	0	92	0	0	15	49	368
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		126			28			92			432	
Entry Volume, veh/h		124			27			90			424	
Circulating Flow (v_c), pc/h	64			200			141			18		
Exiting Flow (v_{ex}), pc/h	33			386			210			49		
Capacity (c_{pce}), pc/h		1293			1125			1195			1355	
Capacity (c), veh/h		1267			1103			1172			1328	
v/c Ratio (x)		0.10			0.02			0.08			0.32	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		3.6			3.5			3.7			5.6	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		0.3			0.1			0.2			1.4	
95% Queue Length, Q_{95} (ft)		7.6			2.5			5.1			35.6	
Approach Delay, s/veh | LOS	3.6	A		3.5	A		3.7	A		5.6	A	
Intersection Delay, s/veh | LOS	4.9						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2028
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	RTC East at RTC South
E/W Street Name	RTC South
N/S Street Name	RTC East
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	260	42	0	0	0	41	43	0	0	79	0	0	39	104	96
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Flow Rate (v_{PCE}), pc/h	0	292	47	0	0	0	46	48	0	0	89	0	0	44	117	108
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		339			94			89			269	
Entry Volume, veh/h		336			93			88			266	
Circulating Flow (v_c), pc/h	161			381			383			46		
Exiting Flow (v_{ex}), pc/h	91			154			429			117		
Capacity (c_{pce}), pc/h		1171			936			934			1317	
Capacity (c), veh/h		1159			926			924			1304	
v/c Ratio (x)		0.29			0.10			0.10			0.20	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.8			4.8			4.8			4.5	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		1.2			0.3			0.3			0.8	
95% Queue Length, Q_{95} (ft)		30.2			7.6			7.6			20.2	
Approach Delay, s/veh | LOS	5.8	A		4.8	A		4.8	A		4.5	A	
Intersection Delay, s/veh | LOS	5.1						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2029
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	RTC East at RTC South
E/W Street Name	RTC South
N/S Street Name	RTC East
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	145	30	0	0	0	25	34	0	0	115	2	0	48	55	386
Percent Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Flow Rate (v_{PCE}), pc/h	0	164	34	0	0	0	28	39	0	0	130	2	0	54	62	437
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		198			67			132			553	
Entry Volume, veh/h		194			66			129			542	
Circulating Flow (v_c), pc/h	116			294			252			28		
Exiting Flow (v_{ex}), pc/h	90			465			333			62		
Capacity (c_{pce}), pc/h		1226			1022			1067			1341	
Capacity (c), veh/h		1202			1002			1046			1315	
v/c Ratio (x)		0.16			0.07			0.12			0.41	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.4			4.2			4.5			6.7	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		0.6			0.2			0.4			2.1	
95% Queue Length, Q_{95} (ft)		15.2			5.1			10.2			53.3	
Approach Delay, s/veh | LOS	4.4	A		4.2	A		4.5	A		6.7	A	
Intersection Delay, s/veh | LOS	5.7						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2029
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	37th Ave at Valleyhigh Dr
E/W Street Name	Valleyhigh Dr
N/S Street Name	37th Ave/Valleyhigh Dr
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lane Assignment			L						L		T				TR	
Volume (V), veh/h	2	210		395					0	503	75		5		90	224
Percent Heavy Vehicles, %	1	1		1					1	1	1		1		1	1
Flow Rate (v_{PCE}), pc/h	2	236		443					0	564	84		6		101	251
Right-Turn Bypass	Yielding				None				None				None			
Conflicting Lanes	1								1				1			
Pedestrians Crossing, p/h	0								0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763	4.9763				4.5436	4.5436			4.9763	
Follow-Up Headway, s		2.6087	2.6087				2.5352	2.5352			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		238	443				564	84			358	
Entry Volume, veh/h		236	439				558	83			354	
Circulating Flow (v_c), pc/h	107			892			244			566		
Exiting Flow (v_{ex}), pc/h	0			817			326			101		
Capacity (c_{pce}), pc/h		1237	1245				1137	1137			775	
Capacity (c), veh/h		1225	1233				1126	1126			767	
v/c Ratio (x)		0.19	0.36				0.50	0.07			0.46	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.6	6.3				8.8	3.8			11.0	
Lane LOS		A	A				A	A			B	
95% Queue Length, Q_{95} (veh)		0.7	1.6				2.8	0.2			2.5	
95% Queue Length, Q_{95} (ft)		17.6	40.3				70.6	5.0			63.0	
Approach Delay, s/veh | LOS	5.7	A					8.1	A		11.0	B	
Intersection Delay, s/veh | LOS	7.8						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2045
Time Analyzed	AM Peak Hour 7:30-8:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	RTC East at RTC South
E/W Street Name	RTC South
N/S Street Name	RTC East
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	145	30	0	0	0	25	34	0	0	115	2	0	48	55	386
Percent Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Flow Rate (v_{PCE}), pc/h	0	164	34	0	0	0	28	39	0	0	130	2	0	54	62	437
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		198			67			132			553	
Entry Volume, veh/h		194			66			129			542	
Circulating Flow (v_c), pc/h	116			294			252			28		
Exiting Flow (v_{ex}), pc/h	90			465			333			62		
Capacity (c_{pce}), pc/h		1226			1022			1067			1341	
Capacity (c), veh/h		1202			1002			1046			1315	
v/c Ratio (x)		0.16			0.07			0.12			0.41	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.4			4.2			4.5			6.7	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		0.6			0.2			0.4			2.1	
95% Queue Length, Q_{95} (ft)		15.2			5.1			10.2			53.3	
Approach Delay, s/veh | LOS	4.4	A		4.2	A		4.5	A		6.7	A	
Intersection Delay, s/veh | LOS	5.7						A					

HCS Roundabouts Report

General Information

Analyst	Leo Johnson
Agency or Co.	
Date Performed	9/11/2024
Analysis Year	2045
Time Analyzed	PM Peak Hour 4:30-5:30 PM
Project Description	Build - Rochester Tech Campus



Site Information

Intersection	RTC East at RTC South
E/W Street Name	RTC South
N/S Street Name	RTC East
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.90
Jurisdiction	Rochester

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	307	74	0	0	2	72	114	0	0	97	1	0	109	130	139
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Flow Rate (v_{PCE}), pc/h	0	345	83	0	0	2	81	128	0	0	109	1	0	122	146	156
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		428			211			110			424	
Entry Volume, veh/h		424			209			109			420	
Circulating Flow (v_c), pc/h	270			454			550			83		
Exiting Flow (v_{ex}), pc/h	206			237			582			148		
Capacity (c_{pce}), pc/h		1048			868			787			1268	
Capacity (c), veh/h		1037			860			780			1255	
v/c Ratio (x)		0.41			0.24			0.14			0.33	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.9			6.7			6.1			6.0	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		2.0			1.0			0.5			1.5	
95% Queue Length, Q_{95} (ft)		50.4			25.2			12.6			37.8	
Approach Delay, s/veh | LOS	7.9	A		6.7	A		6.1	A		6.0	A	
Intersection Delay, s/veh | LOS	6.8						A					

Appendix C

Warrant Analysis

37th St at Valleyhigh Dr - Build Phase 2 2028
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at Valleyhigh Dr
COUNTY: Olmsted
REF. POINT: 0
DATE: 4/5/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
45	Major App1:	Valleyhigh Dr	NB	2	4894
45	Major App3:	Valleyhigh Dr	EB	2	6672
30	Minor App2:	37th St	SB	1	2897
30	Minor App4:	-	WB	1	0

0.70 SPEED FACTOR USED? **Yes**

Minimum Volume Requirement
210 **140**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	203	383	157	0	586	157	**YES / YES**
7:00 - 8:00	358	604	242	0	962	242	**YES / YES**
8:00 - 9:00	325	523	211	0	848	211	**YES / YES**
9:00 - 10:00	289	430	191	0	719	191	**YES / YES**
10:00 - 11:00	296	400	178	0	696	178	**YES / YES**
11:00 - 12:00	366	515	186	0	881	186	**YES / YES**
12:00 - 13:00	446	578	221	0	1024	221	**YES / YES**
13:00 - 14:00	405	525	199	0	930	199	**YES / YES**
14:00 - 15:00	431	529	209	0	960	209	**YES / YES**
15:00 - 16:00	470	609	291	0	1079	291	**YES / YES**
16:00 - 17:00	539	590	297	0	1129	297	**YES / YES**
17:00 - 18:00	508	578	304	0	1086	304	**YES / YES**
18:00 - 19:00	258	408	211	0	666	211	**YES / YES**
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**4894**	**6672**	**2897**	**0**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	13	8

All-way Stop Warrant: **Satisfied**

REMARKS:

37th St at Valleyhigh Dr - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at Valleyhigh Dr
COUNTY: Olmsted
REF. POINT: 0
DATE: 4/5/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
45	Major App1:	Valleyhigh Dr	NB	2	4894
45	Major App3:	Valleyhigh Dr	EB	2	6672
30	Minor App2:	37th St	SB	1	785
30	Minor App4:	-	WB	1	0

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	420	630	504
Minor Approach	105	53	84

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	203	383	41	0	586	41	YES / NO	NO / NO	YES / NO
7:00 - 8:00	358	604	66	0	962	66	YES / NO	**YES / YES**	YES / NO
8:00 - 9:00	325	523	57	0	848	57	YES / NO	**YES / YES**	YES / NO
9:00 - 10:00	289	430	51	0	719	51	YES / NO	YES / NO	YES / NO
10:00 - 11:00	296	400	48	0	696	48	YES / NO	YES / NO	YES / NO
11:00 - 12:00	366	515	50	0	881	50	YES / NO	YES / NO	YES / NO
12:00 - 13:00	446	578	60	0	1024	60	YES / NO	**YES / YES**	YES / NO
13:00 - 14:00	405	525	54	0	930	54	YES / NO	**YES / YES**	YES / NO
14:00 - 15:00	431	529	57	0	960	57	YES / NO	**YES / YES**	YES / NO
15:00 - 16:00	470	609	79	0	1079	79	YES / NO	**YES / YES**	YES / NO
16:00 - 17:00	539	590	83	0	1129	83	YES / NO	**YES / YES**	YES / NO
17:00 - 18:00	508	578	84	0	1086	84	YES / NO	**YES / YES**	**YES / YES**
18:00 - 19:00	258	408	55	0	666	55	YES / NO	**YES / YES**	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**4894**	**6672**	**785**	**0**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	**9**	8	**Satisfied**
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	**9**	8	**Satisfied**
1A & 1B	Combination of Warrants	1	8	Not satisfied
Warrant 2	**Four Hour Volumes**	**4**	4	**Satisfied**
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	5	8	Not satisfied

COMMENTS:

37th St at Valleyhigh Dr - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at Valleyhigh Dr
COUNTY: Olmsted
REF. POINT: 0
DATE: 4/5/2025

OPERATOR: LJ

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**

85th% Speed	Approach Description		Lanes	Approach
45	Major App1:	Valleyhigh Dr	2	4894
45	Major App3:	Valleyhigh Dr	2	6672
30	Minor App2:	37th St	1	785
30	Minor App4:	-	1	0

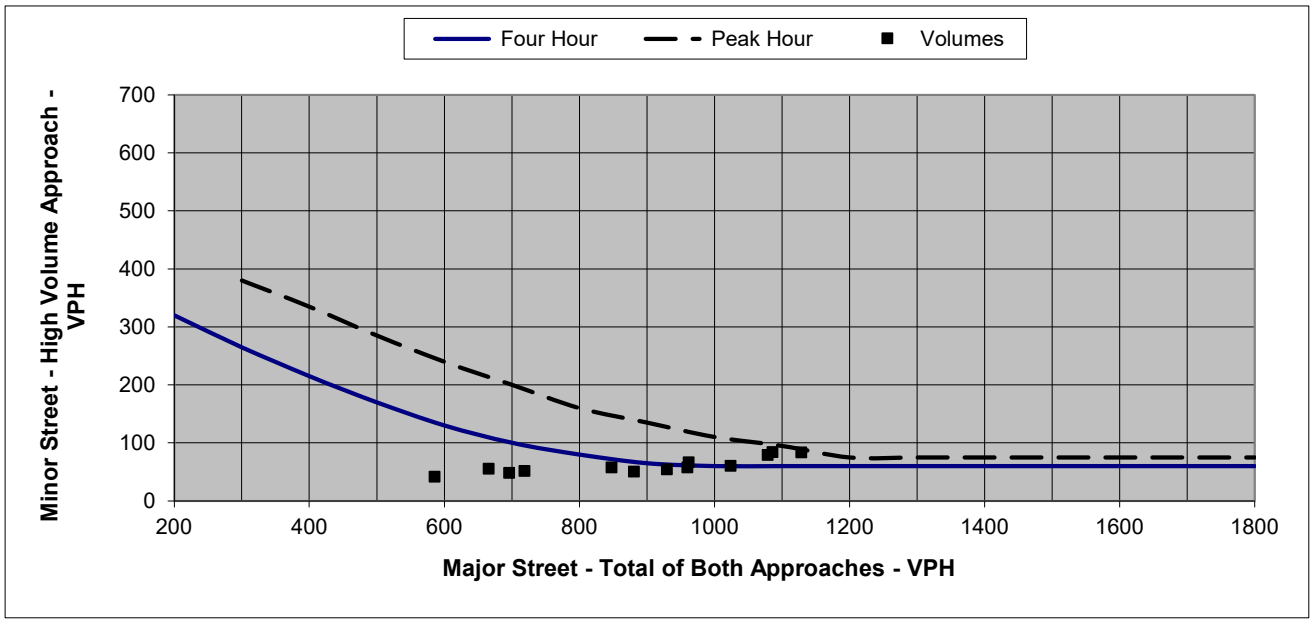


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200	320	
300	265	380
400	215	335
500	170	285
600	130	240
700	100	200
800	80	160
900	65	135
1000	60	110
1100	60	95
1200	60	75
1300	60	75
1400	60	75
1500	60	75
1600	60	75
1700	60	75
1800	60	75

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	586	41	NO	NO
7:00 - 8:00	962	66	**YES**	NO
8:00 - 9:00	848	57	NO	NO
9:00 - 10:00	719	51	NO	NO
10:00 - 11:00	696	48	NO	NO
11:00 - 12:00	881	50	NO	NO
12:00 - 13:00	1024	60	NO	NO
13:00 - 14:00	930	54	NO	NO
14:00 - 15:00	960	57	NO	NO
15:00 - 16:00	1079	79	**YES**	NO
16:00 - 17:00	1129	83	**YES**	NO
17:00 - 18:00	1086	84	**YES**	NO
18:00 - 19:00	666	55	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at Valleyhigh Dr - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at Valleyhigh Dr
COUNTY: Olmsted
REF. POINT: 0
DATE: 4/5/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
45	Major App1:	Valleyhigh Dr	NB	1	5618
30	Major App3:	37th St	SB	1	2906
45	Minor App2:	Valleyhigh Dr	EB	2	2199
30	Minor App4:	-	WB	1	0

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	350	525	420
Minor Approach	140	70	112

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	235	157	150	0	392	150	**YES / YES**	NO / YES	NO / YES
7:00 - 8:00	410	243	194	0	653	194	**YES / YES**	**YES / YES**	**YES / YES**
8:00 - 9:00	375	212	172	0	587	172	**YES / YES**	**YES / YES**	**YES / YES**
9:00 - 10:00	334	191	144	0	525	144	**YES / YES**	**YES / YES**	**YES / YES**
10:00 - 11:00	349	178	130	0	527	130	YES / NO	**YES / YES**	**YES / YES**
11:00 - 12:00	429	186	150	0	615	150	**YES / YES**	**YES / YES**	**YES / YES**
12:00 - 13:00	512	221	174	0	733	174	**YES / YES**	**YES / YES**	**YES / YES**
13:00 - 14:00	465	199	154	0	664	154	**YES / YES**	**YES / YES**	**YES / YES**
14:00 - 15:00	486	209	165	0	695	165	**YES / YES**	**YES / YES**	**YES / YES**
15:00 - 16:00	528	291	200	0	819	200	**YES / YES**	**YES / YES**	**YES / YES**
16:00 - 17:00	605	300	203	0	905	203	**YES / YES**	**YES / YES**	**YES / YES**
17:00 - 18:00	579	308	203	0	887	203	**YES / YES**	**YES / YES**	**YES / YES**
18:00 - 19:00	311	211	160	0	522	160	**YES / YES**	NO / YES	**YES / YES**
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**5618**	**2906**	**2199**	**0**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	**12**	8	**Satisfied**
Warrant 1A	Minimum Vehicular Volume	**12**	8	**Satisfied**
Warrant 1B	Interruption of Continuous Flow	**11**	8	**Satisfied**
1A & 1B	Combination of Warrants	**12**	8	**Satisfied**
Warrant 2	**Four Hour Volumes**	**9**	4	**Satisfied**
Warrant 3	**Peak Hour Volumes**	**3**	1	**Satisfied**
Warrant 7	**Crash Experience**	**8**	8	Crashes Insufficient

