

12-01-2022 Posting Date
SUM-Wyoga Lake Road
PID No. 116742
City of Cuyahoga Falls
Response Due Date: 12-22-22

Communications Restrictions

Please note the following policy concerning communication between Consultants and the City of Cuyahoga Falls during the announcement and selection process:

During the time period between advertisement and the announcement of final consultant selection, communication with consultants (or their agents) shall be limited as follows:

Communications which are strictly prohibited:

Any discussions or marketing activities related to this specific project.

Allowable communications include:

Technical or scope of services questions specific to the project or RFP requirements.

Project Description

The City of Cuyahoga Falls is requesting Letters of Interest (LoI) from Consultants for engineering services. The services involve completion of an abbreviated ODOT Project Development Process (PDP) for the reconstruction of Wyoga Lake Road in the City. Staged submittals to ODOT for review will be abbreviated as is typical for LPA-Let projects such as this one. The improvements are anticipated to include the widening and replacement of pavement from E. Steels Corners Road to Seasons Road. Services include construction detailed drawings involving pavement replacement, sidewalks and ramps where needed, signage, pavement markings, light poles, and traffic signals including interconnect and pre-emption. This project will be an LPA Let project. Improvements will be in accordance with recommendations presented in the attached traffic study from October 2021 for this corridor, and will also include considerations for pedestrian and bicycle facilities.

Estimated Construction Cost: \$7,250,000.00

Prequalification Requirements

Prequalification requirements for this agreement are listed below. For all prequalification categories other than Cost Accounting – Unlimited the requirement may be met by the prime consultant or a subconsultant.

Also, please note that only individuals (not firms) are prequalified for right of way acquisition and construction inspection. In instances where prequalification for these services is required, a prequalified individual, either employed by the prime consultant or a subconsultant, must be named in order to meet the requirement.

For agreements that require prequalification in Cost Accounting – Unlimited the prime consultant and **all subconsultants that provide engineering and design related services**

must be prequalified in this category. Engineering and Design Related Services are defined as follows:

Program management, construction management, feasibility studies, preliminary engineering, design engineering, surveying, mapping, or architectural related services with respect to a highway construction project subject to 23 U.S.C. 112(a) as defined in 23 U.S.C 112(b)(2)(A); and

Professional services of an architectural or engineering nature, as defined by State law (ORC 5526), which are required to or may logically or justifiably be performed or approved by a person licensed, registered, or certified to provide the services with respect to a highway construction project to 23 U.S.C. 112(a) and defined in 40 U.S.C. 1102(2).

DESIGN SERVICES:

Complex Roadway Design; Complex Right of Way Plan Development; Title Research; Subsurface Utility Engineering; Geotechnical Engineering Services; Geotechnical Testing Laboratory; Geotechnical Field Exploration Services; Geotechnical Drilling Inspection Services; Traffic Signal System Design; Limited Highway Lighting Design

ENVIRONMENTAL SERVICES:

Environmental Document Preparation - CE; Environmental Document Preparation - Section 4(f); Ecological Surveys; Waterway Permits; Air Quality Analyses; Noise Analyses and Abatement Design; Archaeological Investigations; History/Architectural Investigations; ESA Screening, Phase I ESA and Phase II ESA

COST ACCOUNTING SYSTEM

Unlimited (Prime Consultant Only)

Selection Subfactors

There are no selection subfactors for this project.

Contract Type and Payment Method

This contract will be administrated by the City, and the contract type and payment method will be determined during the scope of services and negotiation process.

Estimated Date of Authorization

It is anticipated that the selected Consultant will be authorized to proceed by January 2023.

Completion Schedule

It is anticipated that City of Cuyahoga Falls will submit PS&E Package to ODOT District 4 by January 1, 2026.

Suspended or Debarred Firms

Firms included on the current Federal list of firms suspended or debarred are not eligible for selection.

Terms and Conditions

The City of Cuyahoga Falls terms and conditions will be included in all agreements selected under this request for letters of interest.

Compliance with Title VI of the Civil Rights Act of 1964

The City of Cuyahoga Falls, in accordance with Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, all bidders including disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age, disability, low-income status, or limited English proficiency in consideration for an award.

Selection Procedures

The LPA will directly select a consultant based on the Letter of Interest (LoI). The requirements for the LoI and the Programmatic Consultant Selection Rating Form that will be used to select the consultant are shown below.

Firms interested in being considered for selection should respond by submitting Eight (8) copies of the Letter of Interest to the following address **by 4:30 PM on the response due date** listed above. Alternatively, an electronic version may be submitted via email to the City Engineer, Tony Demasi, at demasitv@cityofcf.com. The electronic version shall be a PDF attachment and follow the same guidelines as the hard copy requirements. It is the responsibility of the consultant to follow up after electronic submission, prior to the deadline, to verify the email and the attachments were received. (Main Office: 330-971-8180, or demasitv@cityofcf.com)

Tony Demasi, City Engineer
City of Cuyahoga Falls
2310 Second Street
Cuyahoga Falls, Ohio 44223

Responses received after 4:30 PM on the response due date will not be considered.

Scope of Services

The Scope of Services document is included below.

Requirements for Letters of Interest, Programmatic Selection Process

- A. Instructions for Preparing and Submitting a Letter of Interest
 1. Provide the information requested in the Letter of Interest Content (Item B below), in the same order listed, in a letter signed by an officer of the firm. Do not

send additional forms, resumes, brochures, or other material.

2. Letters of Interest shall be limited to ten (10) 8½" x 11" single sided pages plus two (2) pages for the Project Approach (Item B.5 below).
3. Please adhere to the following requirements in preparing and binding letters of interest:
 - a. Please use a minimum font size of 12-point and maintain margins of 1" on all four sides.
 - b. Page numbers must be centered at the bottom of each page.
 - c. Use 8½" x 11" paper only.
 - d. Bind letters of interest by stapling at the upper left hand corner only. Do not utilize any other binding system.
 - e. Do not provide tabbed inserts or other features that may interfere with machine copying.

B. Letter of Interest Content

1. List the types of services for which your firm is currently prequalified by the Ohio Department of Transportation.
2. List significant subconsultants, their current prequalification categories and the percentage of work to be performed by each subconsultant.
3. List the Project Manager and other key staff members, including key subconsultant staff. Include project engineers for important disciplines and staff members that will be responsible for the work, and the project responsibility of each.

Address the experience of the key staff members on similar projects, and the staff qualifications relative to the selection subfactors noted.
4. Describe the capacity of your staff and their ability to perform the work in a timely manner, relative to present workload, and the availability of the assigned staff.
5. Provide a description of your Project Approach, not to exceed two pages. Confirm that the firm has visited the site and address your firm's: 1) Technical approach; 2) Understanding of the project; 3) Qualifications for the project; 4) Knowledge and experience concerning relevant ODOT and local standards, procedures and guidance documents; 5) Innovative ideas; 6) Project specific plan for ensuring increased quality, reduced project delivery time and reduced project costs.

Items 1 thru 4 must be included within the 10-page body of the Lol. Remaining space within the ten (10) pages may be utilized to provide personnel resumes or additional information concerning general qualifications.

Consultant Selection Rating Form
for
Programmatic Selections

Project:
PID:
Project Type: _____
District:
Selection Committee Members:

Firm Name:

Category	Total Value	Scoring Criteria	Score
Management & Team			
Project Manager	10	See Note 1, Exhibit 1	
Strength/Experience of Assigned Staff including Subconsultants	25	See Note 2, Exhibit 1	
Firm's Current Workload/ Availability of Personnel	10	See Note 4, Exhibit 1	
Consultant's Past Performance	30	See Note 3, Exhibit 1	
Project Approach	25		
Total	100		

If Applicable: Adequate good faith efforts made to meet DBE goal Y/N

Exhibit 1 - Consultant Selection Rating Form Notes

1. The proposed project manager for each consultant shall be ranked, with the highest ranked project manager receiving the greatest number of points, and lower ranked project managers receiving commensurately lower scores. The rankings and scores should be based on each project manager's experience on similar projects and past performance for the LPA and other agencies. The selection committee may contact ODOT and outside agencies if necessary. Any subfactors identified should be weighed heavily in the differential scoring.