COMMENTS:

37th St at Valleyhigh Dr - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at Valleyhigh Dr
COUNTY: Olmsted
REF. POINT: 0
DATE: 4/5/2025

OPERATOR: LJ

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**

85th% Speed	Approach Description		Lanes	Approach
45	Major App1:	Valleyhigh Dr	1	5618
30	Major App3:	37th St	1	2906
45	Minor App2:	Valleyhigh Dr	2	2199
30	Minor App4:	-	1	0

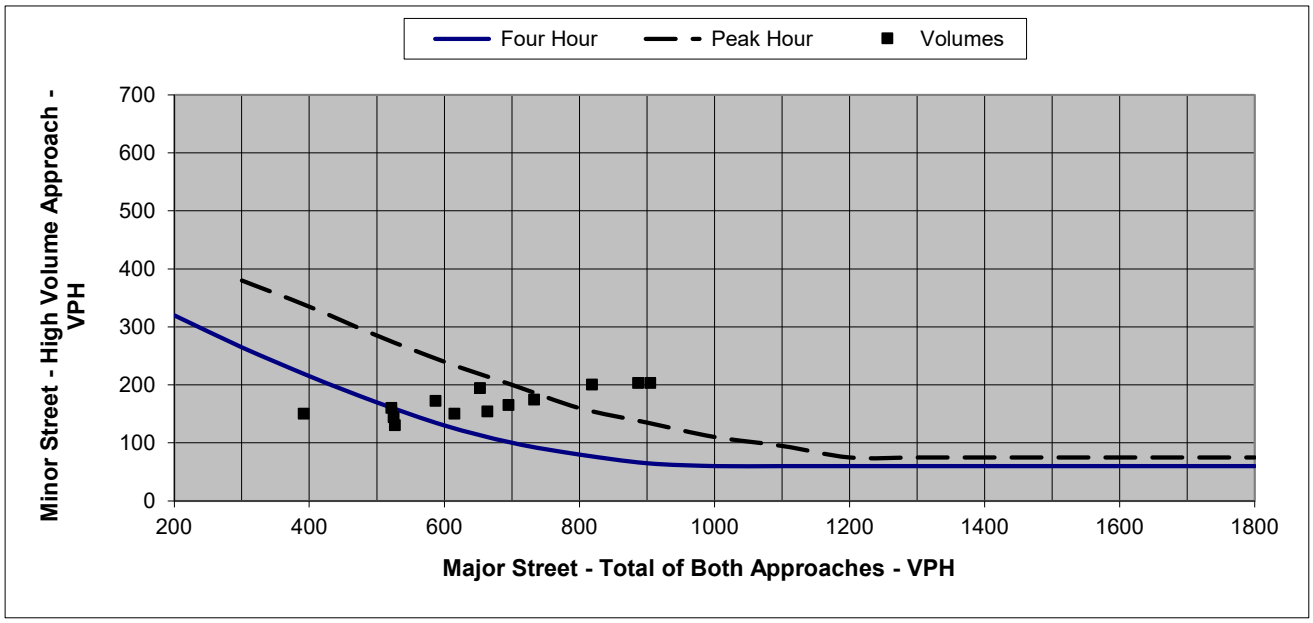


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200	320	
300	265	380
400	215	335
500	170	285
600	130	240
700	100	200
800	80	160
900	65	135
1000	60	110
1100	60	95
1200	60	75
1300	60	75
1400	60	75
1500	60	75
1600	60	75
1700	60	75
1800	60	75

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	392	150	NO	NO
7:00 - 8:00	653	194	**YES**	NO
8:00 - 9:00	587	172	**YES**	NO
9:00 - 10:00	525	144	NO	NO
10:00 - 11:00	527	130	NO	NO
11:00 - 12:00	615	150	**YES**	NO
12:00 - 13:00	733	174	**YES**	NO
13:00 - 14:00	664	154	**YES**	NO
14:00 - 15:00	695	165	**YES**	NO
15:00 - 16:00	819	200	**YES**	**YES**
16:00 - 17:00	905	203	**YES**	**YES**
17:00 - 18:00	887	203	**YES**	**YES**
18:00 - 19:00	522	160	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC West - Build Phase 1 2027 - No 37th St Connection
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	117
30	Major App3:	TH 371	WB	2	2286
30	Minor App2:	RTC W	NB	1	393
30	Minor App4:	RTCW	SB	1	1979

0.70 SPEED FACTOR USED? **No**

	Minimum Volume Requirement	
	300	**200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	1	77	11	174	78	185	NO / NO
7:00 - 8:00	10	161	20	309	171	329	NO / YES
8:00 - 9:00	8	150	21	256	158	277	NO / YES
9:00 - 10:00	5	122	23	113	127	136	NO / NO
10:00 - 11:00	7	115	25	97	122	122	NO / NO
11:00 - 12:00	12	155	31	119	167	150	NO / NO
12:00 - 13:00	12	201	35	160	213	195	NO / NO
13:00 - 14:00	8	168	27	133	176	160	NO / NO
14:00 - 15:00	7	158	26	114	165	140	NO / NO
15:00 - 16:00	9	221	46	131	230	177	NO / NO
16:00 - 17:00	17	303	54	137	320	191	YES / NO
17:00 - 18:00	18	302	56	142	320	198	YES / NO
18:00 - 19:00	3	153	18	94	156	112	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**117**	**2286**	**393**	**1979**			

	Met (Hr)	**Required (Hr)**
Hours met for warrant:	**0**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

37th St at RTC West - Build Phase 1 2027 - No 37th St Connection
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	117
30	Major App3:	TH 371	WB	2	2286
30	Minor App2:	RTC W	NB	1	118
30	Minor App4:	RTCW	SB	1	1958

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	1	77	4	173	78	173	NO / YES	NO / YES	NO / YES
7:00 - 8:00	10	161	6	305	171	305	NO / YES	NO / YES	NO / YES
8:00 - 9:00	8	150	6	252	158	252	NO / YES	NO / YES	NO / YES
9:00 - 10:00	5	122	8	112	127	112	NO / NO	NO / YES	NO / NO
10:00 - 11:00	7	115	8	96	122	96	NO / NO	NO / YES	NO / NO
11:00 - 12:00	12	155	10	118	167	118	NO / NO	NO / YES	NO / NO
12:00 - 13:00	12	201	11	158	213	158	NO / YES	NO / YES	NO / YES
13:00 - 14:00	8	168	9	131	176	131	NO / NO	NO / YES	NO / YES
14:00 - 15:00	7	158	8	112	165	112	NO / NO	NO / YES	NO / NO
15:00 - 16:00	9	221	14	130	230	130	NO / NO	NO / YES	NO / YES
16:00 - 17:00	17	303	14	136	320	136	NO / NO	NO / YES	NO / YES
17:00 - 18:00	18	302	14	141	320	141	NO / NO	NO / YES	NO / YES
18:00 - 19:00	3	153	6	94	156	94	NO / NO	NO / YES	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**117**	**2286**	**118**	**1958**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	0	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	0	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	0	8	Not satisfied

COMMENTS:

37th St at RTC West - Build Phase 1 2027 - No 37th St Connection
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	117
30	Major App3:	TH 371	2	2286
30	Minor App2:	RTC W	1	118
30	Minor App4:	RTCW	1	1958

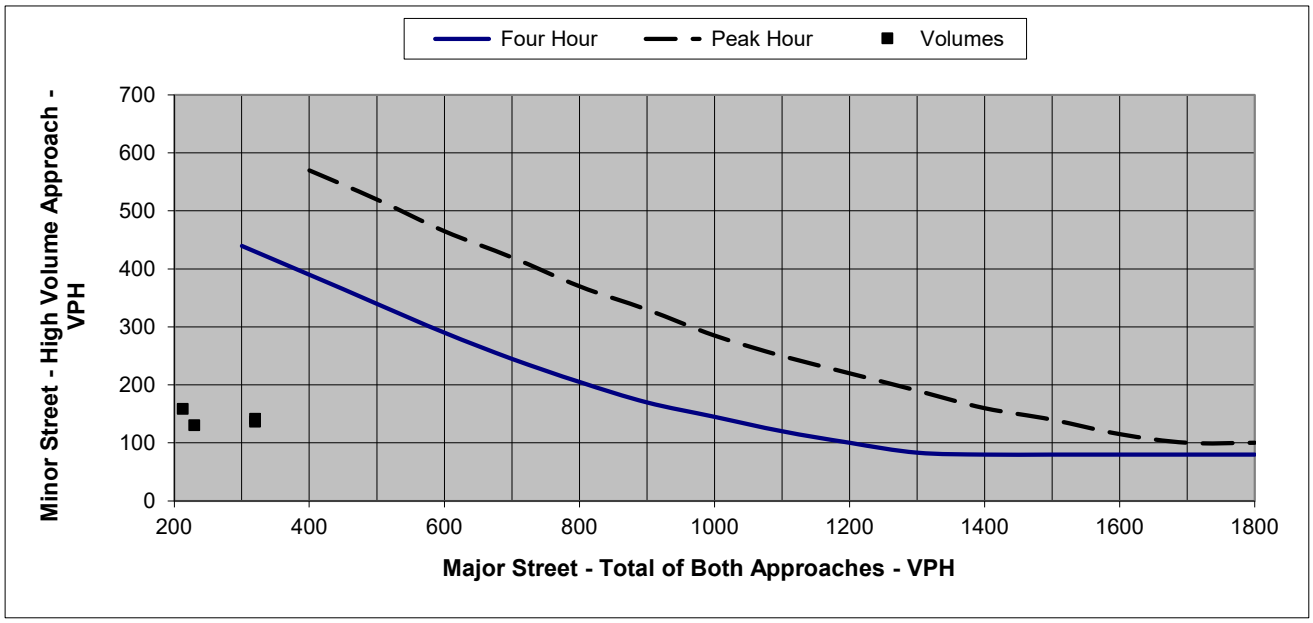


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	440	
400	390	570
500	340	520
600	290	465
700	245	420
800	205	370
900	170	330
1000	145	285
1100	120	250
1200	100	220
1300	83	190
1400	80	160
1500	80	140
1600	80	115
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	78	173	NO	NO
7:00 - 8:00	171	305	NO	NO
8:00 - 9:00	158	252	NO	NO
9:00 - 10:00	127	112	NO	NO
10:00 - 11:00	122	96	NO	NO
11:00 - 12:00	167	118	NO	NO
12:00 - 13:00	213	158	NO	NO
13:00 - 14:00	176	131	NO	NO
14:00 - 15:00	165	112	NO	NO
15:00 - 16:00	230	130	NO	NO
16:00 - 17:00	320	136	NO	NO
17:00 - 18:00	320	141	NO	NO
18:00 - 19:00	156	94	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC West - Build Phase 2 2028
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	3017
30	Major App3:	TH 371	WB	2	3764
30	Minor App2:	RTC W	NB	1	411
30	Minor App4:	RTCW	SB	1	1942

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement
300 **200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	204	156	13	157	360	170	YES / NO
7:00 - 8:00	266	279	22	273	545	295	**YES / YES**
8:00 - 9:00	236	255	21	226	491	247	**YES / YES**
9:00 - 10:00	197	225	23	115	422	138	YES / NO
10:00 - 11:00	179	208	26	98	387	124	YES / NO
11:00 - 12:00	207	252	33	120	459	153	YES / NO
12:00 - 13:00	240	314	38	152	554	190	YES / NO
13:00 - 14:00	214	271	26	130	485	156	YES / NO
14:00 - 15:00	227	271	28	118	498	146	YES / NO
15:00 - 16:00	273	380	49	141	653	190	YES / NO
16:00 - 17:00	277	440	56	146	717	202	**YES / YES**
17:00 - 18:00	277	444	56	152	721	208	**YES / YES**
18:00 - 19:00	220	269	20	114	489	134	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**3017**	**3764**	**411**	**1942**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**4**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

37th St at RTC West - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	3017
30	Major App3:	TH 371	WB	2	3764
30	Minor App2:	RTC W	NB	1	144
30	Minor App4:	RTCW	SB	1	1573

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	204	156	6	134	360	134	NO / NO	NO / YES	NO / YES
7:00 - 8:00	266	279	8	238	545	238	NO / YES	NO / YES	NO / YES
8:00 - 9:00	236	255	6	196	491	196	NO / YES	NO / YES	NO / YES
9:00 - 10:00	197	225	8	90	422	90	NO / NO	NO / YES	NO / NO
10:00 - 11:00	179	208	9	75	387	75	NO / NO	NO / YES	NO / NO
11:00 - 12:00	207	252	12	97	459	97	NO / NO	NO / YES	NO / NO
12:00 - 13:00	240	314	14	126	554	126	NO / NO	NO / YES	NO / YES
13:00 - 14:00	214	271	9	106	485	106	NO / NO	NO / YES	NO / NO
14:00 - 15:00	227	271	10	91	498	91	NO / NO	NO / YES	NO / NO
15:00 - 16:00	273	380	17	106	653	106	YES / NO	NO / YES	NO / NO
16:00 - 17:00	277	440	19	112	717	112	YES / NO	NO / YES	NO / NO
17:00 - 18:00	277	444	18	117	721	117	YES / NO	NO / YES	YES / NO
18:00 - 19:00	220	269	8	85	489	85	NO / NO	NO / YES	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**3017**	**3764**	**144**	**1573**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	0	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	0	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	3	8	Not satisfied

COMMENTS:

37th St at RTC West - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	3017
30	Major App3:	TH 371	2	3764
30	Minor App2:	RTC W	1	144
30	Minor App4:	RTCW	1	1573

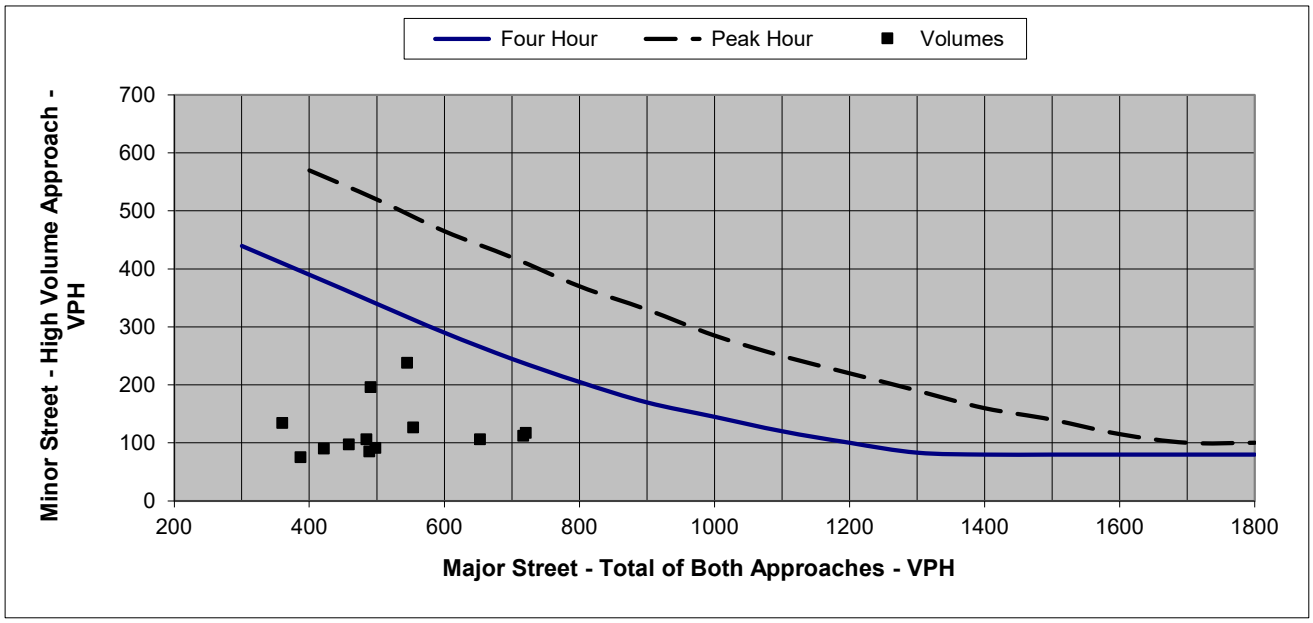


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	440	
400	390	570
500	340	520
600	290	465
700	245	420
800	205	370
900	170	330
1000	145	285
1100	120	250
1200	100	220
1300	83	190
1400	80	160
1500	80	140
1600	80	115
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	360	134	NO	NO
7:00 - 8:00	545	238	NO	NO
8:00 - 9:00	491	196	NO	NO
9:00 - 10:00	422	90	NO	NO
10:00 - 11:00	387	75	NO	NO
11:00 - 12:00	459	97	NO	NO
12:00 - 13:00	554	126	NO	NO
13:00 - 14:00	485	106	NO	NO
14:00 - 15:00	498	91	NO	NO
15:00 - 16:00	653	106	NO	NO
16:00 - 17:00	717	112	NO	NO
17:00 - 18:00	721	117	NO	NO
18:00 - 19:00	489	85	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC West - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	3018
30	Major App3:	TH 371	WB	2	3777
30	Minor App2:	RTC W	NB	1	418
30	Minor App4:	RTCW	SB	1	1945