Differential scoring should consider the relative importance of the project manager's role in the success of a given project. The project manager's role in a simple project may be less important than for a complex project, and differential scoring should reflect this, with higher differentials assigned to projects that require a larger role for the project manager.

2. The experience and strength of the assigned staff, including subconsultant staff, should be ranked and scored as noted for Number 1 above, with higher differential scores assigned on more difficult projects. Any subfactors identified in the project notification should be weighed heavily in the differential scoring.

As above, other agencies may be contacted.

3. The consultants' past performance on similar projects shall be ranked and scored on a relative, differential scoring type basis, with the highest ranked consultant receiving a commensurately greater number of points. The selection team should consider ODOT CES performance ratings if available, and consult other agencies as appropriate. The use of CES ratings shall place emphasis on the specific type of services requested.

The differential scoring should consider the complexity of the project and any subfactors identified in the project notification.

4. The consultant's workload and availability of qualified personnel, equipment and facilities shall be ranked and scored on a relative, differential scoring type basis. The scoring shall consider quantifiable concerns regarding the ability of a firm (or firms) rated higher in other categories to complete the work with staff members named in the letter of interest.

Scope of Services

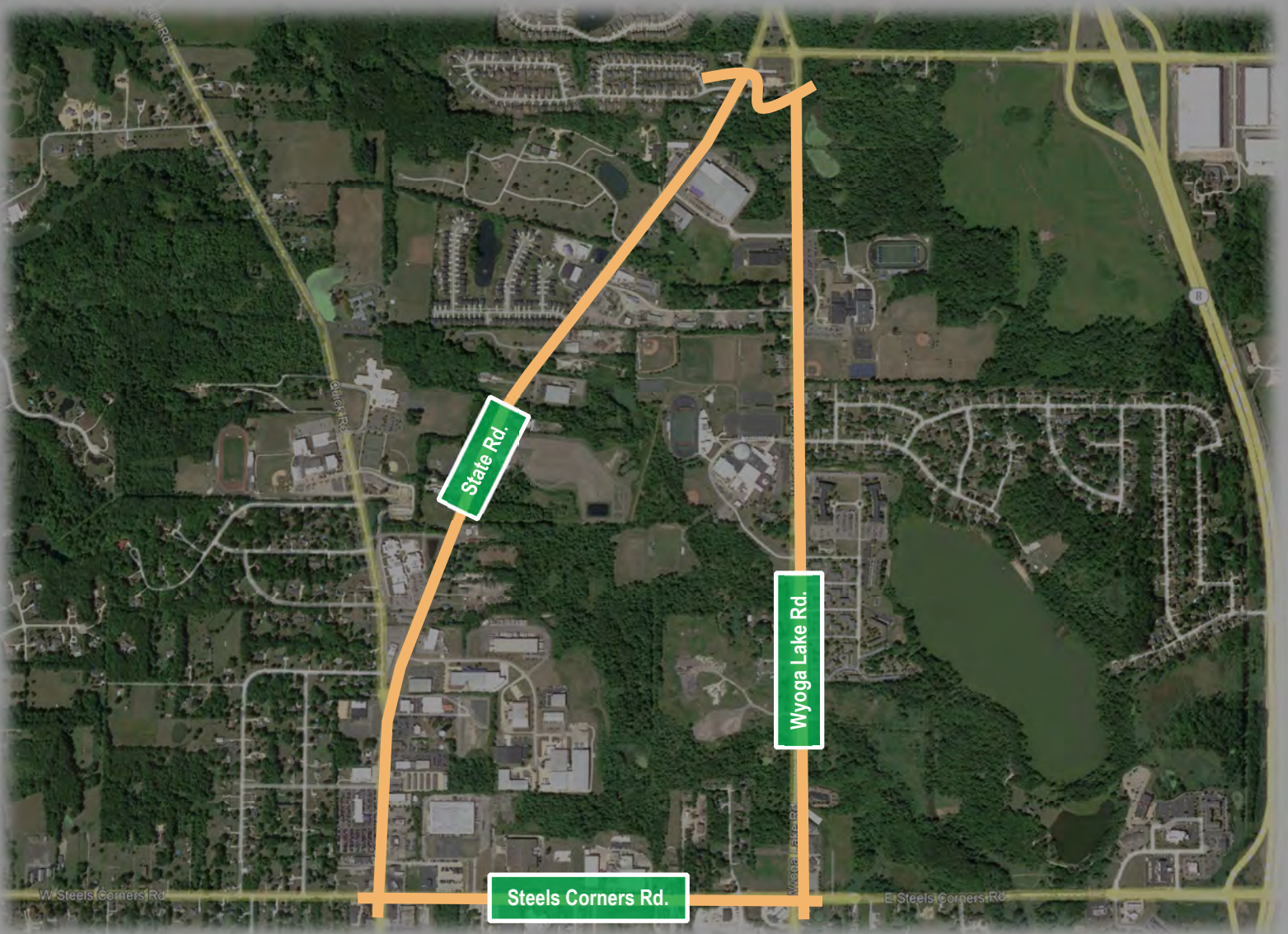
This project includes widening Wyoga Lake Road (CR 101) between E. Steels Corners Road (CR 100) and Seasons Road (CR 145). The project will be constructed based on the recommendations in the “Large Triangle – Transportation Study” completed by Prime AE in October, 2021. Widening will occur by constructing a center two way left turn lane between E. Steels Corners Road and Seasons Road, approximately 1.5 miles. In addition to the two way left turn lane, traffic signals will be reconstructed and upgraded at the Wyoga Lake Road and E. Steels Corners Road intersection. A warranted new signal will be constructed at Wyoga Lake Boulevard. A 10’ wide multi-use path will be built on the east side of Wyoga Lake Road from E. Steels Corners Road to Seasons Road.

The road is classified as a Major Collector and has an existing Right of Way width of 60-feet. The existing road has graded shoulders and limited underground storm sewer.

The Wyoga Lake Road corridor (between E. Steels Corners Road and Seasons Road) in the City of Cuyahoga Falls has an ADT of approximately 4,300 vehicles. This project proposes to eliminate the operational, safety and congestion deficiencies identified in the October 2021 traffic study by adding a center two-way left turn lane to provide turning traffic a way to exit the travel lane to allow thru motorists to continue traveling with no delay.

Current project schedule

Initial Project Scope Complete	02/01/2023
Environmental Document Approved	07/01/2024
District R/W Certification	01/01/2026
Local Let PS&E Package to District	01/01/2026
Plan Package Received in C.O.	01/01/2026
Sale	04/01/2026
Award	05/01/2026
Estimated Begin Construction	05/01/2026
Estimate End construction	11/01/2027



The Large Triangle – Transportation Study

State Road, Steels Corners Road & Wyoga Lake Road

City of Cuyahoga Falls, Ohio

Prepared By:



OCTOBER 2021

The Large Triangle – Transportation Study

State Road, Steels Corners Road & Wyoga Lake Road

City of Cuyahoga Falls, Summit County, Ohio

Prepared For:



City of Cuyahoga Falls, Ohio

October 2021

Prepared By:



Eric William Smith, PE, PTOE
Registration No. 58426
Certification No. 015



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Executive Summary

PRIME AE Group (PRIME) was selected by the City of Cuyahoga Falls to perform a regional transportation study in the northernmost section of the city loosely coined as “The Large Triangle” which is comprised of State Road, Steels Corners Road, and Wyoga Lake Road. Over the past decade several housing and other developments have been constructed, in addition to the existing various public and private schools, which have resulted in an increased amount of traffic and overall congestion in the area. As the region is anticipated to further develop in the coming years, the goal of the study is to assess present and future conditions and identify improvements to the transportation facilities that may be necessary to accommodate future growth.