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement
300 **200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	204	156	13	158	360	171	YES / NO
7:00 - 8:00	267	279	22	272	546	294	**YES / YES**
8:00 - 9:00	236	257	21	227	493	248	**YES / YES**
9:00 - 10:00	196	226	23	115	422	138	YES / NO
10:00 - 11:00	179	208	26	98	387	124	YES / NO
11:00 - 12:00	207	250	33	118	457	151	YES / NO
12:00 - 13:00	239	314	38	153	553	191	YES / NO
13:00 - 14:00	213	271	27	130	484	157	YES / NO
14:00 - 15:00	226	272	28	117	498	145	YES / NO
15:00 - 16:00	273	379	50	140	652	190	YES / NO
16:00 - 17:00	279	447	58	148	726	206	**YES / YES**
17:00 - 18:00	279	449	59	155	728	214	**YES / YES**
18:00 - 19:00	220	269	20	114	489	134	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**3018**	**3777**	**418**	**1945**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**4**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

37th St at RTC West - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	3018
30	Major App3:	TH 371	WB	2	3777
30	Minor App2:	RTC W	NB	1	147
30	Minor App4:	RTCW	SB	1	1575

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	204	156	6	135	360	135	NO / NO	NO / YES	NO / YES
7:00 - 8:00	267	279	8	237	546	237	NO / YES	NO / YES	NO / YES
8:00 - 9:00	236	257	6	196	493	196	NO / YES	NO / YES	NO / YES
9:00 - 10:00	196	226	8	90	422	90	NO / NO	NO / YES	NO / NO
10:00 - 11:00	179	208	9	75	387	75	NO / NO	NO / YES	NO / NO
11:00 - 12:00	207	250	12	95	457	95	NO / NO	NO / YES	NO / NO
12:00 - 13:00	239	314	14	127	553	127	NO / NO	NO / YES	NO / YES
13:00 - 14:00	213	271	9	106	484	106	NO / NO	NO / YES	NO / NO
14:00 - 15:00	226	272	10	90	498	90	NO / NO	NO / YES	NO / NO
15:00 - 16:00	273	379	18	105	652	105	YES / NO	NO / YES	NO / NO
16:00 - 17:00	279	447	20	114	726	114	YES / NO	NO / YES	YES / NO
17:00 - 18:00	279	449	19	120	728	120	YES / NO	NO / YES	**YES / YES**
18:00 - 19:00	220	269	8	85	489	85	NO / NO	NO / YES	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**3018**	**3777**	**147**	**1575**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	1	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	1	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	4	8	Not satisfied

COMMENTS:

37th St at RTC West - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC West
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	3018
30	Major App3:	TH 371	2	3777
30	Minor App2:	RTC W	1	147
30	Minor App4:	RTCW	1	1575

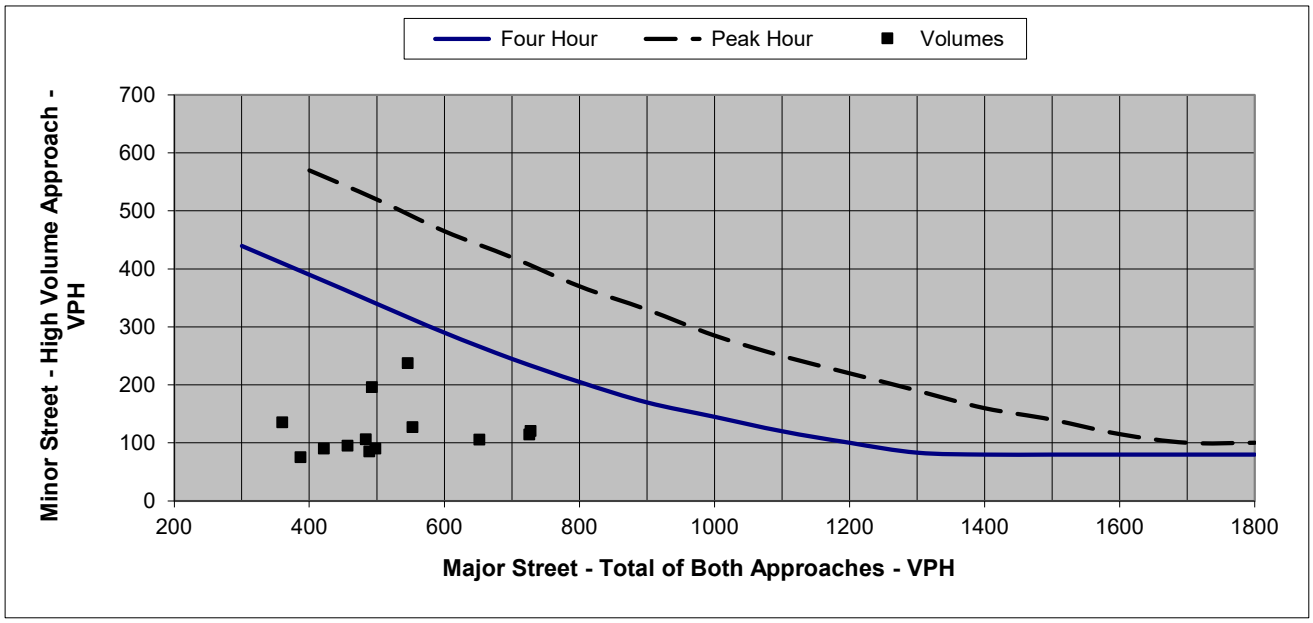


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	440	
400	390	570
500	340	520
600	290	465
700	245	420
800	205	370
900	170	330
1000	145	285
1100	120	250
1200	100	220
1300	83	190
1400	80	160
1500	80	140
1600	80	115
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	360	135	NO	NO
7:00 - 8:00	546	237	NO	NO
8:00 - 9:00	493	196	NO	NO
9:00 - 10:00	422	90	NO	NO
10:00 - 11:00	387	75	NO	NO
11:00 - 12:00	457	95	NO	NO
12:00 - 13:00	553	127	NO	NO
13:00 - 14:00	484	106	NO	NO
14:00 - 15:00	498	90	NO	NO
15:00 - 16:00	652	105	NO	NO
16:00 - 17:00	726	114	NO	NO
17:00 - 18:00	728	120	NO	NO
18:00 - 19:00	489	85	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC East - Build Phase 1 2027 - No 37th St Connection
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	3217
30	Major App3:	TH 371	WB	3	5411
30	Minor App2:	RTC E	NB	2	2612
30	Minor App4:	-	SB	0	0

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement
300 **200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	122	442	51	0	564	51	YES / NO
7:00 - 8:00	252	805	116	0	1057	116	YES / NO
8:00 - 9:00	228	694	118	0	922	118	YES / NO
9:00 - 10:00	163	310	117	0	473	117	YES / NO
10:00 - 11:00	165	272	145	0	437	145	YES / NO
11:00 - 12:00	251	347	217	0	598	217	**YES / YES**
12:00 - 13:00	263	495	266	0	758	266	**YES / YES**
13:00 - 14:00	218	408	217	0	626	217	**YES / YES**
14:00 - 15:00	211	336	179	0	547	179	YES / NO
15:00 - 16:00	336	356	287	0	692	287	**YES / YES**
16:00 - 17:00	409	380	385	0	789	385	**YES / YES**
17:00 - 18:00	429	375	401	0	804	401	**YES / YES**
18:00 - 19:00	170	191	113	0	361	113	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**3217**	**5411**	**2612**	**0**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**6**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

37th St at RTC East - Build Phase 1 2027 - No 37th St Connection
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	3217
30	Major App3:	TH 371	WB	3	5411
30	Minor App2:	RTC E	NB	2	1524
30	Minor App4:	-	SB	0	0

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	200	100	160

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	122	442	36	0	564	36	NO / NO	NO / NO	NO / NO
7:00 - 8:00	252	805	75	0	1057	75	YES / NO	YES / NO	YES / NO
8:00 - 9:00	228	694	76	0	922	76	YES / NO	YES / NO	YES / NO
9:00 - 10:00	163	310	70	0	473	70	NO / NO	NO / NO	NO / NO
10:00 - 11:00	165	272	84	0	437	84	NO / NO	NO / NO	NO / NO
11:00 - 12:00	251	347	125	0	598	125	NO / NO	NO / YES	NO / NO
12:00 - 13:00	263	495	154	0	758	154	YES / NO	NO / YES	YES / NO
13:00 - 14:00	218	408	126	0	626	126	YES / NO	NO / YES	NO / NO
14:00 - 15:00	211	336	103	0	547	103	NO / NO	NO / YES	NO / NO
15:00 - 16:00	336	356	164	0	692	164	YES / NO	NO / YES	NO / YES
16:00 - 17:00	409	380	217	0	789	217	**YES / YES**	NO / YES	**YES / YES**
17:00 - 18:00	429	375	225	0	804	225	**YES / YES**	NO / YES	**YES / YES**
18:00 - 19:00	170	191	69	0	361	69	NO / NO	NO / NO	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**3217**	**5411**	**1524**	**0**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	2	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	2	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	2	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	3	8	Not satisfied

COMMENTS:

37th St at RTC East - Build Phase 1 2027 - No 37th St Connection
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	3217
30	Major App3:	TH 371	3	5411
30	Minor App2:	RTC E	2	1524
30	Minor App4:	-	0	0

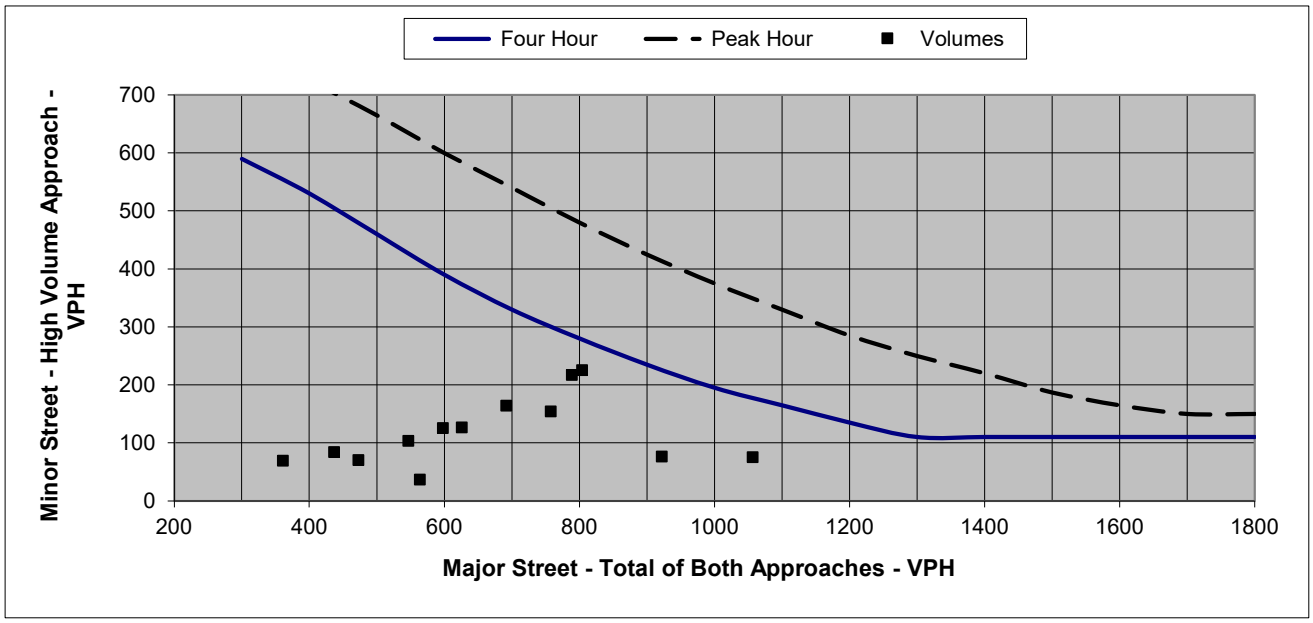


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	590	
400	530	725
500	460	665
600	390	600
700	330	540
800	280	480
900	235	425
1000	195	375
1100	165	330
1200	135	285
1300	110	250
1400	110	220
1500	110	187
1600	110	165
1700	110	150
1800	110	150

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	564	36	NO	NO
7:00 - 8:00	1057	75	NO	NO
8:00 - 9:00	922	76	NO	NO
9:00 - 10:00	473	70	NO	NO
10:00 - 11:00	437	84	NO	NO
11:00 - 12:00	598	125	NO	NO
12:00 - 13:00	758	154	NO	NO
13:00 - 14:00	626	126	NO	NO
14:00 - 15:00	547	103	NO	NO
15:00 - 16:00	692	164	NO	NO
16:00 - 17:00	789	217	NO	NO
17:00 - 18:00	804	225	NO	NO
18:00 - 19:00	361	69	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC East - Build Phase 2 2028
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	4935
30	Major App3:	TH 371	WB	3	7585
30	Minor App2:	RTC E	NB	2	3105
30	Minor App4:	-	SB	0	0

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement	
300	**200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	247	535	79	0	782	79	YES / NO
7:00 - 8:00	383	954	168	0	1337	168	YES / NO
8:00 - 9:00	341	829	169	0	1170	169	YES / NO
9:00 - 10:00	289	450	158	0	739	158	YES / NO
10:00 - 11:00	278	412	189	0	690	189	YES / NO
11:00 - 12:00	374	497	259	0	871	259	**YES / YES**
12:00 - 13:00	400	671	309	0	1071	309	**YES / YES**
13:00 - 14:00	344	576	265	0	920	265	**YES / YES**
14:00 - 15:00	352	508	217	0	860	217	**YES / YES**
15:00 - 16:00	502	582	322	0	1084	322	**YES / YES**
16:00 - 17:00	545	593	398	0	1138	398	**YES / YES**
17:00 - 18:00	565	590	414	0	1155	414	**YES / YES**
18:00 - 19:00	315	388	158	0	703	158	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**4935**	**7585**	**3105**	**0**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**7**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

37th St at RTC East - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	4935
30	Major App3:	TH 371	WB	3	7585
30	Minor App2:	RTC E	NB	2	1651
30	Minor App4:	-	SB	0	0