Study Approach

This report will be organized in a fashion to primarily address the study area findings and any recommended improvements to accommodate existing and future traffic demand, although a section will be devoted to Petros Development’s mixed-use project on Wyoga Lake Road. This study conforms with generally accepted traffic engineering study criteria and the [State Highway Access Management Manual \(SHAMM\)](#). Additionally, this scope has been approved by the City of Cuyahoga Falls.

Findings

Several noteworthy results were identified by this study. Below is a discussion of each by their respective corridor.

State Road

The existing conditions along State Road can be summarized by dividing the corridor into two sections: State Road north of Quick Road and State Road from Quick Road south. North of Quick Road, State Road operates as a two-lane road with access to minor business entrances and housing developments and has a PCR of 64. Existing capacity analysis demonstrates that service levels are currently acceptable, although may drop to unacceptable if future volumes materialize. There are various turn lanes warranted in both scenarios. The existing capacity analysis did not dictate the need for traffic signal warrant analysis at any of these locations. There also did not appear to be any crash data trends in this section that would be unordinary for the given conditions.

State Road from Quick Road to Steels Corners Road widens to a three-lane section with a significantly higher driveway density, curb, and sidewalks and a Good PCR of 72. The existing capacity analysis demonstrates that the intersections operate acceptably except at the unorthodox intersection of State Road, Quick Road, and the Audi dealership driveway entrances. In this case, failing levels of service are experienced on several approaches in both the AM and School Peak periods. Given the failing levels of service, a traffic signal warrant analysis was conducted at both parts of this intersection. No signal warrant was met at either location. There are not any significant crash trends worth noting as well.

Steels Corners Road

The existing conditions along Steels Corners Road were found to be acceptable and operating adequately. As these intersections are all two-way stop controlled, virtually none of them experience undue minor street delay in any of the study scenarios. The capacity on this corridor is also anticipated to function sufficiently into the design year. However, the analysis found that left turn lanes are warranted in both existing and design year scenarios at all five study area intersections. Although the warrants are satisfied, the peak hour left turning movements at each intersection are minimal due to each driveway/road either serving light industrial uses or small residential areas. Traffic signal warrant analyses were not necessary at any locations on this corridor. The most significant crash type recorded over the last three years were rear ends, which is not uncommon on a road with a moderate driveway density and traffic volumes. This segment of Steels Corners Road has an Excellent PCR of 93.



Wyoga Lake Road

Although Wyoga Lake Road services several residential areas, the primary drivers of traffic on this corridor are for the Walsh Jesuit and CVCA High Schools. Because of this, the traffic volumes and congestion are not consistent throughout the day but concentrated over several hours in the morning and afternoon. These factors result in poor levels of service for some minor street traffic as every intersection along Wyoga Lake Road is two-way stop controlled. The failing levels of service were found to occur in two locations: at the main entrance to Walsh Jesuit High School across from Wyoga Lake Boulevard, and at the south entrance to Walsh across from Chateau Drive. As such, traffic signal warrant analyses were conducted at both locations. Warrant 3 was found to be justified at the Walsh main entrance / Wyoga Lake Boulevard intersection. Crash data also reveals an upward trend in angle collisions over a 12-month period from 2019 to 2020 at this location. Further, given the fact that schools are known to be high peak hour generators, left and right turning volumes into each of the high schools are relatively high. This resulted in turn lanes being warranted at every study area intersection which comprises a significant length of the entire Wyoga Lake Road corridor. This segment of Wyoga Lake Road also has the lowest PCR in the study area, rated as Fair (53).

Conclusions and Recommendations

PRIME was selected by the City of Cuyahoga Falls to perform a regional transportation study in the northernmost area of the city. The goal of this larger study is intended to evaluate the existing transportation system in the study area including traffic patterns, existing geometry, traffic capacity, crash data, as well as any improvements necessary to mitigate the issues identified. Based on the above summary of findings, the following recommendations are provided.

State Road

- Continue to monitor the intersection of State Road and Quick Road for changes in traffic patterns or increases in volumes/crashes related to the issues determined in this study.
- Resurface State Road from the pavement joint at Quick Road north to Boulder Boulevard.
- Periodically monitor State Road for any significant increase in peak hour turn volumes, rear end crashes or undue delay so to reassess the need to construct the warranted turn lanes.

Steels Corners Road

- Periodically monitor Steels Corners Road for any significant increase in peak hour left turn volumes, rear end crashes or undue delay so to reassess the need to construct the warranted turn lanes.

Wyoga Lake Road

- Construct a three-lane section from Steels Corners Road to Seasons Road, allowing for adequate left turn lane storage into all studied intersections and a two-way left turn lane along the rest of the corridor.
- Construct drop right turn lanes at warranted locations as part of the widening project.
- Install a traffic signal at the intersection of Wyoga Lake Road and the Walsh High School main entrance.
- Continue the SUP along the east side of the roadway to the northern limits of the project.



Introduction

PRIME AE Group (PRIME) was selected by the City of Cuyahoga Falls to perform a regional transportation study in the northernmost section of the city loosely coined as “The Large Triangle” which is comprised of State Road, Steels Corners Road, and Wyoga Lake Road. Over the past decade several housing and other developments have been constructed, in addition to the existing various public and private schools, which have resulted in an increased amount of traffic and overall congestion in the area. As the region is anticipated to further develop in the coming years, the goal of the study is to assess present and future conditions and identify improvements to the transportation facilities that may be necessary to accommodate future growth. This larger study was performed in conjunction with a similar study for the city titled “The Triangle – Traffic Study”, completed in July of 2021, which analyzed a more local issue at the intersection of State Road, Seasons Road, and Wyoga Lake Road.

Recently, Petros Development, LLC has proposed construction of a mixed-used development on the west side of Wyoga Lake Road approximately 1,000 feet south of Walsh Jesuit High School. Petros Development has partnered with the City of Cuyahoga Falls to conduct both this and the previous study in July to aid in identifying issues within the study area and any potential improvements that may be recommended. This study won’t explicitly demonstrate the impact of the development on the study area, but more so account for the known traffic generated by the site and provide increased precision in traffic volume forecasting.

This report will be organized in a fashion to primarily address the study area findings and any recommended improvements to accommodate existing and future traffic demand, although a section will be devoted to the known mixed-use development mentioned previously. This study conforms with generally accepted traffic engineering study criteria and the State Highway Access Management Manual (SHAMM)¹. Additionally, this scope has been approved by the City of Cuyahoga Falls.

Study Area and Site Location

The study area is bound by three interconnected corridors: State Road (also known as Akron-Cleveland Road), Steels Corners Road, and Wyoga Lake Road. For clarity purposes, the study and analysis will be broken down into each respective corridor. As the intersections of State Road, Wyoga Lake Road, and Seasons Road were addressed in a previous study, they will not be considered explicitly in this report. The mixed-use development proposed by Petros Development is located on the west side of Wyoga Lake Road, approximately 1,000 feet south of Chateau Drive. The site is anticipated to have two access points to Wyoga Lake Road with full access at each location. See Table 1 below for a list of all intersections included in the study area.

Table 1 - Study Area Intersections

State Road &	Steels Corners Road &	Wyoga Lake Road &
Boulder Blvd.	Koir Dr. / Americhem Dr.	CVCA North Dr. / Falls Commerce Pkwy.
Falls Commerce Pkwy.	Lippman Pkwy. / Struktol West Dr.	Falls Commerce Pkwy.
Buckeye Sports Dr.	Struktol East Dr.	CVCA Center Dr.
Salt Creek Run	Bonnett Dr.	CVCA South Dr.
Woodridge North Dr.		Walsh North Dr.
Woodridge South Dr.		Walsh Center Dr. / Wyoga Lake Blvd.
Falls Industrial Pkwy.		Walsh South Dr. / Chateau Dr.
Quick Rd. Ext. / Audi North Dr.		Wyoga Lake Townhomes Dr.
Quick Rd. / Audi South Dr.		Princeton Place North Dr.
Kimberlyn Dr.		Princeton Place South Dr.

¹ State Highway Access Management Manual, ODOT, Office of Roadway Engineering. January 2020.



Existing Conditions

Understanding both the geometric and traffic characteristics of a roadway is critical to evaluating existing and future traffic operations. This section contains a discussion of existing roadway conditions and operational efficiency.

Existing Roadway Function and Geometrics

After the annexation of Northampton Township into the City of Cuyahoga Falls in 1986, the region surrounding the study area began to grow significantly with the addition of residential, commercial, and even industrial development as seen along Steels Corners Road. The roadway network in the study area also effectively services three major school systems, which results in heavy peak hour traffic demands during the beginning and end of the school day. Given that these road systems are generally two-lane roads, the heavy through traffic in combination with turning vehicle demands creates friction and congestion throughout the study area. Below is a description further describing each corridor within the study area. An existing conditions diagram detailing current roadway and traffic characteristics can be found in Appendix A.

State Road

State Road is a two-lane minor arterial within the study area which carries an average daily traffic (ADT) volume of 8,500 vehicles north of Quick Road and 13,700 vehicles south of Quick Road between Steels Corners Road. The road is essentially flat and mostly straight within the study area. According to the 2019-20210 Pavement Condition Ratings (PCR) collected by the Akron Metropolitan Areawide Transportation Study (AMATS), the pavement condition was rated Good (72) between Steels Corners Road and Quick Road while the pavement north of Quick Road was rated Fair (64). The posted speed limit is 35 mph within the city limits and the existing right-of-way is approximately 80 feet. Worthy of noting is the intersection of Quick Road and State Road. Quick Road approaches State Road at a significant skew, resulting in an unorthodox geometric configuration.

Steels Corners Road

Steels Corners Road is a two-lane minor arterial within the study area carrying an ADT volume of approximately 10,300 vehicles per day. Steels Corners Road runs east/west and is generally flat and straight within the study area with a posted speed limit of 45 miles per hour. According to the same 2019-2020 AMATS PCR report, the pavement in this segment of Steels Corners Road was rated Excellent (93). Just east of the study area, Steels Corners Road interchanges with S.R. 8 and functions as a service road for access to the cities of Hudson and Stow. Steels Corners Road is also a major carrier of traffic to and from Blossom Music Center which is located just west of the study area. The existing right-of-way is generally about 60 feet.

Wyoga Lake Road

Wyoga Lake Road is classified as a major collector and runs north-south from downtown Cuyahoga Falls (via Oakwood Road) and ends in the study area. Carrying an ADT of approximately 4,300 vehicles per day, Wyoga Lake Road provides access to many destinations in Cuyahoga Falls including Walsh Jesuit high school, Cuyahoga Valley Christian Academy (CVCA), residential and commercial uses, and downtown Cuyahoga Falls in general as it essentially becomes Oakwood Drive. Wyoga Lake Road has a posted speed limit of 35 mph, and the pavement condition was rated Fair (53) by AMATS' 2019-2020 PCR report. The existing right-of-way is approximately 60 feet. There currently exists a sag curve on Wyoga Lake Road between Seasons Road and Falls Commerce Parkway for approximately 500 feet that is prone to flooding due to its proximity to a pond/wetland area. Also noteworthy is the existing shared use path (SUP) on the east side of Wyoga Lake Road from Steels Corners Road to the various residential communities near Hardman Drive.



Existing Traffic Control

Traffic control within the study area is mainly achieved by minor street, stop controlled intersections. The only signalized intersections that currently exist in the area are at the junction along Steels Corners Road at State Road and at Wyoga Lake Road. Various existing signage is present throughout the study area dictating school zones, speed limits, approach lane configurations, etc. See Appendix A for the existing conditions diagrams.

Crash Data

Traffic crash data for the study was gathered through the ODOT Transportation Information Management System (TIMS) for the most recent three years of complete data (2018-2020). A summary of the crash data has been broken down and aggregated by the corresponding corridor and is demonstrated in the Table 2 below.

Table 2 - Study Area Crash Summary (2018-2020)

Study Area Corridor	TOTAL CRASHES	SEVERITY		CRASH TYPE		
		Inj./Fat.	PDO	Angle	Rear End	Other
State Road	79	18	61	12	41	26
Steels Corners Road	59	12	47	4	43	12
Wyoga Lake Road	60	10	50	18	27	15
Total	198	40	158	34	111	53

As indicated, there were 198 total crashes within the study area over the analysis period. Of the total crashes, 20% were classified as some level of injury crash (there were 0 fatalities) with the other 80% being property damage only (PDO). Throughout the entire study area, the most predominant crash type recorded is a rear end collision. This makes up approximately 50% of total crashes. Angle crashes were the next highest single crash category comprising about 20% of the total crash count. The remaining 30% can be attributed to varying crash types such as sideswipes, fixed objects, animal crashes, etc. One piece of data that is worth highlighting is the relative percent of angle collisions along Wyoga Lake Road when compared to the other corridors. Angle collisions make up 30% of total crashes along Wyoga Lake Road, which is 2-4 times higher than that of State Road and Steels Corners Road (15% and 7% respectively). Appendix B contains the entire crash data obtained from TIMS.

Traffic Counts

Prior to study authorization, PRIME developed a list of intersections to include in the study along each of the three corridors. Turning movement counts were conducted by PRIME via Miovision Scout data collection units at all study area intersections. A Design Hourly Volume (DHV) factor was applied to the peak hour count data based on the functional classification, day, and month of the count. Given the span of time required to collect all traffic counts, varying DHV factors were applied across the study area. See the volume adjustment calculation spreadsheets in Appendix C for specific locations and their respective factors. The factored existing traffic volumes establish the Existing and Design Year Traffic for use in analysis. Based on analysis of the count data and surrounding land uses, three separate periods were selected to be studied: AM Peak, School Peak, and PM Peak. The overall AM peak hour was determined to occur from 7:15 AM to 8:15 AM, the overall School Peak from 2:30 PM to 3:30 PM, and the overall PM Peak from 4:45 PM to 5:45 PM. Appendix C contains copies of all turning movement count data and design volume calculations.

When the traffic counts were conducted, the Ohio Department of Transportation (ODOT) was reconstructing sections of State Route 8. The southbound State Route 303 ramps and the southbound exit ramp to Steels Corners Road were closed at the time of the counts. PRIME examined historic traffic count data and made adjustments to the counts as necessary to establish a reasonable baseline of existing traffic conditions.



Traffic Capacity

The engineering industry uses a rating system referred to as Level of Service (LOS) to describe traffic operational efficiency. These service conditions are defined by the letters “A” through “F”, with “A” being excellent traffic conditions and very little delay while “F” equates to congested, unstable traffic flow with long delay. In this study, Trafficware’s Synchro 11² and SimTraffic software was used to evaluate the ability of the study area intersections to process the traffic demand which utilizes and is supported by the capacity analysis techniques contained in The Highway Capacity Manual³.

Signalized Intersection Capacity

At signalized intersections, right-of-way to traffic is allocated by the traffic signal. Essentially, intersection capacity is measured by the number and types of lanes, and the amount of “green time” allocated to those lanes. LOS can be calculated for individual lanes, individual intersections, and the intersection as a whole. Control delay and volume-to-capacity ratios are used to establish LOS. Control delay measures the entire delay a motorist is anticipated to experience and includes slow down, stop and start up time.

Unsignalized Intersection Capacity

At STOP controlled intersections, drivers on the stop-controlled approaches are required to select gaps in the major-street flow to execute crossing or turning maneuvers. In the presence of a queue, each driver on the controlled approach must also spend time moving to the front-of-queue position and prepare to evaluate gaps in the major-street flow. Thus, the capacity of the controlled legs is based primarily on three factors: the distribution of gaps in the major-street traffic stream, driver judgment in selecting gaps through which to execute the desired maneuvers, and the follow-up headways required by each driver in a queue.