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	200	100	160

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	247	535	43	0	782	43	YES / NO	NO / NO	YES / NO
7:00 - 8:00	383	954	87	0	1337	87	YES / NO	YES / NO	YES / NO
8:00 - 9:00	341	829	89	0	1170	89	YES / NO	YES / NO	YES / NO
9:00 - 10:00	289	450	85	0	739	85	YES / NO	NO / NO	YES / NO
10:00 - 11:00	278	412	101	0	690	101	YES / NO	NO / YES	NO / NO
11:00 - 12:00	374	497	139	0	871	139	YES / NO	NO / YES	YES / NO
12:00 - 13:00	400	671	165	0	1071	165	YES / NO	**YES / YES**	**YES / YES**
13:00 - 14:00	344	576	141	0	920	141	YES / NO	**YES / YES**	YES / NO
14:00 - 15:00	352	508	114	0	860	114	YES / NO	NO / YES	YES / NO
15:00 - 16:00	502	582	170	0	1084	170	YES / NO	**YES / YES**	**YES / YES**
16:00 - 17:00	545	593	212	0	1138	212	**YES / YES**	**YES / YES**	**YES / YES**
17:00 - 18:00	565	590	220	0	1155	220	**YES / YES**	**YES / YES**	**YES / YES**
18:00 - 19:00	315	388	85	0	703	85	YES / NO	NO / NO	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**4935**	**7585**	**1651**	**0**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	5	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	2	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	5	8	Not satisfied
1A & 1B	Combination of Warrants	4	8	Not satisfied
Warrant 2	**Four Hour Volumes**	3	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	10	8	Crashes Insufficient

COMMENTS:

37th St at RTC East - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	4935
30	Major App3:	TH 371	3	7585
30	Minor App2:	RTC E	2	1651
30	Minor App4:	-	0	0

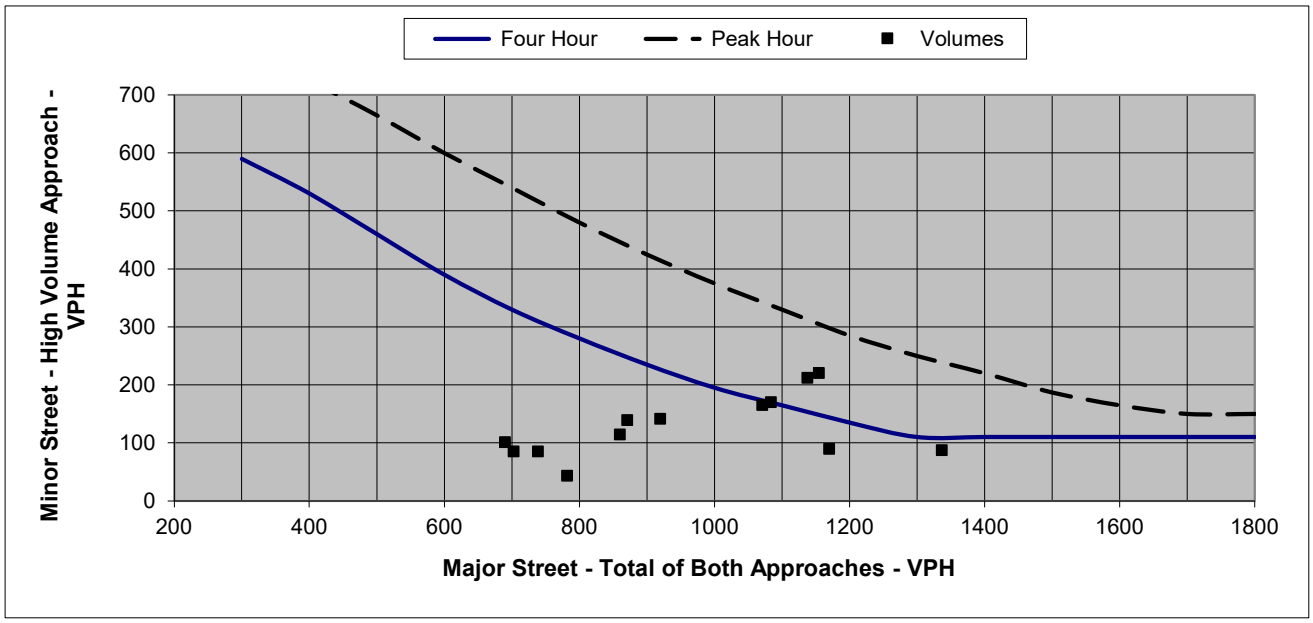


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	590	
400	530	725
500	460	665
600	390	600
700	330	540
800	280	480
900	235	425
1000	195	375
1100	165	330
1200	135	285
1300	110	250
1400	110	220
1500	110	187
1600	110	165
1700	110	150
1800	110	150

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	782	43	NO	NO
7:00 - 8:00	1337	87	NO	NO
8:00 - 9:00	1170	89	NO	NO
9:00 - 10:00	739	85	NO	NO
10:00 - 11:00	690	101	NO	NO
11:00 - 12:00	871	139	NO	NO
12:00 - 13:00	1071	165	NO	NO
13:00 - 14:00	920	141	NO	NO
14:00 - 15:00	860	114	NO	NO
15:00 - 16:00	1084	170	**YES**	NO
16:00 - 17:00	1138	212	**YES**	NO
17:00 - 18:00	1155	220	**YES**	NO
18:00 - 19:00	703	85	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

37th St at RTC East - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	TH 371	EB	2	4966
30	Major App3:	TH 371	WB	3	9251
30	Minor App2:	RTC E	NB	2	4817
30	Minor App4:	-	SB	0	0

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement	
300	**200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	248	568	149	0	816	149	YES / NO
7:00 - 8:00	382	1056	282	0	1438	282	**YES / YES**
8:00 - 9:00	342	945	280	0	1287	280	**YES / YES**
9:00 - 10:00	289	547	264	0	836	264	**YES / YES**
10:00 - 11:00	278	519	317	0	797	317	**YES / YES**
11:00 - 12:00	373	631	406	0	1004	406	**YES / YES**
12:00 - 13:00	400	832	465	0	1232	465	**YES / YES**
13:00 - 14:00	346	726	413	0	1072	413	**YES / YES**
14:00 - 15:00	353	642	340	0	995	340	**YES / YES**
15:00 - 16:00	503	721	453	0	1224	453	**YES / YES**
16:00 - 17:00	558	756	558	0	1314	558	**YES / YES**
17:00 - 18:00	579	761	590	0	1340	590	**YES / YES**
18:00 - 19:00	315	547	300	0	862	300	**YES / YES**
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**4966**	**9251**	**4817**	**0**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	12	8

All-way Stop Warrant: **Satisfied**

REMARKS:

37th St at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	TH 371	EB	2	4966
30	Major App3:	TH 371	WB	3	9251
30	Minor App2:	RTC E	NB	2	2511
30	Minor App4:	-	SB	0	0

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	600	900	720
Minor Approach	200	100	160

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	248	568	77	0	816	77	YES / NO	NO / NO	YES / NO
7:00 - 8:00	382	1056	145	0	1438	145	YES / NO	**YES / YES**	YES / NO
8:00 - 9:00	342	945	145	0	1287	145	YES / NO	**YES / YES**	YES / NO
9:00 - 10:00	289	547	137	0	836	137	YES / NO	NO / YES	YES / NO
10:00 - 11:00	278	519	165	0	797	165	YES / NO	NO / YES	**YES / YES**
11:00 - 12:00	373	631	211	0	1004	211	**YES / YES**	**YES / YES**	**YES / YES**
12:00 - 13:00	400	832	244	0	1232	244	**YES / YES**	**YES / YES**	**YES / YES**
13:00 - 14:00	346	726	216	0	1072	216	**YES / YES**	**YES / YES**	**YES / YES**
14:00 - 15:00	353	642	176	0	995	176	YES / NO	**YES / YES**	**YES / YES**
15:00 - 16:00	503	721	237	0	1224	237	**YES / YES**	**YES / YES**	**YES / YES**
16:00 - 17:00	558	756	293	0	1314	293	**YES / YES**	**YES / YES**	**YES / YES**
17:00 - 18:00	579	761	309	0	1340	309	**YES / YES**	**YES / YES**	**YES / YES**
18:00 - 19:00	315	547	156	0	862	156	YES / NO	NO / YES	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**4966**	**9251**	**2511**	**0**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	9	8	**Satisfied**
Warrant 1A	Minimum Vehicular Volume	6	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	9	8	**Satisfied**
1A & 1B	Combination of Warrants	8	8	**Satisfied**
Warrant 2	**Four Hour Volumes**	8	4	**Satisfied**
Warrant 3	**Peak Hour Volumes**	2	1	**Satisfied**
Warrant 7	**Crash Experience**	12	8	Crashes Insufficient

COMMENTS:

37th St at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: 37th St at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	TH 371	2	4966
30	Major App3:	TH 371	3	9251
30	Minor App2:	RTC E	2	2511
30	Minor App4:	-	0	0

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

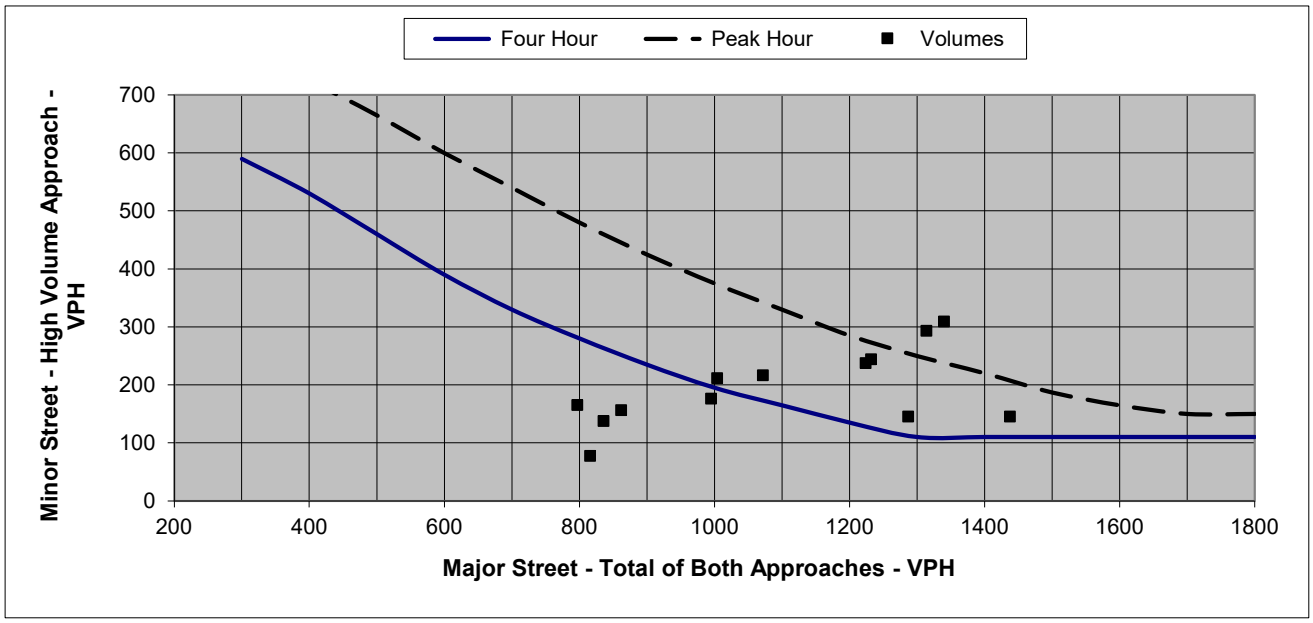


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	590	
400	530	725
500	460	665
600	390	600
700	330	540
800	280	480
900	235	425
1000	195	375
1100	165	330
1200	135	285
1300	110	250
1400	110	220
1500	110	187
1600	110	165
1700	110	150
1800	110	150

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	816	77	NO	NO
7:00 - 8:00	1438	145	**YES**	NO
8:00 - 9:00	1287	145	**YES**	NO
9:00 - 10:00	836	137	NO	NO
10:00 - 11:00	797	165	NO	NO
11:00 - 12:00	1004	211	**YES**	NO
12:00 - 13:00	1232	244	**YES**	NO
13:00 - 14:00	1072	216	**YES**	NO
14:00 - 15:00	995	176	NO	NO
15:00 - 16:00	1224	237	**YES**	NO
16:00 - 17:00	1314	293	**YES**	**YES**
17:00 - 18:00	1340	309	**YES**	**YES**
18:00 - 19:00	862	156	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

RTC South at RTC East - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	RTC E	NB	1	0
30	Major App3:	Internal Roadw	SB	1	2001
30	Minor App2:	RTC S	EB	1	1940
30	Minor App4:	East RTC Acc	WB	1	537

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement
300 **200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	0	153	53	8	153	61	NO / NO
7:00 - 8:00	0	301	119	20	301	139	YES / NO
8:00 - 9:00	0	259	117	22	259	139	NO / NO
9:00 - 10:00	0	108	94	22	108	116	NO / NO
10:00 - 11:00	0	108	112	34	108	146	NO / NO
11:00 - 12:00	0	135	159	46	135	205	NO / YES
12:00 - 13:00	0	184	182	56	184	238	NO / YES
13:00 - 14:00	0	157	144	56	157	200	NO / YES
14:00 - 15:00	0	125	129	47	125	176	NO / NO
15:00 - 16:00	0	145	206	48	145	254	NO / YES
16:00 - 17:00	0	137	269	66	137	335	NO / YES
17:00 - 18:00	0	136	279	70	136	349	NO / YES
18:00 - 19:00	0	53	77	42	53	119	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**0**	**2001**	**1940**	**537**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**0**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

RTC South at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	RTC E	NB	1	0
30	Major App3:	Internal Roadway	SB	1	2001
30	Minor App2:	RTC S	EB	1	1940
30	Minor App4:	East RTC Access	WB	1	431

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	500	750	600
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	0	153	53	8	153	53	NO / NO	NO / NO	NO / NO
7:00 - 8:00	0	301	119	18	301	119	NO / NO	NO / YES	NO / NO
8:00 - 9:00	0	259	117	18	259	117	NO / NO	NO / YES	NO / NO
9:00 - 10:00	0	108	94	18	108	94	NO / NO	NO / YES	NO / NO
10:00 - 11:00	0	108	112	27	108	112	NO / NO	NO / YES	NO / NO
11:00 - 12:00	0	135	159	38	135	159	NO / YES	NO / YES	NO / YES
12:00 - 13:00	0	184	182	44	184	182	NO / YES	NO / YES	NO / YES
13:00 - 14:00	0	157	144	44	157	144	NO / NO	NO / YES	NO / YES
14:00 - 15:00	0	125	129	38	125	129	NO / NO	NO / YES	NO / YES
15:00 - 16:00	0	145	206	39	145	206	NO / YES	NO / YES	NO / YES
16:00 - 17:00	0	137	269	52	137	269	NO / YES	NO / YES	NO / YES
17:00 - 18:00	0	136	279	53	136	279	NO / YES	NO / YES	NO / YES
18:00 - 19:00	0	53	77	34	53	77	NO / NO	NO / YES	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**0**	**2001**	**1940**	**431**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	0	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	0	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	0	8	Not satisfied

COMMENTS:

RTC South at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	RTC E	1	0
30	Major App3:	Internal Roadway	1	2001
30	Minor App2:	RTC S	1	1940
30	Minor App4:	East RTC Access	1	431

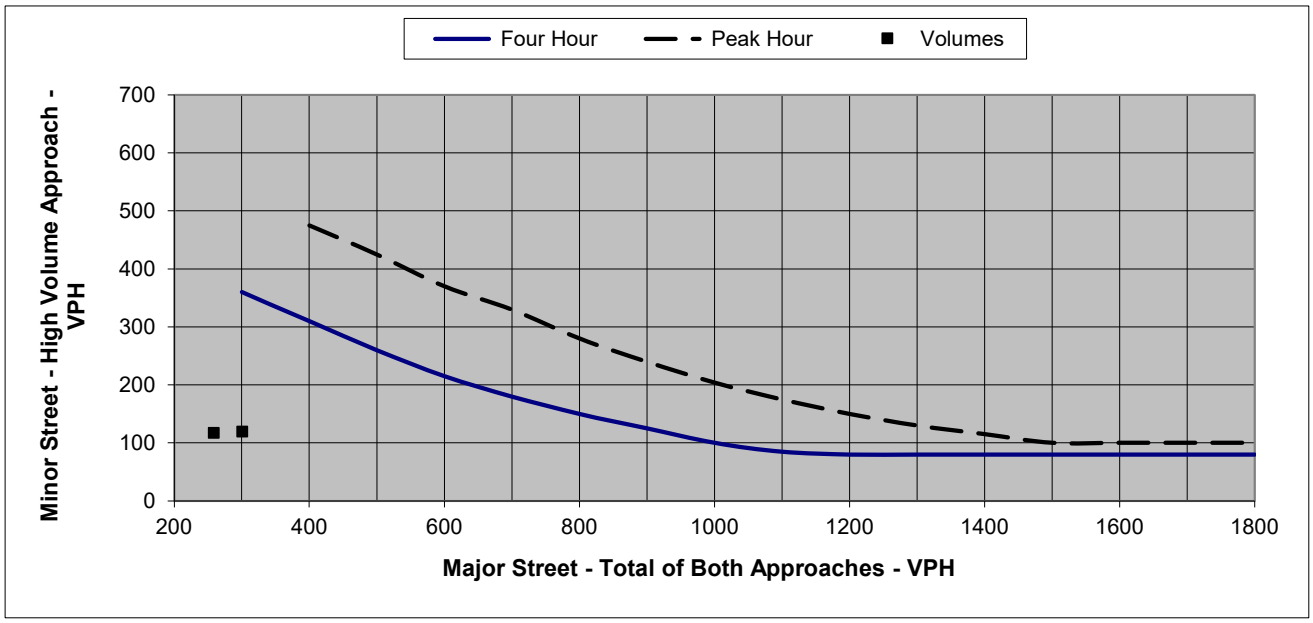


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	360	
400	310	475
500	260	425
600	215	370
700	180	330
800	150	280
900	125	240
1000	100	204
1100	85	175
1200	80	150
1300	80	130
1400	80	115
1500	80	100
1600	80	100
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	153	53	NO	NO
7:00 - 8:00	301	119	NO	NO
8:00 - 9:00	259	117	NO	NO
9:00 - 10:00	108	94	NO	NO
10:00 - 11:00	108	112	NO	NO
11:00 - 12:00	135	159	NO	NO
12:00 - 13:00	184	182	NO	NO
13:00 - 14:00	157	144	NO	NO
14:00 - 15:00	125	129	NO	NO
15:00 - 16:00	145	206	NO	NO
16:00 - 17:00	137	269	NO	NO
17:00 - 18:00	136	279	NO	NO
18:00 - 19:00	53	77	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

RTC South at RTC East - Build Phase 2 2028
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	RTC E	NB	1	779
30	Major App3:	Internal Roadw	SB	1	2467
30	Minor App2:	RTC S	EB	1	1670
30	Minor App4:	East RTC Acc	WB	1	530

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement	
300	**200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	41	152	40	8	193	48	NO / NO
7:00 - 8:00	79	311	93	19	390	112	YES / NO
8:00 - 9:00	73	273	91	22	346	113	YES / NO
9:00 - 10:00	51	132	83	22	183	105	NO / NO
10:00 - 11:00	54	140	101	34	194	135	NO / NO
11:00 - 12:00	55	175	146	46	230	192	NO / NO
12:00 - 13:00	62	228	164	56	290	220	NO / YES
13:00 - 14:00	63	204	129	56	267	185	NO / NO
14:00 - 15:00	54	170	113	47	224	160	NO / NO
15:00 - 16:00	55	193	186	48	248	234	NO / YES
16:00 - 17:00	66	189	225	63	255	288	NO / YES
17:00 - 18:00	70	186	234	67	256	301	NO / YES
18:00 - 19:00	56	114	65	42	170	107	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**779**	**2467**	**1670**	**530**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**0**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

RTC South at RTC East - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	RTC E	NB	1	779
30	Major App3:	Internal Roadway	SB	1	2467
30	Minor App2:	RTC S	EB	1	1670
30	Minor App4:	East RTC Access	WB	1	425

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	500	750	600
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	41	152	40	8	193	40	NO / NO	NO / NO	NO / NO
7:00 - 8:00	79	311	93	17	390	93	NO / NO	NO / YES	NO / NO
8:00 - 9:00	73	273	91	18	346	91	NO / NO	NO / YES	NO / NO
9:00 - 10:00	51	132	83	18	183	83	NO / NO	NO / YES	NO / NO
10:00 - 11:00	54	140	101	27	194	101	NO / NO	NO / YES	NO / NO
11:00 - 12:00	55	175	146	38	230	146	NO / NO	NO / YES	NO / YES
12:00 - 13:00	62	228	164	44	290	164	NO / YES	NO / YES	NO / YES
13:00 - 14:00	63	204	129	44	267	129	NO / NO	NO / YES	NO / YES
14:00 - 15:00	54	170	113	38	224	113	NO / NO	NO / YES	NO / NO
15:00 - 16:00	55	193	186	39	248	186	NO / YES	NO / YES	NO / YES
16:00 - 17:00	66	189	225	49	255	225	NO / YES	NO / YES	NO / YES
17:00 - 18:00	70	186	234	51	256	234	NO / YES	NO / YES	NO / YES
18:00 - 19:00	56	114	65	34	170	65	NO / NO	NO / NO	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**779**	**2467**	**1670**	**425**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	0	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	0	8	Not satisfied
Warrant 2	**Four Hour Volumes**	0	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	0	8	Not satisfied

COMMENTS:

RTC South at RTC East - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	RTC E	1	779
30	Major App3:	Internal Roadway	1	2467
30	Minor App2:	RTC S	1	1670
30	Minor App4:	East RTC Access	1	425

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

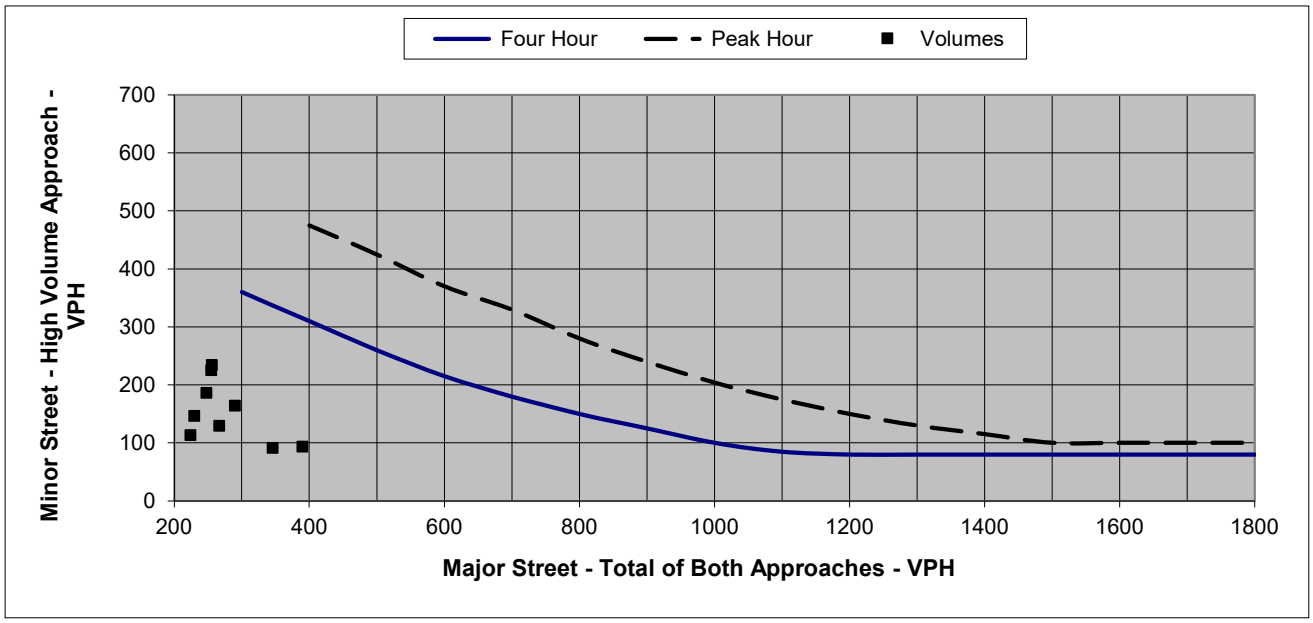


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200		
300	360	
400	310	475
500	260	425
600	215	370
700	180	330
800	150	280
900	125	240
1000	100	204
1100	85	175
1200	80	150
1300	80	130
1400	80	115
1500	80	100
1600	80	100
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met: Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	193	40	NO	NO
7:00 - 8:00	390	93	NO	NO
8:00 - 9:00	346	91	NO	NO
9:00 - 10:00	183	83	NO	NO
10:00 - 11:00	194	101	NO	NO
11:00 - 12:00	230	146	NO	NO
12:00 - 13:00	290	164	NO	NO
13:00 - 14:00	267	129	NO	NO
14:00 - 15:00	224	113	NO	NO
15:00 - 16:00	248	186	NO	NO
16:00 - 17:00	255	225	NO	NO
17:00 - 18:00	256	234	NO	NO
18:00 - 19:00	170	65	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

RTC South at RTC East - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/19/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
30	Major App1:	RTC E	NB	1	1072
30	Major App3:	Internal Road	SB	1	4105
30	Minor App2:	RTC S	EB	1	2462
30	Minor App4:	East RTC Acc	WB	1	1670

0.70 SPEED FACTOR USED? **No**

Minimum Volume Requirement
300 **200**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	71	185	76	20	256	96	NO / NO
7:00 - 8:00	120	409	154	53	529	207	**YES / YES**
8:00 - 9:00	107	382	151	64	489	215	**YES / YES**
9:00 - 10:00	69	226	126	95	295	221	NO / YES
10:00 - 11:00	72	246	154	128	318	282	**YES / YES**
11:00 - 12:00	72	307	213	156	379	369	**YES / YES**
12:00 - 13:00	78	387	231	184	465	415	**YES / YES**
13:00 - 14:00	80	353	187	179	433	366	**YES / YES**
14:00 - 15:00	70	301	164	145	371	309	**YES / YES**
15:00 - 16:00	73	332	244	148	405	392	**YES / YES**
16:00 - 17:00	88	350	315	166	438	481	**YES / YES**
17:00 - 18:00	94	354	330	176	448	506	**YES / YES**
18:00 - 19:00	78	273	117	156	351	273	**YES / YES**
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**1072**	**4105**	**2462**	**1670**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	11	8

All-way Stop Warrant: **Satisfied**

REMARKS:

RTC South at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/19/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
30	Major App1:	RTC E	NB	1	1072
30	Major App3:	Internal Roadway	SB	1	4105
30	Minor App2:	RTC S	EB	1	2462
30	Minor App4:	East RTC Access	WB	1	1129

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	500	750	600
Minor Approach	150	75	120

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	71	185	76	16	256	76	NO / NO	NO / YES	NO / NO
7:00 - 8:00	120	409	154	39	529	154	**YES / YES**	NO / YES	NO / YES
8:00 - 9:00	107	382	151	44	489	151	NO / YES	NO / YES	NO / YES
9:00 - 10:00	69	226	126	63	295	126	NO / NO	NO / YES	NO / YES
10:00 - 11:00	72	246	154	84	318	154	NO / YES	NO / YES	NO / YES
11:00 - 12:00	72	307	213	104	379	213	NO / YES	NO / YES	NO / YES
12:00 - 13:00	78	387	231	121	465	231	NO / YES	NO / YES	NO / YES
13:00 - 14:00	80	353	187	120	433	187	NO / YES	NO / YES	NO / YES
14:00 - 15:00	70	301	164	98	371	164	NO / YES	NO / YES	NO / YES
15:00 - 16:00	73	332	244	101	405	244	NO / YES	NO / YES	NO / YES
16:00 - 17:00	88	350	315	115	438	315	NO / YES	NO / YES	NO / YES
17:00 - 18:00	94	354	330	121	448	330	NO / YES	NO / YES	NO / YES
18:00 - 19:00	78	273	117	103	351	117	NO / NO	NO / YES	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**1072**	**4105**	**2462**	**1129**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	1	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	1	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	0	8	Not satisfied
1A & 1B	Combination of Warrants	0	8	Not satisfied
Warrant 2	**Four Hour Volumes**	2	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	7	8	Not satisfied

COMMENTS:

RTC South at RTC East - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: RTC South at RTC East
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/19/2025

OPERATOR: LJ

40 MPH OR FASTER?	NO
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**NO**

85th% Speed	Approach Description		Lanes	Approach
30	Major App1:	RTC E	1	1072
30	Major App3:	Internal Roadway	1	4105
30	Minor App2:	RTC S	1	2462
30	Minor App4:	East RTC Access	1	1129

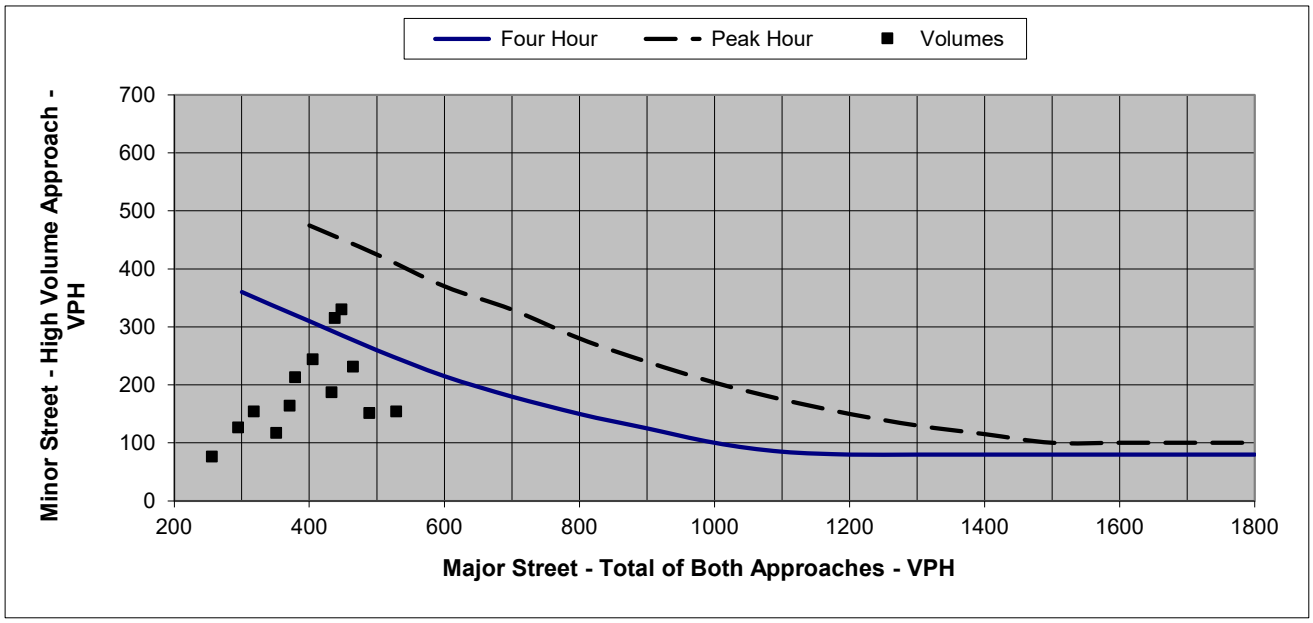


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major	Minor App.	Minor App.
Approach	Four Hour	Peak Hour
200		
300	360	
400	310	475
500	260	425
600	215	370
700	180	330
800	150	280
900	125	240
1000	100	204
1100	85	175
1200	80	150
1300	80	130
1400	80	115
1500	80	100
1600	80	100
1700	80	100
1800	80	100

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	256	76	NO	NO
7:00 - 8:00	529	154	NO	NO
8:00 - 9:00	489	151	NO	NO
9:00 - 10:00	295	126	NO	NO
10:00 - 11:00	318	154	NO	NO
11:00 - 12:00	379	213	NO	NO
12:00 - 13:00	465	231	NO	NO
13:00 - 14:00	433	187	NO	NO
14:00 - 15:00	371	164	NO	NO
15:00 - 16:00	405	244	NO	NO
16:00 - 17:00	438	315	**YES**	NO
17:00 - 18:00	448	330	**YES**	NO
18:00 - 19:00	351	117	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

Valleyhigh Dr at Watson Ave - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
45	Major App1:	Valleyhigh Dr	NB	2	4474
45	Major App3:	Valleyhigh Dr	SB	2	4247
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	1399

0.70 SPEED FACTOR USED? **Yes**

Minimum Volume Requirement	
210	**140**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	252	200	0	24	452	24	YES / NO
7:00 - 8:00	524	387	0	61	911	61	YES / NO
8:00 - 9:00	415	323	0	58	738	58	YES / NO
9:00 - 10:00	256	232	0	63	488	63	YES / NO
10:00 - 11:00	249	238	0	84	487	84	YES / NO
11:00 - 12:00	283	331	0	121	614	121	YES / NO
12:00 - 13:00	356	329	0	142	685	142	**YES / YES**
13:00 - 14:00	352	318	0	122	670	122	YES / NO
14:00 - 15:00	354	351	0	106	705	106	YES / NO
15:00 - 16:00	393	411	0	153	804	153	**YES / YES**
16:00 - 17:00	448	473	0	213	921	213	**YES / YES**
17:00 - 18:00	397	428	0	181	825	181	**YES / YES**
18:00 - 19:00	195	226	0	71	421	71	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**4474**	**4247**	**0**	**1399**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	**4**	**8**