According to the Highway Capacity Manual, LOS for a Two-Way Stop Control (TWSC) intersection is determined by the computed or measured control delay. For motor vehicles, LOS is determined for each minor-street movement (or shared movement), as well as the major-street left turns, by using the criteria given below. LOS is not defined for the intersection as a whole or for major-street approaches for three primary reasons: (a) major-street through vehicles are assumed to experience zero delay; (b) the disproportionate number of major-street through vehicles at a typical TWSC intersection skews the weighted average of all movements, resulting in a very low overall average delay for all vehicles; and (c) the resulting low delay can mask LOS deficiencies for minor movements. As the Figure 3 indicates, LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.0, regardless of the control delay.

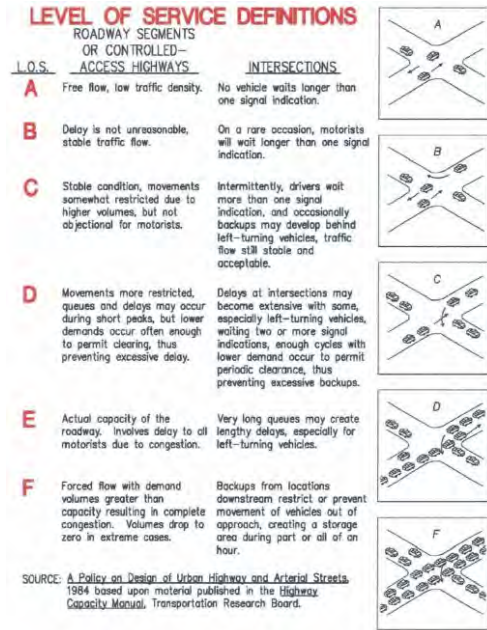


Figure 1 - Level of Service Definitions

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio ^a	
	≤1.0	>1.0
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Note: ^a For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

Figure 2 - Signalized Intersection LOS Criteria

Control Delay (s/veh)	LOS by Volume-to Capacity Ratio	
	v/c ≤ 1.0	v/c > 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: The LOS Criteria apply to each lane on a give approach and to each approach on the minor street. LOS is not calculated for major street approaches or for the intersection as a whole.

Figure 3 - Unsignalized Intersection LOS Criteria

² Synchro plus SimTraffic 11, Signal Timing and Analysis Software, Version 11.0, 2019

³ Highway Capacity Manual, 6th Edition, The national Academy of Sciences, Transportation Research Board, 2016



Existing Capacity Analysis

Capacity analysis was performed for all study area intersections under the existing geometric and traffic conditions. Table 3 demonstrates the existing level of service based on intersection and study period.

Table 3 - Existing Conditions Capacity Analysis

Intersection & Traffic Control		Approach	AM Peak		School Peak		PM Peak	
			2021		2021		2021	
			LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)
Existing Conditions								
Signalized	State Rd. & Steels Corners Rd.	Eastbound	E	55.9	C	33.7	D	35.7
		Westbound	D	33.0	C	33.1	C	28.1
		Northbound	D	48.7	D	39.1	D	39.9
		Southbound	D	40.0	D	50.3	D	46.5
		TOTAL	D	45.6	D	40.4	D	37.9
Signalized	Wyoga Lake Rd. & Steels Corners Rd.	Eastbound	C	25.6	D	35.3	D	35.5
		Westbound	D	40.6	C	31.0	D	36.0
		Northbound	D	45.4	D	36.5	D	39.8
		Southbound	D	45.7	D	51.5	D	42.7
		TOTAL	D	37.9	D	39.1	D	37.8
TWSC	State Rd. & Kimberlyn Dr.	Eastbound	D	31.2	D	27.3	C	18.6
TWSC	State Rd. & Audi South Dr. / Quick Rd.	Westbound	F	68.2	F	93.5	D	26.1
		Eastbound	B	12.8	F	50.9	D	25.6
TWSC	State Rd. & Audi North Dr. / Quick Rd. Ext.	Eastbound	E	42.3	F	53.6	E	35.4
		Westbound	D	26.9	B	12.1	D	28.2
TWSC	State Rd. & Falls Industrial Pkwy.	Westbound	D	32.5	D	28.9	C	22.1
TWSC	State Rd. & Woodridge South Dr.	Eastbound	C	21.0	C	18.5	C	19.0
TWSC	State Rd. & Woodridge North Dr.	Eastbound	C	20.8	D	30.2	C	22.4
TWSC	State Rd. & Salt Creek Run	Eastbound	D	29.7	C	20.6	D	26.8
TWSC	State Rd. & Buckeye Sports Dr.	Eastbound	B	11.5	D	26.0	D	27.9
		Westbound	D	28.4	D	28.2	D	27.6
TWSC	State Rd. & Falls Commerce Pkwy.	Westbound	C	22.5	C	16.9	C	22.8
TWSC	State Rd. & Boulder Blvd.	Eastbound	D	29.6	C	22.5	D	28.4
TWSC	Steels Corners Rd. & Koir Dr. / Americhem Dr.	Northbound	D	26.7	D	25.7	B	13.1
		Southbound	C	20.5	C	20.3	C	21.4
TWSC	Steels Corners Rd. & Lippman Pkwy. / Struktol West Dr.	Northbound	C	20.1	C	16.4	C	23.7
		Southbound	-	-	B	13.1	C	22.1
TWSC	Steels Corners Rd. & Struktol East Dr. / Business Dr.	Southbound	C	20.6	D	28.1	D	32.0
		Northbound	C	19.7	C	21.7	C	23.8
TWSC	Steels Corners Rd. & Bonnett Dr.	Northbound	D	27.6	D	26.3	B	13.7
		Southbound	D	28.4	D	26.8	B	13.0
TWSC	Wyoga Lake Rd. & Townhomes Dr.	Westbound	C	23.6	C	16.8	C	16.7
TWSC	Wyoga Lake Rd. & Walsh South Dr. / Chateau Dr.	Eastbound	D	32.8	C	20.4	C	17.4
		Westbound	F	61.1	D	25.6	D	25.9
TWSC	Wyoga Lake Rd & Walsh Center Dr. / Wyoga Lake Blvd.	Eastbound	F	165.8	E	44.7	C	20.7
		Westbound	F	78.8	E	41.7	C	20.3
TWSC	Wyoga Lake Rd. & Walsh North Dr.	Eastbound	C	23.2	C	21.4	C	15.5
TWSC	Wyoga Lake Rd. & CVCA South Dr.	Westbound	C	23.6	C	19.1	C	19.0
TWSC	Wyoga Lake Rd. & CVCA Center Dr.	Westbound	C	18.3	D	33.4	B	13.4
TWSC	Wyoga Lake Rd. & Falls Commerce Pkwy. / CVCA North Dr.	Eastbound	D	25.3	C	23.8	C	18.0
		Westbound	-	-	C	24.9	C	16.1
TWSC	Wyoga Lake Rd. & Princeton Place North	Eastbound	C	17.6	-	-	C	15.1
TWSC	Wyoga Lake Rd. & Princeton Place South	Eastbound	C	15.5	-	-	B	13.7
Unacceptable		TWSC = Two-Way Stop Control						
Failing		AWSC = All-Way Stop Control						



As indicated in Table 3, several intersections within the study area are currently operating at failing levels of service, mostly during the AM and School Peaks. Currently, virtually the entire study area operates efficiently during the PM Peak. This can also be observed along the Steels Corners Road corridor where none of the six intersections, including the two signalized intersections at either end, ever drop below a LOS “D”. The locations where failing service levels are currently experienced occur at two Walsh Jesuit High School intersections along Wyoga Lake Road and at the Quick Road / Audi driveway intersections along State Road. It can be reasonably assumed that both cases are being driven by heavy peak hour traffic demands generated by the private schools along Wyoga Lake Road and by the Woodridge school system complex near State Road. Appendix D contains a compilation of the Synchro reports detailing the existing conditions capacity analysis at each intersection for each scenario.