All-way Stop Warrant: **Not satisfied**

REMARKS:

Valleyhigh Dr at Watson Ave - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
45	Major App1:	Valleyhigh Dr	NB	2	4474
45	Major App3:	Valleyhigh Dr	SB	2	4247
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	663

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	420	630	504
Minor Approach	105	53	84

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	252	200	0	16	452	16	YES / NO	NO / NO	NO / NO
7:00 - 8:00	524	387	0	36	911	36	YES / NO	YES / NO	YES / NO
8:00 - 9:00	415	323	0	33	738	33	YES / NO	YES / NO	YES / NO
9:00 - 10:00	256	232	0	32	488	32	YES / NO	NO / NO	NO / NO
10:00 - 11:00	249	238	0	40	487	40	YES / NO	NO / NO	NO / NO
11:00 - 12:00	283	331	0	56	614	56	YES / NO	NO / YES	YES / NO
12:00 - 13:00	356	329	0	64	685	64	YES / NO	**YES / YES**	YES / NO
13:00 - 14:00	352	318	0	54	670	54	YES / NO	**YES / YES**	YES / NO
14:00 - 15:00	354	351	0	47	705	47	YES / NO	YES / NO	YES / NO
15:00 - 16:00	393	411	0	70	804	70	YES / NO	**YES / YES**	YES / NO
16:00 - 17:00	448	473	0	101	921	101	YES / NO	**YES / YES**	**YES / YES**
17:00 - 18:00	397	428	0	83	825	83	YES / NO	**YES / YES**	YES / NO
18:00 - 19:00	195	226	0	31	421	31	YES / NO	NO / NO	NO / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**4474**	**4247**	**0**	**663**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	5	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	5	8	Not satisfied
1A & 1B	Combination of Warrants	1	8	Not satisfied
Warrant 2	**Four Hour Volumes**	2	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	3	8	Not satisfied

COMMENTS:

Valleyhigh Dr at Watson Ave - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Lanes	Approach
45	Major App1:	Valleyhigh Dr	2	4474
45	Major App3:	Valleyhigh Dr	2	4247
30	Minor App2:	-	0	0
30	Minor App4:	Watson Ave	1	663

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**

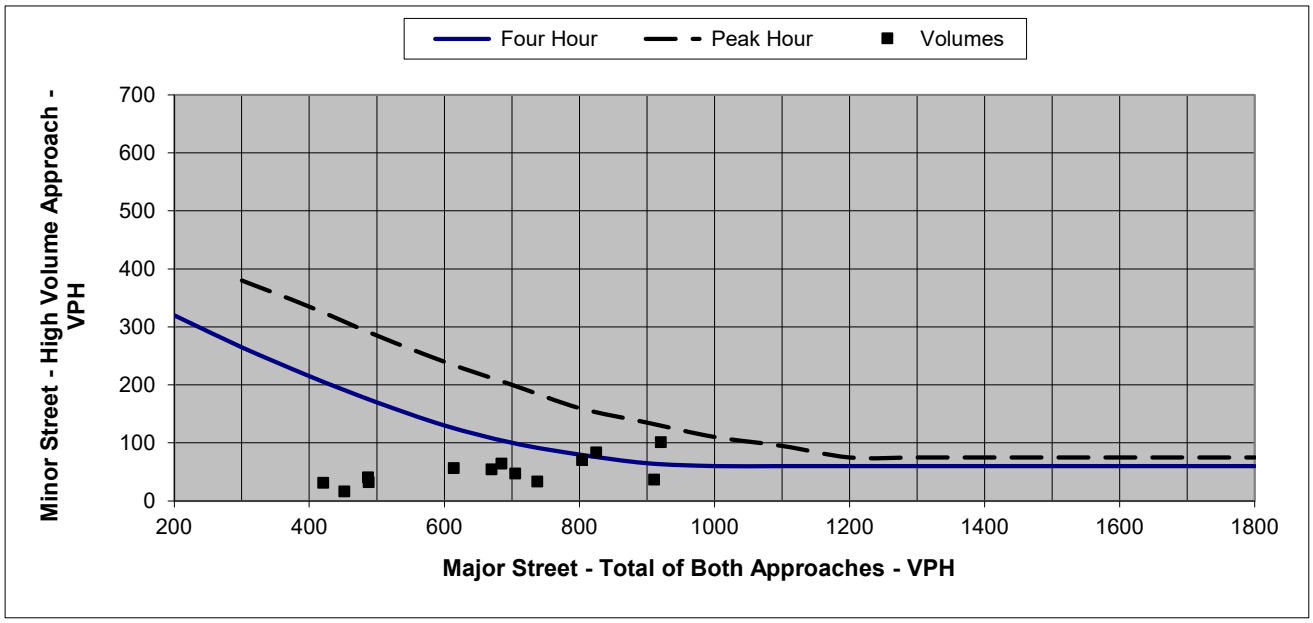


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200	320	
300	265	380
400	215	335
500	170	285
600	130	240
700	100	200
800	80	160
900	65	135
1000	60	110
1100	60	95
1200	60	75
1300	60	75
1400	60	75
1500	60	75
1600	60	75
1700	60	75
1800	60	75

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	452	16	NO	NO
7:00 - 8:00	911	36	NO	NO
8:00 - 9:00	738	33	NO	NO
9:00 - 10:00	488	32	NO	NO
10:00 - 11:00	487	40	NO	NO
11:00 - 12:00	614	56	NO	NO
12:00 - 13:00	685	64	NO	NO
13:00 - 14:00	670	54	NO	NO
14:00 - 15:00	705	47	NO	NO
15:00 - 16:00	804	70	NO	NO
16:00 - 17:00	921	101	**YES**	NO
17:00 - 18:00	825	83	**YES**	NO
18:00 - 19:00	421	31	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

Valleyhigh Dr at Watson Ave - Build Phase 2 2028
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
45	Major App1:	Valleyhigh Dr	NB	2	4798
45	Major App3:	Valleyhigh Dr	SB	2	5183
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	2130

0.70 SPEED FACTOR USED? **Yes**

Minimum Volume Requirement
210 **140**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	263	233	0	57	496	57	YES / NO
7:00 - 8:00	536	440	0	127	976	127	YES / NO
8:00 - 9:00	426	372	0	119	798	119	YES / NO
9:00 - 10:00	276	289	0	116	565	116	YES / NO
10:00 - 11:00	274	304	0	143	578	143	**YES / YES**
11:00 - 12:00	312	413	0	181	725	181	**YES / YES**
12:00 - 13:00	389	419	0	211	808	211	**YES / YES**
13:00 - 14:00	385	404	0	193	789	193	**YES / YES**
14:00 - 15:00	385	428	0	164	813	164	**YES / YES**
15:00 - 16:00	428	502	0	208	930	208	**YES / YES**
16:00 - 17:00	476	565	0	251	1041	251	**YES / YES**
17:00 - 18:00	423	511	0	223	934	223	**YES / YES**
18:00 - 19:00	225	303	0	137	528	137	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**4798**	**5183**	**0**	**2130**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	8	8

All-way Stop Warrant: **Satisfied**

REMARKS:

Valleyhigh Dr at Watson Ave - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
45	Major App1:	Valleyhigh Dr	NB	2	4798
45	Major App3:	Valleyhigh Dr	SB	2	5183
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	727

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	420	630	504
Minor Approach	105	53	84

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	263	233	0	20	496	20	YES / NO	NO / NO	NO / NO
7:00 - 8:00	536	440	0	50	976	50	YES / NO	YES / NO	YES / NO
8:00 - 9:00	426	372	0	43	798	43	YES / NO	YES / NO	YES / NO
9:00 - 10:00	276	289	0	39	565	39	YES / NO	NO / NO	YES / NO
10:00 - 11:00	274	304	0	47	578	47	YES / NO	NO / NO	YES / NO
11:00 - 12:00	312	413	0	60	725	60	YES / NO	**YES / YES**	YES / NO
12:00 - 13:00	389	419	0	70	808	70	YES / NO	**YES / YES**	YES / NO
13:00 - 14:00	385	404	0	64	789	64	YES / NO	**YES / YES**	YES / NO
14:00 - 15:00	385	428	0	53	813	53	YES / NO	**YES / YES**	YES / NO
15:00 - 16:00	428	502	0	69	930	69	YES / NO	**YES / YES**	YES / NO
16:00 - 17:00	476	565	0	92	1041	92	YES / NO	**YES / YES**	**YES / YES**
17:00 - 18:00	423	511	0	78	934	78	YES / NO	**YES / YES**	YES / NO
18:00 - 19:00	225	303	0	42	528	42	YES / NO	NO / NO	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**4798**	**5183**	**0**	**727**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	7	8	Not satisfied
Warrant 1A	Minimum Vehicular Volume	0	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	7	8	Not satisfied
1A & 1B	Combination of Warrants	1	8	Not satisfied
Warrant 2	**Four Hour Volumes**	3	4	Not satisfied
Warrant 3	**Peak Hour Volumes**	0	1	Not satisfied
Warrant 7	**Crash Experience**	6	8	Not satisfied

COMMENTS:

Valleyhigh Dr at Watson Ave - Build Phase 2 2028
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/23/2025

OPERATOR: LJ

85th% Speed	Approach Description		Lanes	Approach
45	Major App1:	Valleyhigh Dr	2	4798
45	Major App3:	Valleyhigh Dr	2	5183
30	Minor App2:	-	0	0
30	Minor App4:	Watson Ave	1	727

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**

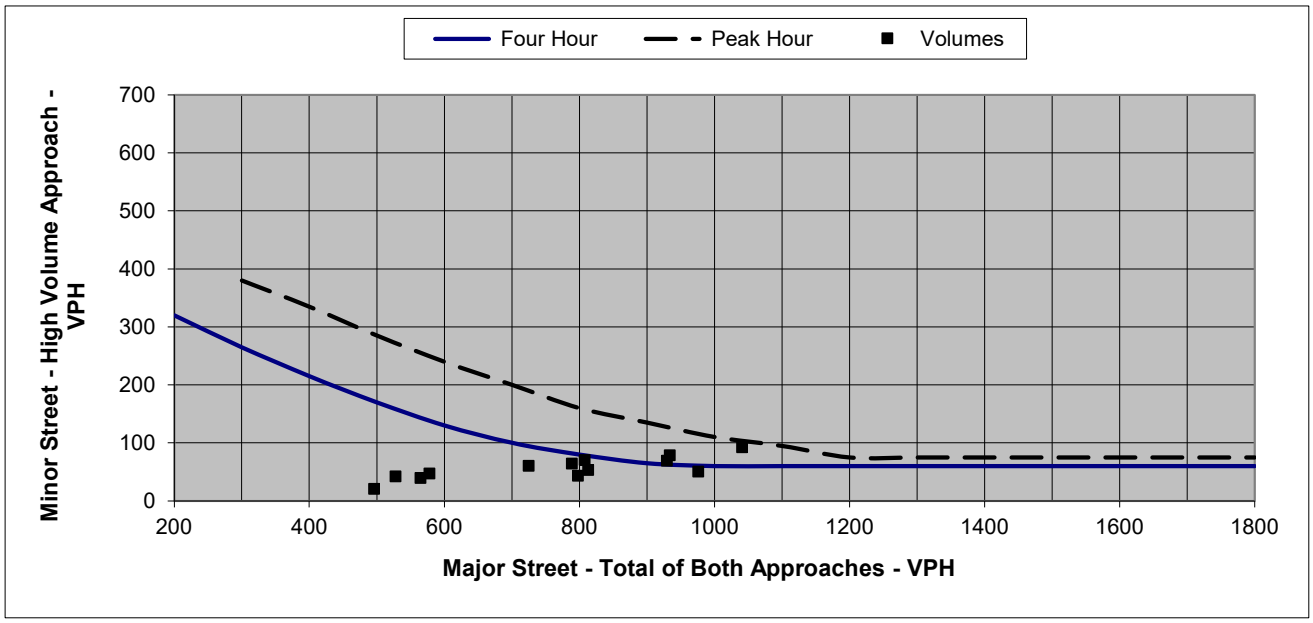


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200	320	
300	265	380
400	215	335
500	170	285
600	130	240
700	100	200
800	80	160
900	65	135
1000	60	110
1100	60	95
1200	60	75
1300	60	75
1400	60	75
1500	60	75
1600	60	75
1700	60	75
1800	60	75

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	496	20	NO	NO
7:00 - 8:00	976	50	NO	NO
8:00 - 9:00	798	43	NO	NO
9:00 - 10:00	565	39	NO	NO
10:00 - 11:00	578	47	NO	NO
11:00 - 12:00	725	60	NO	NO
12:00 - 13:00	808	70	NO	NO
13:00 - 14:00	789	64	NO	NO
14:00 - 15:00	813	53	NO	NO
15:00 - 16:00	930	69	**YES**	NO
16:00 - 17:00	1041	92	**YES**	NO
17:00 - 18:00	934	78	**YES**	NO
18:00 - 19:00	528	42	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

Valleyhigh Dr at Watson Ave - Full Build Out 2029
ALL WAY STOP
WARRANT ANALYSIS

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach Total
45	Major App1:	Valleyhigh Dr	NB	2	5322
45	Major App3:	Valleyhigh Dr	SB	2	5878
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	3201

0.70 SPEED FACTOR USED? **Yes**

Minimum Volume Requirement
210 **140**

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MINOR APPROACH TOTAL Σ (APP.2 + APP. 4)	WARRANT MET MAJOR / MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO
6:00 - 7:00	287	252	0	96	539	96	YES / NO
7:00 - 8:00	598	486	0	199	1084	199	**YES / YES**
8:00 - 9:00	487	422	0	188	909	188	**YES / YES**
9:00 - 10:00	307	331	0	179	638	179	**YES / YES**
10:00 - 11:00	304	348	0	221	652	221	**YES / YES**
11:00 - 12:00	349	466	0	279	815	279	**YES / YES**
12:00 - 13:00	440	485	0	311	925	311	**YES / YES**
13:00 - 14:00	433	467	0	278	900	278	**YES / YES**
14:00 - 15:00	426	488	0	236	914	236	**YES / YES**
15:00 - 16:00	468	565	0	290	1033	290	**YES / YES**
16:00 - 17:00	512	634	0	381	1146	381	**YES / YES**
17:00 - 18:00	459	569	0	337	1028	337	**YES / YES**
18:00 - 19:00	252	365	0	206	617	206	**YES / YES**
19:00 - 20:00	0	0	0	0	0	0	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO
Daily	**5322**	**5878**	**0**	**3201**			

	Met (Hr)	Required (Hr)
Hours met for warrant:	12	8

All-way Stop Warrant: **Satisfied**

REMARKS:

Valleyhigh Dr at Watson Ave - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrant 1 and Summary

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025
OPERATOR: LJ

85th% Speed	Approach Description		Direction:	Lanes	Approach
45	Major App1:	Valleyhigh Dr	NB	2	5322
45	Major App3:	Valleyhigh Dr	SB	2	5878
30	Minor App2:	-	EB	0	0
30	Minor App4:	Watson Ave	WB	1	1144

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**
CORRECTABLE CRASHES: (12-month period)	0

	Minimum Volume Requirement		
	1A	1B	1A&B (80%)
Major Total	420	630	504
Minor Approach	105	53	84

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	MAJOR APPROACH TOTAL Σ (APP.1 + APP. 3)	MAX MINOR APPROACH (APP. 2 or 4)	WARRANT 1A - 8 hr MAJOR/MINOR	WARRANT 1B - 8 hr MAJOR/MINOR	WARRANT 1A & B MAJOR/MINOR
0:00 - 1:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
1:00 - 2:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
2:00 - 3:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
3:00 - 4:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
4:00 - 5:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
5:00 - 6:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
6:00 - 7:00	287	252	0	31	539	31	YES / NO	NO / NO	YES / NO
7:00 - 8:00	598	486	0	73	1084	73	YES / NO	**YES / YES**	YES / NO
8:00 - 9:00	487	422	0	66	909	66	YES / NO	**YES / YES**	YES / NO
9:00 - 10:00	307	331	0	62	638	62	YES / NO	**YES / YES**	YES / NO
10:00 - 11:00	304	348	0	77	652	77	YES / NO	**YES / YES**	YES / NO
11:00 - 12:00	349	466	0	102	815	102	YES / NO	**YES / YES**	**YES / YES**
12:00 - 13:00	440	485	0	112	925	112	**YES / YES**	**YES / YES**	**YES / YES**
13:00 - 14:00	433	467	0	96	900	96	YES / NO	**YES / YES**	**YES / YES**
14:00 - 15:00	426	488	0	80	914	80	YES / NO	**YES / YES**	YES / NO
15:00 - 16:00	468	565	0	102	1033	102	YES / NO	**YES / YES**	**YES / YES**
16:00 - 17:00	512	634	0	152	1146	152	**YES / YES**	**YES / YES**	**YES / YES**
17:00 - 18:00	459	569	0	128	1028	128	**YES / YES**	**YES / YES**	**YES / YES**
18:00 - 19:00	252	365	0	63	617	63	YES / NO	NO / YES	YES / NO
19:00 - 20:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
20:00 - 21:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
21:00 - 22:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
22:00 - 23:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
23:00 - 24:00	0	0	0	0	0	0	NO / NO	NO / NO	NO / NO
Totals	**5322**	**5878**	**0**	**1144**					

		Met (Hr)	Required (Hr)	WARRANT MET:
Warrant 1	**Eight Hour Volumes**	**11**	8	**Satisfied**
Warrant 1A	Minimum Vehicular Volume	3	8	Not satisfied
Warrant 1B	Interruption of Continuous Flow	**11**	8	**Satisfied**
1A & 1B	Combination of Warrants	6	8	Not satisfied
Warrant 2	**Four Hour Volumes**	**9**	4	**Satisfied**
Warrant 3	**Peak Hour Volumes**	**2**	1	**Satisfied**
Warrant 7	**Crash Experience**	**9**	8	Crashes Insufficient

COMMENTS:

Valleyhigh Dr at Watson Ave - Full Build Out 2029
SIGNAL WARRANT ANALYSIS
Warrants 2 and 3

LOCATION: Valleyhigh Dr at Watson Ave
COUNTY: Olmsted
REF. POINT: 0
DATE: 3/21/2025

OPERATOR: LJ

85th% Speed	Approach Description		Lanes	Approach
45	Major App1:	Valleyhigh Dr	2	5322
45	Major App3:	Valleyhigh Dr	2	5878
30	Minor App2:	-	0	0
30	Minor App4:	Watson Ave	1	1144

40 MPH OR FASTER?	YES
POPULATION < 10,000?	NO
VOLUME REQ. AT 70%?	**YES**

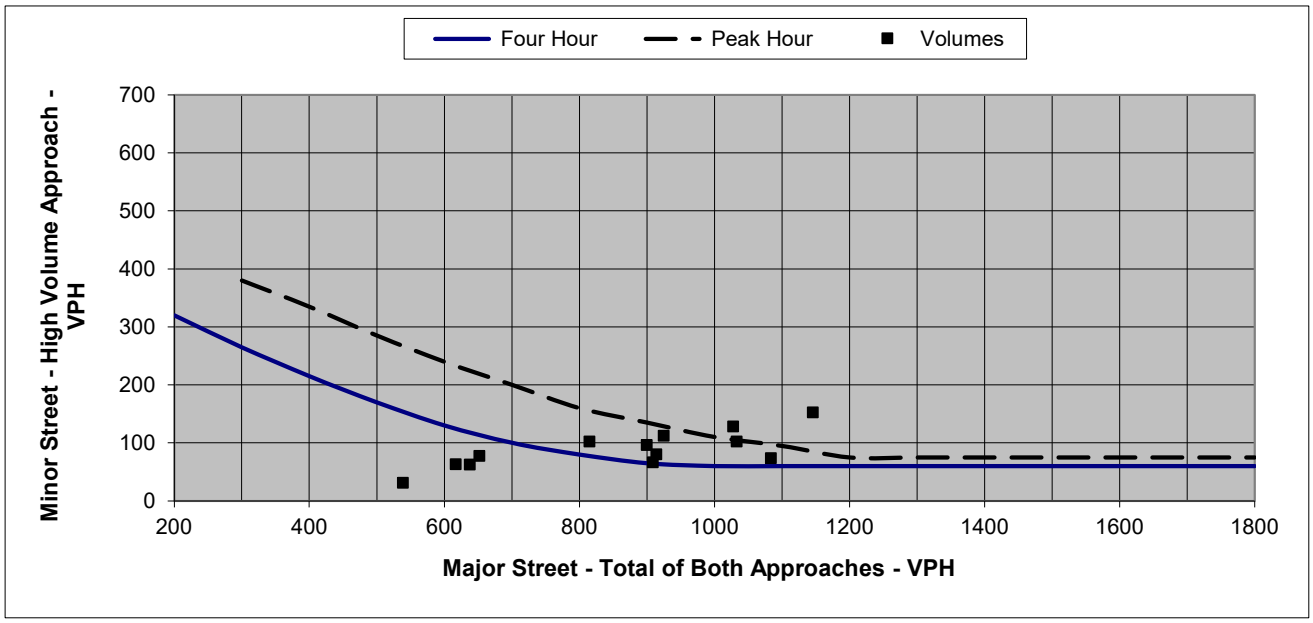


Figure 1. Four Hour and Peak Hour Warrant Analysis

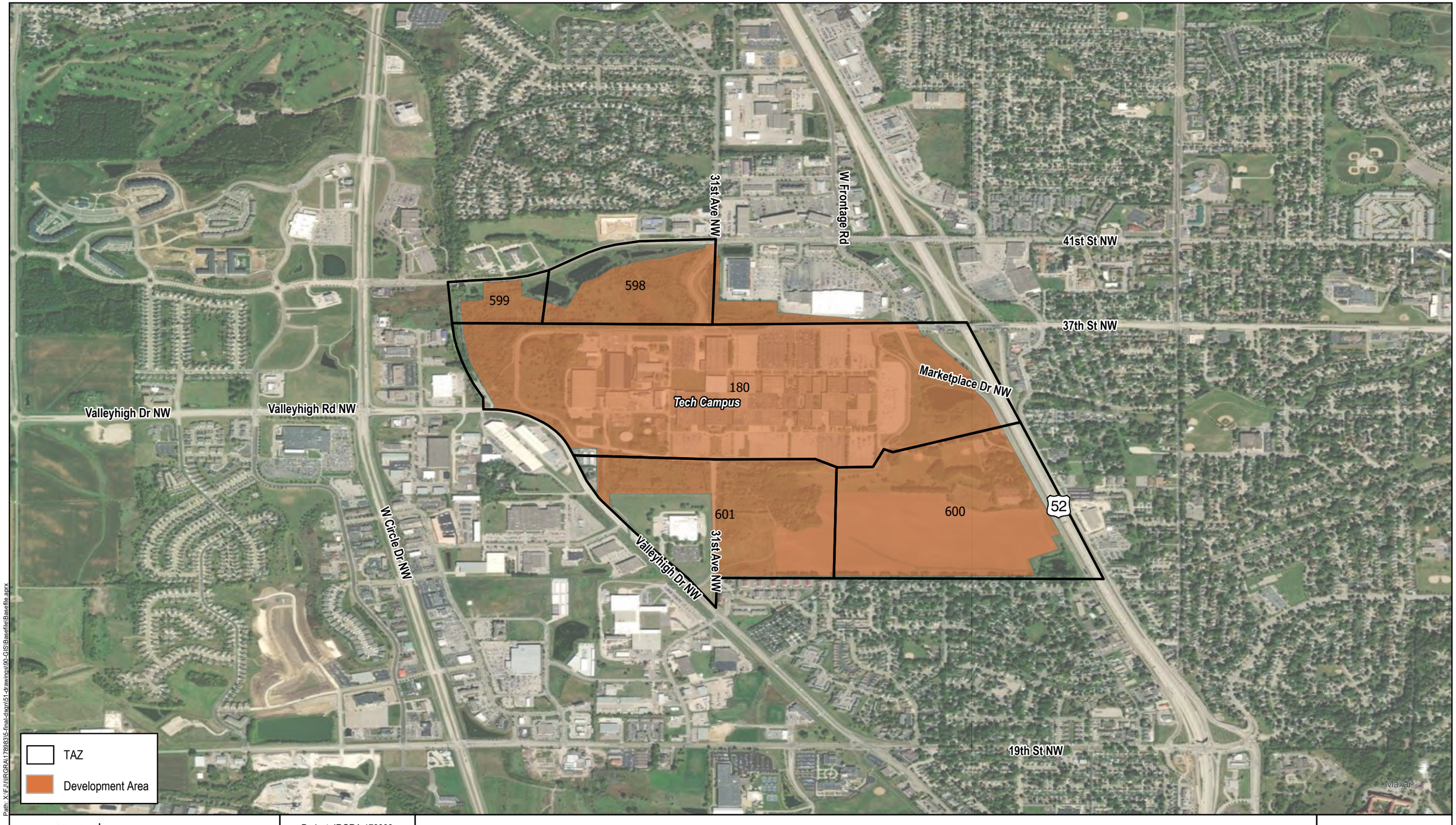
Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Warrant Criteria (Graph)		
Major Approach	Minor App. Four Hour	Minor App. Peak Hour
200	320	
300	265	380
400	215	335
500	170	285
600	130	240
700	100	200
800	80	160
900	65	135
1000	60	110
1100	60	95
1200	60	75
1300	60	75
1400	60	75
1500	60	75
1600	60	75
1700	60	75
1800	60	75

Actual Hourly Count			Warrants Met:	
			Warrant 2	Warrant 3
HOUR	Sum Major App.	Max Minor App.	Four Hour	Peak Hour
0:00 - 1:00	0	0	NO	NO
1:00 - 2:00	0	0	NO	NO
2:00 - 3:00	0	0	NO	NO
3:00 - 4:00	0	0	NO	NO
4:00 - 5:00	0	0	NO	NO
5:00 - 6:00	0	0	NO	NO
6:00 - 7:00	539	31	NO	NO
7:00 - 8:00	1084	73	**YES**	NO
8:00 - 9:00	909	66	**YES**	NO
9:00 - 10:00	638	62	NO	NO
10:00 - 11:00	652	77	NO	NO
11:00 - 12:00	815	102	**YES**	NO
12:00 - 13:00	925	112	**YES**	NO
13:00 - 14:00	900	96	**YES**	NO
14:00 - 15:00	914	80	**YES**	NO
15:00 - 16:00	1033	102	**YES**	NO
16:00 - 17:00	1146	152	**YES**	**YES**
17:00 - 18:00	1028	128	**YES**	**YES**
18:00 - 19:00	617	63	NO	NO
19:00 - 20:00	0	0	NO	NO
20:00 - 21:00	0	0	NO	NO
21:00 - 22:00	0	0	NO	NO
22:00 - 23:00	0	0	NO	NO
23:00 - 24:00	0	0	NO	NO

Appendix D

Transportation Analysis Zones



Path: X:\F\J\IRGRA\178983\5-final-dsnn\51-drawings\90-GIS\BaseFile\BaseFile.aprx

SEH

N

Project: IRGRA 178983
Print Date: 9/16/2024

User Name: ljohnson
Projection: Olmsted Co Coord
Source:

Transportation Analysis Zones (TAZ)

Rochester Tech Campus
Rochester, MN

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

Appendix E

Geometric Layouts and Cost Estimates

BADGER HILLS DR. NW

41ST ST. NW

CITY PROJECT

37TH ST. NW

W. CIRCLE DR. NW

VALLEYHIGH RD. NW

WATSON AVE.

N

200 0 500

scale feet

SEH	178983	**37TH ST. AREA IMPROVEMENTS W. CIRCLE DR./41ST ST. & VALLEYHIGH RD. INTERSECTION IMPROVEMENTS**	**FIGURE No. 1**
	DATE: 4/4/2025		

11:33:30 AM 4/4/2025 shotchkin

X:\FJN\RGRA\178983\4-prelim-dsgn-rpts\43-prelim-dsgn\CP178983_gm.dgn Figure 37th

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SEH	178983 DATE: 4/7/2025	**US 52/63 & 41ST ST. NW INTERCHANGE IMPROVEMENTS**	**FIGURE No. 2**

12:27:51 PM 4/7/2025 shotchkin

X:\FJV\IRGRA\178983\4-prelim-dsgn-rpts\43-prelim-dsgn\CP178983_gm.dgn figure US52_41st

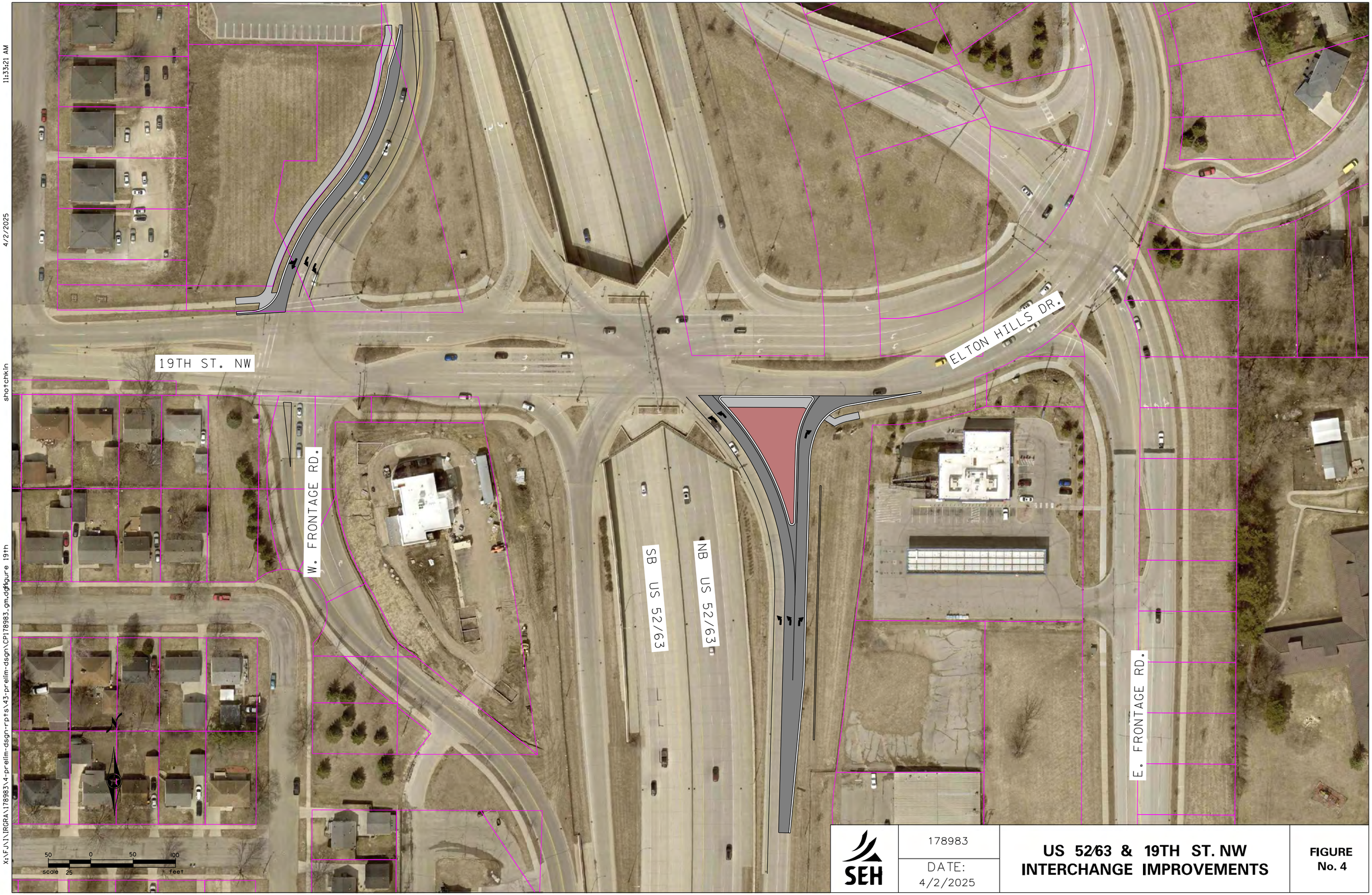
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SEH	178983 DATE: 4/4/2025	**US 52/63 & 37TH ST. NW INTERCHANGE IMPROVEMENTS**	**FIGURE No. 3**