Traffic Signal Warrant Analysis

Guidance for the justification of installing traffic control signals can be found in the Ohio Manual of Uniform Traffic Control Devices (OMUTCD)⁴, which is supported by the Ohio Revised Code. Per Chapter 4C titled “Traffic Control Signal Needs Studies”, an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location. This investigation shall include an analysis of factors related to the existing operation and safety at the study location, the potential to improve those conditions, and the applicable factors contained in the following traffic signal warrants. According to Section 402-2 of the Traffic Engineering Manual (TEM)⁵ published by ODOT, raw turning movement count data that is no older than three years should be used for signal warranting purposes. Below is a description and the corresponding criteria for each of the nine signal warrants provided by the OMUTCD.

Warrant 1, Eight-Hour Vehicular Volume

The Eight-Hour Volume warrant is intended for two purposes; either a large volume of intersecting traffic is the principal reason to consider the signal or minor street intersecting traffic suffers excessive delays or conflicts when attempting to enter or cross the major street. To warrant a signal based on these criteria, the engineering study should find that one of the following conditions exist for each of any 8 hours of an average day:

- 1) The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or
- 2) The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C01 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

* If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Warrant 2, Four-Hour Vehicular Volume

The Four-Hour Volume warrant is intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal. The need for a traffic signal shall be considered if the engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-

⁴ Ohio Manual of Uniform Traffic Control Devices, Office of Traffic Engineering, ODOT, 2012 Edition.

⁵ Traffic Engineering Manual, Office of Roadway Engineering, ODOT, 2021.



volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes.

* If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Warrant 3, Peak Hour

The Peak Hour warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street. The need for a traffic signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:

- 1) If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
 - a) The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for one-lane approach; or 5 vehicle-hours for a two-lane approach; and
 - b) The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and
 - c) The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
- 2) The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

* If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.

Warrant 4, Pedestrian Volume

The Pedestrian Volume warrant is intended for applications where major street traffic volume is so heavy that pedestrians experience excessive delay in crossing the major street. The need for the installation of a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:

- 1) For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or
- 2) For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.



* If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-6 may be used in place of Figure 4C-5 to evaluate Criterion 1, and Figure 4C-8 may be used in place of Figure 4C-7 to evaluate Criterion 2.

Warrant 5, School Crossing

The School Crossing warrant is intended to be applied where schoolchildren must cross the major street. The need for a traffic signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of schoolchildren at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period and there are a minimum of 20 schoolchildren during the highest crossing hour.

Warrant 6, Coordinated Signal System

The Coordinated Signal System warrant is applicable in cases where proper platooning of vehicles is necessary at an intersection that may not otherwise warrant a signal. The need for a traffic signal shall be considered if an engineering study finds that one of the following criteria is met:

- 1) On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.
- 2) On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide progressive operation.

* The Coordinated Signal System warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.

Warrant 7, Crash Experience

The Crash Experience warrant is intended for applications where the severity and frequency of crashes are the principal reasons to consider installing a traffic signal. The need for a traffic signal shall be considered if an engineering study finds that all the following criteria are met:

- 1) Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and
- 2) Five or more reported crashes of types susceptible to correction by a traffic signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and
- 3) For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

* If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than



10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Warrant 8, Roadway Network

The Roadway Network warrant might be justified to encourage concentration and organization of traffic flow on a roadway network. The need for a traffic signal shall be considered if an engineering study determines that the common intersection of two or more major routes meets one or both of the following criteria:

- 1) The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or
- 2) The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

A major route as used in this signal warrant shall have at least one of the following characteristics:

- 1) It is part of the street or highway system that serves as the principal roadway network for through traffic flow,
- 2) It includes rural or suburban highways outside, entering, or traversing a city,
- 3) It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Warrant 9, Intersection Near a Grade Crossing

The Intersection Near a Grade Crossing warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the primary reason to consider installing a traffic control signal. The need for a traffic signal shall be considered if an engineering study finds that both of the following criteria are met:

- 1) A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the of the stop line or yield line on the approach; and,
- 2) During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13.



Signal Warrant Results Summary

Due to the large number of study intersections, signal warrants were only analyzed at intersections where levels of service are currently or anticipated to fall below a LOS “D”. For each of those locations, a thorough evaluation of each of the nine signal warrants was performed to determine whether a traffic signal is justified. Table 4 provides a summary of the results for each location and warrant. See Appendix E for detailed information and warrant tables/charts for applicable cases.

Table 4 - Traffic Signal Warrant Analysis Results

The Large Triangle - Signal Warrant Study		Warrants									Signal Warranted?
Corridor	Intersection	1	2	3	4	5	6	7	8	9	
State Road	Quick Rd. / Audi North Dr.	X	X	X	N/A	X	X	X	X	X	NO
	Quick Rd. / Audi South Dr.	X	X	X	N/A	X	X	X	X	X	NO
Wyoga Lake Road	Walsh Center Dr. / Wyoga Lake Blvd.	X	X	✓	N/A	X	X	X	X	X	YES
	Walsh South Dr. / Chateau Dr.	X	X	X	N/A	X	X	X	X	X	NO
✓ : Denotes that the signal is warranted under one of the warrant conditions.											
X: Min. requirements not met.											
N/A: Either non applicable or not evaluated.											

In general, the minimum volume thresholds and other requirements were not met under nearly all circumstances for each of the nine signal warrants at the four analyzed locations. However, Warrant 3, Peak-Hour Warrant, was satisfied at the Walsh High School main entrance drive across from Wyoga lake Boulevard. As stated previously on Page 7, there are two separate criteria that should be evaluated as part of Warrant 3 which is intended to prevent undue minor-street delay. The first is essentially a combination of excessive delay and minimum vehicular volume thresholds. The second relies solely on the data point of major street through traffic versus the higher minor street approach traffic plotted on a graph. The former of the two requirements was satisfied at this location. Based on the existing capacity analysis (shown on Page 5), the eastbound approach experiences 165.8 seconds of average delay per vehicle. The total approach volume in that hour is 152 vehicles. This equates to approximately 7 vehicle-hours of total delay experienced on the two-lane, eastbound approach. Given that the other minimum volume requirements are met, and the total delay exceeds 5 vehicle-hours, Warrant 3 is justified at this location.

Future Conditions Analysis

This chapter summarizes and presents the methodologies used to determine the future traffic volumes, levels of service, traffic signal / turn lane warrant analysis, and crash analysis. A 20-year Design Year (2041) will be assumed in this study and will be compared to an Existing Year of 2021. These forecasts and analyses will serve as the basis for any recommended improvements identified as a result of this study.

Proposed Developments

It is PRIME’s understanding that the City of Cuyahoga Falls has approved the construction of a mixed-use, residential / commercial development titled “Princeton Place”. It will be located on the west side of Wyoga Lake Road approximately 1,000 feet south of Walsh Jesuit High School. According to the overall site plan dated September 14th, 2021, the proposed development will consist of 150 total multifamily housing units on 32 acres with the commercial / office portion of the site on the remaining 5 acres. The developer has proposed two access points onto Wyoga Lake Road. The northern drive will be the primary access point for the commercial development while both the southern and northern drive will serve the residential traffic. A copy of the site plan is included in Appendix F.



Site Traffic Generation

The developer has proposed construction of 150 multifamily housing units. Details of the commercial / office development have not yet been identified. As such, a typical land use assumption for commercially zoned areas of approximately 10,000 square feet (s.f.) per acre was used for trip generation purposes. This resulted in an assumed building square footage of 49,000 s.f. Traffic anticipated to be generated by this site has been calculated using data contained in the Institute of Transportation Engineers (ITE) manual entitled Trip Generation. Specifically, *Land Use Code (LUC) 220, Multifamily Housing (Low Rise) and LUC 710, General Office Building* was used to generate the site trips. As indicated in Table 5, the development is expected to generate an average of 1,623 total weekday trips. Of those total new trips, 142 are anticipated to occur in the AM Peak and 143 in the PM Peak. See Appendix F for all trip generation tables, data, and graphs.