11:34:37 AM
4/4/2025
shotchkin
X:\FJN\RGRA\178983\4-prelim-dsgn-rpts\43-prelim-dsgn\CP178983_gm.dgn Figure US52_37th

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11:33:21 AM
4/2/2025
shotchkin
X:\FJV\RGRA\178983\4-prelim-dsgn-rpts\43-prelim-dsgn\CP178983_gm.dgn Figure 19th

SEH	178983 DATE: 4/2/2025	**US 52/63 & 19TH ST. NW INTERCHANGE IMPROVEMENTS**

FIGURE No. 4

Construction Cost Estimate

US-52/63 & 19th St. Dual left

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	0	$ -
4" Concrete Walk	sq ft	$10.00	6,545	$ 65,450
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	1,515	$ 166,650
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	374	$ 14,201
Subgrade Excavation (1)	cu yd	$10.00	2,508	$ 25,085
Common Excavation	cu yd	$10.00	872	$ 8,720
Common Borrow	cu yd	$15.00	1,308	$ 29,429
Select Granular Borrow	cu yd	$25.00	2,508	$ 62,712
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00	1,050	$ 31,500
(a) Subtotal Paving and Grading				**$ 403,747**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 28,262
Private Utilities		3.0%		$ 12,112
Signing, Striping, Traffic Control		4.0%		$ 16,150
Erosion Control and Turf Establishment		3.0%		$ 12,112
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 68,637**
DRAINAGE				
Storm Sewer		25.0%		$ 100,937
(c) Subtotal Drainage				**$ 100,937**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$1,100,000		$ -
Bridge	sqft	$280		$ -
Retaining Wall	sqft	$110	1,800	$ 198,000
Retaining Block Wall	sqft	$70		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00	3	$ 18,000
Signal System	each	$ 300,000.00		$ -
Signal System Modification	each	$ 150,000.00	1	$ 150,000
(d) Subtotal Structural				**$ 366,000**
(a+b+c+d) Subtotal Construction				**$ 939,320**
Roadway Contingency		10.0%		$ 57,332
Structure Contingency		10.0%		$ 36,600
TMP		5.0%		$ 46,966
Mobilization		5.0%		$ 46,966
(e) Subtotal Miscellaneous				**$ 187,864**
(a+b+c+d+e) Total Construction				**$ 1,127,184**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 1,239,903**
Design & Construction Engineering		20.0%		$ 225,437
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 1,465,340**

W. Frontage Rd. / 19th St. Intersection Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	195	$ 21,491
4" Concrete Walk	sq ft	$10.00	1,296	$ 12,960
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	106	$ 4,041
Subgrade Excavation (1)	cu yd	$10.00	346	$ 3,458
Common Excavation	cu yd	$10.00	248	$ 2,481
Common Borrow	cu yd	$15.00	372	$ 8,374
Select Granular Borrow	cu yd	$25.00	346	$ 8,645
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00	410	$ 12,300
(a) Subtotal Paving and Grading				**$ 73,750**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 5,162
Private Utilities		3.0%		$ 2,212
Signing, Striping, Traffic Control		4.0%		$ 2,950
Erosion Control and Turf Establishment		3.0%		$ 2,212
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 12,537**
DRAINAGE				
Storm Sewer		25.0%		$ 18,437
(c) Subtotal Drainage				**$ 18,437**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000		$ -
Bridge Widen	sqft	$350		$ -
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00	2	$ 12,000
Signal System	each	$ 300,000.00		$ -
Signal System Modification	each	$ 150,000.00	1	$ 150,000
(d) Subtotal Structural				**$ 162,000**
(a+b+c+d) Subtotal Construction				**$ 266,725**
Roadway Contingency		10.0%		$ 10,472
Structure Contingency		10.0%		$ 16,200
TMP		5.0%		$ 13,336
Mobilization		5.0%		$ 13,336
(e) Subtotal Miscellaneous				**$ 53,345**
(a+b+c+d+e) Total Construction				**$ 320,070**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 352,077**
Design & Construction Engineering		20.0%		$ 64,014
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 416,091**

Construction Cost Estimate

37th St. Realignment & RAB

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	23,917	$ 2,630,865
4" Concrete Walk	sq ft	$10.00	30,094	$ 300,940
8" Concrete pavement	sq yd	$110.00	377	$ 41,433
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	11,798	$ 448,322
Subgrade Excavation (1)	cu yd	$10.00	38,243	$ 382,435
Common Excavation	cu yd	$10.00	27,529	$ 275,285
Common Borrow	cu yd	$15.00	41,293	$ 929,088
Select Granular Borrow	cu yd	$25.00	38,243	$ 956,087
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00	27,157	$ 814,710
(a) Subtotal Paving and Grading				**$ 6,779,166**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 474,542
Private Utilities		3.0%		$ 203,375
Signing, Striping, Traffic Control		4.0%		$ 271,167
Erosion Control and Turf Establishment		3.0%		$ 203,375
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 1,152,458**
DRAINAGE				
Storm Sewer		25.0%		$ 1,694,791
(c) Subtotal Drainage				**$ 1,694,791**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$500,000	1	$ 500,000
Bridge	sqft	$280		$ -
Retaining Wall	sqft	$110	2,400	$ 264,000
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200	315	$ 693,000
14x10 Precast Concrete Box Culvert End Section	each	$50,000	4	$ 200,000
Lighting	each	$6,000	12	$ 72,000
Interchange Lighting		$480,000		$ -
Landscaping		$20,000	1	$ 20,000
Intersection ADA	each	$ 6,000.00	36	$ 216,000
Signal System	each	$ 300,000.00	1.00	$ 300,000
				$ -
(d) Subtotal Structural				**$ 2,265,000**
(a+b+c+d) Subtotal Construction				**$ 11,891,415**
Roadway Contingency		10.0%		$ 962,642
Structure Contingency		10.0%		$ 226,500
TMP		5.0%		$ 594,571
Mobilization		5.0%		$ 594,571
(e) Subtotal Miscellaneous				**$ 2,378,283**
(a+b+c+d+e) Total Construction				**$ 14,269,698**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 15,696,668**
Design & Construction Engineering		20.0%		$ 2,853,940
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**
Total Estimated Cost				**$ 18,550,608**

US 52/62_37th St. Interchange Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	6,376	$ 701,343
4" Concrete Walk	sq ft	$10.00	23,022	$ 230,220
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	4,488	$ 170,554
Subgrade Excavation (1)	cu yd	$10.00	2,178	$ 21,779
Common Excavation	cu yd	$10.00	9,261	$ 92,607
Common Borrow	cu yd	$15.00	13,891	$ 312,550
Select Granular Borrow	cu yd	$25.00	2,178	$ 54,448
Mill Pavement	sq yd	$4.00	3,021	$ 12,083
Curb and Gutter Design B624	lin ft	$30.00	6,594	$ 197,820
(a) Subtotal Paving and Grading				**$ 1,793,405**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 125,538
Private Utilities		3.0%		$ 53,802
Signing, Striping, Traffic Control		4.0%		$ 71,736
Erosion Control and Turf Establishment		3.0%		$ 53,802
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 304,879**
DRAINAGE				
Storm Sewer		25.0%		$ 448,351
(c) Subtotal Drainage				**$ 448,351**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000	1	$ 800,000
Bridge Widen	sqft	$350	2,194	$ 767,813
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00	20	$ 120,000
Signal System	each	$ 300,000.00	2.00	$ 600,000
Signal System Modification	each	$ 150,000.00		$ -
(d) Subtotal Structural				**$ 2,287,813**
(a+b+c+d) Subtotal Construction				**$ 4,834,447**
Roadway Contingency		10.0%		$ 254,663
Structure Contingency		10.0%		$ 228,781
TMP		5.0%		$ 241,722
Mobilization		5.0%		$ 241,722
(e) Subtotal Miscellaneous				**$ 966,889**
(a+b+c+d+e) Total Construction				**$ 5,801,337**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 6,381,470**
Design & Construction Engineering		20.0%		$ 1,160,267
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**
Total Estimated Cost				**$ 7,541,738**

US 52/62_41st St. Interchange Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	864	$ 95,010
4" Concrete Walk	sq ft	$10.00	3,686	$ 36,860
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	432	$ 16,425
Subgrade Excavation (1)	cu yd	$10.00	1,610	$ 16,101
Common Excavation	cu yd	$10.00	1,009	$ 10,086
Common Borrow	cu yd	$15.00	1,513	$ 34,039
Select Granular Borrow	cu yd	$25.00	1,610	$ 40,252
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00	826	$ 24,780
(a) Subtotal Paving and Grading				**$ 273,553**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 19,149
Private Utilities		3.0%		$ 8,207
Signing, Striping, Traffic Control		4.0%		$ 10,942
Erosion Control and Turf Establishment		3.0%		$ 8,207
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 46,504**
DRAINAGE				
Storm Sewer		25.0%		$ 68,388
(c) Subtotal Drainage				**$ 68,388**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000		$ -
Bridge Widen	sqft	$350		$ -
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00	7	$ 42,000
Signal System	each	$ 300,000.00		$ -
Signal System Modification	each	$ 150,000.00	1	$ 150,000
(d) Subtotal Structural				**$ 192,000**
(a+b+c+d) Subtotal Construction				**$ 580,445**
Roadway Contingency		10.0%		$ 38,844
Structure Contingency		10.0%		$ 19,200
TMP		5.0%		$ 29,022
Mobilization		5.0%		$ 29,022
(e) Subtotal Miscellaneous				**$ 116,089**
(a+b+c+d+e) Total Construction				**$ 696,534**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 766,187**
Design & Construction Engineering		20.0%		$ 139,307
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 905,494**

41st St./W. Circle Dr. Intersection Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	1,619	$ 178,038
4" Concrete Walk	sq ft	$10.00	11,338	$ 113,380
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	1,479	$ 56,198
Subgrade Excavation (1)	cu yd	$10.00	5,700	$ 57,000
Common Excavation	cu yd	$10.00	3,451	$ 34,507
Common Borrow	cu yd	$15.00	5,176	$ 116,463
Select Granular Borrow	cu yd	$25.00	5,700	$ 142,501
Mill Pavement	sq yd	$4.00	4,930	$ 19,719
Curb and Gutter Design B624	lin ft	$30.00	2,326	$ 69,780
(a) Subtotal Paving and Grading				**$ 787,585**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 55,131
Private Utilities		3.0%		$ 23,628
Signing, Striping, Traffic Control		4.0%		$ 31,503
Erosion Control and Turf Establishment		3.0%		$ 23,628
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 133,890**
DRAINAGE				
Storm Sewer		25.0%		$ 196,896
(c) Subtotal Drainage				**$ 196,896**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000		$ -
Bridge Widen	sqft	$350		$ -
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00	6	$ 36,000
Signal System	each	$ 300,000.00		$ -
Signal System Modification	each	$ 150,000.00	1	$ 150,000
(d) Subtotal Structural				**$ 186,000**
(a+b+c+d) Subtotal Construction				**$ 1,304,371**
Roadway Contingency		10.0%		$ 111,837
Structure Contingency		10.0%		$ 18,600
TMP		5.0%		$ 65,219
Mobilization		5.0%		$ 65,219
(e) Subtotal Miscellaneous				**$ 260,874**
(a+b+c+d+e) Total Construction				**$ 1,565,246**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 1,721,770**
Design & Construction Engineering		20.0%		$ 313,049
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 2,034,819**

Construction Cost Estimate

W. Circle Dr. / Valleyhigh Rd. Intersection Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	612	$ 67,317
4" Concrete Walk	sq ft	$10.00	5,145	$ 51,450
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	353	$ 13,420
Subgrade Excavation (1)	cu yd	$10.00	1,483	$ 14,833
Common Excavation	cu yd	$10.00	824	$ 8,241
Common Borrow	cu yd	$15.00	1,236	$ 27,812
Select Granular Borrow	cu yd	$25.00	1,483	$ 37,083
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00	1,448	$ 43,440
(a) Subtotal Paving and Grading				**$ 263,595**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 18,452
Private Utilities		3.0%		$ 7,908
Signing, Striping, Traffic Control		4.0%		$ 10,544
Erosion Control and Turf Establishment		3.0%		$ 7,908
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 44,811**
DRAINAGE				
Storm Sewer		25.0%		$ 65,899
(c) Subtotal Drainage				**$ 65,899**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000		$ -
Bridge Widen	sqft	$350		$ -
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00		$ -
Signal System	each	$ 300,000.00		$ -
Signal System Modification	each	$ 150,000.00	1	$ 150,000
(d) Subtotal Structural				**$ 150,000**
(a+b+c+d) Subtotal Construction				**$ 524,305**
Roadway Contingency		10.0%		$ 37,430
Structure Contingency		10.0%		$ 15,000
TMP		5.0%		$ 26,215
Mobilization		5.0%		$ 26,215
(e) Subtotal Miscellaneous				**$ 104,861**
(a+b+c+d+e) Total Construction				**$ 629,166**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 692,082**
Design & Construction Engineering		20.0%		$ 125,833
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 817,916**

Construction Cost Estimate

Watson Ave / Valleyhigh Dr. Intersection Improvements

Item Description	Units	Unit Cost	Quantity	Total
PAVING AND GRADING (P & G) COSTS				
Bituminous Pavement (1)	ton	$110.00	989	$ 108,763
4" Concrete Walk	sq ft	$10.00	0	$ -
8" Concrete pavement	sq yd	$110.00	0	$ -
Concrete pavement	sq yd	$110.00	0	$ -
Class 2 Aggregate Shoulder (1)	cu yd	$60.00	0	$ -
Class 6 Aggregate Base (1)	cu yd	$38.00	417	$ 15,833
Subgrade Excavation (1)	cu yd	$10.00	1,750	$ 17,500
Common Excavation	cu yd	$10.00	972	$ 9,722
Common Borrow	cu yd	$15.00	1,458	$ 32,813
Select Granular Borrow	cu yd	$25.00	1,750	$ 43,750
Mill Pavement	sq yd	$4.00	0	$ -
Curb and Gutter Design B624	lin ft	$30.00		$ -
(a) Subtotal Paving and Grading				**$ 228,381**
UTILITIES, REMOVALS, DRAINAGE, ETC.				
Removals/Clear and Grub		7.0%		$ 15,987
Private Utilities		3.0%		$ 6,851
Signing, Striping, Traffic Control		4.0%		$ 9,135
Erosion Control and Turf Establishment		3.0%		$ 6,851
(b) Subtotal Utilities, Removals, Drainage, Etc.				**$ 38,825**
DRAINAGE				
Storm Sewer		25.0%		$ 57,095
(c) Subtotal Drainage				**$ 57,095**
STRUCTURES/SIGNALS/MISC. COST				
Bridge removal	sqft	$25		$ -
Bridge rehab	lump sum	$800,000		$ -
Bridge Widen	sqft	$350		$ -
Retaining Wall	sqft	$110		$ -
Retaining Block Wall	sqft	$70		$ -
14x10 Precast Concrete Box Culvert	lin ft	$2,200		$ -
14x10 Precast Concrete Box Culvert End Section	each	$50,000		$ -
Lighting	each	$6,000		$ -
Interchange Lighting		$480,000		$ -
Landscaping		$20,000		$ -
Intersection ADA	each	$ 6,000.00		$ -
Signal System	each	$ 300,000.00	1.00	$ 300,000
Signal System Modification	each	$ 150,000.00		$ -
(d) Subtotal Structural				**$ 300,000**
(a+b+c+d) Subtotal Construction				**$ 624,300**
Roadway Contingency		10.0%		$ 32,430
Structure Contingency		10.0%		$ 30,000
TMP		5.0%		$ 31,215
Mobilization		5.0%		$ 31,215
(e) Subtotal Miscellaneous				**$ 124,860**
(a+b+c+d+e) Total Construction				**$ 749,160**
Inflation Adjusted Construction Cost for 2027 (1.10 factor)				**$ 824,077**
Design & Construction Engineering		20.0%		$ 149,832
RW Cost				
Total RW	lump sum placeholder	$825,000		$ -
Total RW				**$ -**

Total Estimated Cost	**$ 973,909**

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Appendix G

Geotechnical Borings

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