Table 5 - Princeton Place Trip Generation Summary

Trip Description	Land Use Code	Weekday	AM Peak		PM Peak	
			Enter	Exit	Enter	Exit
Multifamily Housing	220	1,093	16	54	53	32
General Office Building	710	530	62	10	9	49
TOTAL	-	1,623	78	64	62	81

Anticipated Site Traffic Distribution

Once trip generation is established, it is necessary to assign those new trips to the adjacent roadway network. The traffic distribution pattern presents, in percentage form, this trip assignment. A variety of procedures can be used to establish this pattern depending on the type and size of development. Given that both parts of this mixed-use development are anticipated to be home-to-work or work-to-home trips, existing traffic patterns can serve as a useful tool along with population centers and major roadway networks to determine trip distribution percentages. By analyzing this pertinent data, PRIME assumed that 60% of the site trips will begin/end to the south of the site and 40% will begin/end to the north site along Wyoga Lake Road. Of these total percentages, it was assumed that 100% of the office trips will begin/end at the north drive (as this is where all the access is expected to be) as well as 55% of the residential trips. The other 45% of the residential trips were assigned to the south drive. This determination was made based upon the percentage of housing units in relative proximity to either drive.

2041 Design Year Traffic

It is commonly appropriate to project existing traffic into a design year prior to adding site-generated traffic to account for normal regional growth. A growth rate for this study was determined in conjunction with the Akron Metropolitan Area Transportation Study (AMATS), the local Metropolitan Planning Organization (MPO) based upon the regional traffic demand model that has been developed and used on major projects within the MPO for decades. Based on that model, PRIME assumed a 0.5% annual growth rate.

Once the growth rate was established, the existing year traffic volumes (2021) could be projected into the design year traffic volumes (2041) by applying the 0.5% annual growth rate over the 20-year period. The existing and future volumes were then used as the basis for the assessment of the anticipated future traffic conditions within the study area. Appendix G contains diagrams for each of the three study periods demonstrating the existing and design year traffic volumes.



Future Conditions Capacity Analysis

Capacity analysis was then performed for the study area intersections under the existing geometric and traffic conditions to determine the anticipated future capacity assuming regional growth and the construction of the mixed-use development on Wyoga Lake Road. Table 6 on Page 13 demonstrates the corresponding level of service based on intersection and study period in comparison to the existing conditions analysis.

Table 6 reveals several noteworthy details about capacity within the study area between the existing and design year scenarios. A breakdown of the analysis for each corridor is explained below. First, in no case were any of the uncontrolled major street left turn movements ever below an LOS “A” and therefore not reported. Both signalized intersections are expected to operate effectively under current timing and phasing conditions in both the existing and design year. Given that all the intersections in the study area are two-way stop controlled (except Steels Corners Road at State Road and Wyoga Lake Road), these results are presented in terms of side street total approach delay and corresponding LOS.

State Road

As expected, the intersection of State Road and Quick Road / car dealership driveways is anticipated to worsen in the design year periods. These problems mainly occur in the AM and School Peak periods however the Quick Road north drive does suffer during the PM Peak as well. It can also be seen that various intersections along the State Road corridor including Falls Industrial Parkway, Salt Creek Run, and Boulder Boulevard are anticipated to drop to service level “E” in the design year.

Steels Corners Road

There are virtually no capacity issues currently or projected to occur along the Steels Corners Road corridor. Generally, levels of service range between “C” and “D”. This is not surprising as the businesses along Steels Corners Road are not high-volume generators and therefore don’t produce enough side street traffic to oversaturate any of the minor street approaches.

Wyoga Lake Road

Similar to State Road, the existing intersections along Wyoga Lake Road which currently experience poor levels of service are expected to get worse into the design year. This includes the Walsh Jesuit Center Driveway at Wyoga Lake Boulevard and the South Driveway at Chateau Drive. As this corridor is mostly driven by school traffic, the issues are predominantly experienced during the AM and School Peak periods. It’s also worth mentioning that the CVCA Center Drive, which serves as the main exit during the School Peak, is anticipated to drop from a low “D” to an “F” in the design year.



Table 6 - Future Conditions Capacity Analysis Summary

Intersection & Traffic Control		Approach	AM Peak				School Peak				PM Peak			
			2021		2041		2021		2041		2021		2041	
			LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)
Existing Conditions														
Signalized	State Rd. & Steels Corners Rd.	Eastbound	E	55.9	F	93.0	C	33.7	D	36.2	D	35.7	D	42.5
		Westbound	D	33.0	D	36.9	C	33.1	D	36.4	C	28.1	C	34.1
		Northbound	D	48.7	D	51.5	D	39.1	D	45.1	D	39.9	D	41.9
		Southbound	D	40.0	D	41.7	D	50.3	D	52.9	D	46.5	D	50.6
		TOTAL	D	45.6	E	60.3	D	40.4	D	43.9	D	37.9	D	42.6
Signalized	Wyoga Lake Rd. & Steels Corners Rd.	Eastbound	C	25.6	C	32.4	D	35.3	D	36.6	D	35.5	D	39.2
		Westbound	D	40.6	D	48.1	C	31.0	D	38.3	D	36.0	D	40.6
		Northbound	D	45.4	E	56.9	D	36.5	D	46.2	D	39.8	D	52.5
		Southbound	D	45.7	E	60.6	D	51.5	F	85.4	D	42.7	D	52.5
		TOTAL	D	37.9	D	47.2	D	39.1	D	52.2	D	37.8	D	44.3
TWSC	State Rd. & Kimberlyn Dr.	Eastbound	D	31.2	E	39.8	D	27.3	D	34.2	C	18.6	C	20.7
TWSC	State Rd. & Audi South Dr. / Quick Rd.	Westbound	F	68.2	F	110.4	F	93.5	F	236.4	D	26.1	D	34.3
		Eastbound	B	12.8	B	13.9	F	50.9	F	128.7	D	25.6	D	32.8
TWSC	State Rd. & Audi North Dr. / Quick Rd. Ext.	Eastbound	E	42.3	F	58.1	F	53.6	F	77.6	E	35.4	E	45.2
		Westbound	D	26.9	D	34.0	B	12.1	B	12.8	D	28.2	E	35.5
TWSC	State Rd. & Falls Industrial Pkwy.	Westbound	D	32.5	E	43.1	D	28.9	E	40.8	C	22.1	D	26.8
TWSC	State Rd. & Woodridge South Dr.	Eastbound	C	21.0	D	25.2	C	18.5	C	20.8	C	19.0	C	21.7
TWSC	State Rd. & Woodridge North Dr.	Eastbound	C	20.8	D	25.0	D	30.2	E	37.1	C	22.4	D	26.7
TWSC	State Rd. & Salt Creek Run	Eastbound	D	29.7	E	46.5	C	20.6	C	23.1	D	26.8	D	33.0
		Westbound	B	11.5	B	12.3	D	26.0	D	30.5	D	27.9	D	34.7
TWSC	State Rd. & Buckeye Sports Dr.	Westbound	D	28.4	E	37.1	D	28.2	D	33.6	D	27.6	D	34.4
		Eastbound	C	22.5	D	27.2	C	16.9	C	18.7	C	22.8	D	27.3
TWSC	State Rd. & Boulder Blvd.	Eastbound	D	29.6	E	45.5	C	22.5	D	29.4	D	28.4	E	35.0
TWSC	Steels Corners Rd. & Koir Dr. / Americhem Dr.	Northbound	D	26.7	D	30.6	D	25.7	D	30.4	B	13.1	B	13.7
		Southbound	C	20.5	C	22.9	C	20.3	C	23.4	C	21.4	C	24.6
TWSC	Steels Corners Rd. & Lippman Pkwy. / Struktol West Dr.	Northbound	C	20.1	C	23.2	C	16.4	C	18.2	C	23.7	C	24.3
		Southbound	-	-	-	-	B	13.1	B	14.0	C	22.1	D	25.7
TWSC	Steels Corners Rd. & Struktol East Dr. / Business Dr.	Southbound	C	20.6	C	23.4	D	28.1	D	34.1	D	32.0	E	38.8
		Northbound	C	19.7	C	22.6	C	21.7	D	25.6	C	23.8	D	28.2
TWSC	Steels Corners Rd. & Bonnett Dr.	Northbound	D	27.6	D	33.1	D	26.3	D	32.2	B	13.7	B	14.6
		Southbound	D	28.4	D	33.7	D	26.8	D	32.6	B	13.0	B	13.9
TWSC	Wyoga Lake Rd. & Townhomes Dr.	Westbound	C	23.6	D	28.1	C	16.8	C	18.4	C	16.7	C	18.6
TWSC	Wyoga Lake Rd. & Walsh South Dr. / Chateau Dr.	Eastbound	D	32.8	F	50.2	C	20.4	C	24.2	C	17.4	C	20.0
		Westbound	F	61.1	F	102.0	D	25.6	D	32.2	D	25.9	D	31.0
TWSC	Wyoga Lake Rd & Walsh Center Dr. / Wyoga Lake Blvd.	Eastbound	F	165.8	F	350.1	E	44.7	F	86.5	C	20.7	C	24.3
		Westbound	F	78.8	F	156.4	E	41.7	F	56.5	C	20.3	D	27.2
TWSC	Wyoga Lake Rd. & Walsh North Dr.	Eastbound	C	23.2	D	28.7	C	21.4	D	30.0	C	15.5	C	17.1
TWSC	Wyoga Lake Rd. & CVCA South Dr.	Westbound	C	23.6	D	29.1	C	19.1	C	22.4	C	19.0	C	21.2
TWSC	Wyoga Lake Rd. & CVCA Center Dr.	Westbound	C	18.3	C	20.8	D	33.4	F	53.2	B	13.4	C	15.3
TWSC	Wyoga Lake Rd. & Falls Commerce Pkwy. / CVCA North Dr.	Eastbound	D	25.3	D	31.2	C	23.8	D	29.6	C	18.0	C	20.3
		Westbound	-	-	-	-	C	24.9	D	32.0	C	16.1	C	18.0
TWSC	Wyoga Lake Rd. & Princeton Place North	Eastbound	C	17.6	C	19.9	-	-	-	-	C	15.1	C	16.6
TWSC	Wyoga Lake Rd. & Princeton Place South	Eastbound	C	15.5	C	17.1	-	-	-	-	B	13.7	B	14.7
Unacceptable		TWSC = Two-Way Stop Control												
Failing		AWSC = All-Way Stop Control												

Due to the amount of intersection results presented above in Table 6, a schematic representation of this data was created to help visualize the results. Therefore, Appendix H contains this diagram as well as all Synchro reports detailing the future conditions capacity analysis at each intersection for each scenario.



Analysis of Turn Lane Requirements

The need for auxiliary lanes at unsignalized intersections is not based on capacity as much as it is based upon the number or percentage of turning vehicles relative to the advancing and opposing traffic volumes. ODOT provides design guidelines in the form of charts contained in the Location and Design (L&D) Manual, Vol. 1.⁶ Those charts were used to evaluate the need for left and right turn lanes at all study area intersections. Charts were analyzed under the existing conditions as well as the design year conditions for all three study periods. See Table 7 for a summary of the warrant results based on direction, length, and year warranted. A schematic diagram was produced to better demonstrate the results of this analysis. This diagram and copies of all the turn lane warrant charts can be found in Appendix I.

Table 7 - Turn Lane Warrant Results Summary

Corridor & Intersection		Approach	Movement	Length (50' Taper + Storage Length) [feet]	Warranted In	
					2021	2041
State Road	Boulder Blvd.	Northbound	Left	125	-	X
	Buckeye Sports Dr.	Northbound	Left	125	-	X
	Salt Creek Run	Northbound	Left	125	X	X
	Woodridge South Dr.	Northbound	Left	125	-	X
	Cuyahoga Falls Industrial Pkwy.	Southbound	Left	125	X	X
		Northbound	Right	125	X	X
Steels Corners Road	Americhem Dr. / Koir Dr.	Eastbound	Left	225	X	X
		Westbound	Left	225	X	X
	Struktol West Dr. / Lippman Pkwy.	Westbound	Left	225	X	X
	Struktol East Dr.	Eastbound	Left	225	X	X
		Westbound	Left	225	X	X
	Bonnnett Dr.	Eastbound	Left	225	X	X
Westbound		Left	225	X	X	
Wyoga Lake Road	Falls Commerce Pkwy. / CVCA North Dr.	Southbound	Left	125	X	X
		Southbound	Left	215	X	X
	CVCA South Dr.	Northbound	Right	215	X	X
		Southbound	Right	265	X	X
	Walsh North Dr.	Northbound	Left	215	X	X
		Southbound	Left	215	X	X
	Walsh Center Dr. / Wyoga Lake Blvd.	Southbound	Left	215	X	X
		Northbound	Left	215	X	X
	Walsh South Dr. / Chateau Dr.	Southbound	Right	215	-	X
Southbound		Left	125	X	X	
Princeton Place North Dr.	Southbound	Left	215	X	X	
	Northbound	Left	125	X	X	

Summary of Findings and Recommendations

An extensive and thorough evaluation was completed along State Road, Steels Corners Road, and Wyoga Lake Road analyzing existing geometrics, crashes, and capacity as well as a future conditions analysis including capacity, turn lane and traffic signal warrant criteria. Results varied across the study area depending on multiple factors such as location, time of day, existing geometry, and future traffic demand. PRIME assessed the findings of this study and have developed recommendations based on need and feasibility. The following section will summarize and present the results and recommendations for each of the three study area corridors.

⁶ ODOT Location and Design Manual, Volume 1 – Office of Roadway Design. 2021.



State Road

The existing conditions along State Road can be summarized by dividing the corridor into two sections: State Road north of Quick Road and State Road from Quick Road south. North of Quick Road, State Road operates as a two-lane road with access to minor business entrances and housing developments and has a Fair PCR of 64. The posted speed is 35 mph, but 85th-percentile speeds have been shown to be consistently over 45 mph according to ODOT's Transportation Data Management System. Existing capacity analysis demonstrates that service levels are currently acceptable, although may drop to unacceptable if future volumes materialize. There are various turn lanes warranted in both scenarios, the most significant being a southbound left and northbound right turn lane at Cuyahoga Falls Industrial Parkway. The existing capacity analysis did not dictate the need for traffic signal warrant analysis at any of these locations. There also did not appear to be any crash data trends in this section that would be unordinary for the given conditions.

State Road from Quick Road to Steels Corners Road widens to a three-lane section with a significantly higher driveway density, curb, and sidewalks and a Good PCR of 72. Left turn lane warrants were not evaluated in this section due to the existing two-way left turn lane, however, no right turn lanes were warranted. The existing capacity analysis demonstrates that the intersections operate acceptably except at the unorthodox intersection of State Road, Quick Road, and the Audi dealership driveway entrances. In this case, failing levels of service are experienced on several approaches in both the AM and School Peak periods. Given the failing levels of service, a traffic signal warrant analysis was conducted at both parts of this intersection. No signal warrant was met at either location. There are not any significant crash trends worth noting as well.

Recommendations

Given the findings summarized above, the following recommendations are presented for the State Road corridor:

- Continue to monitor the intersection of State Road and Quick Road for changes in traffic patterns or increases in volumes/crashes related to the issues determined in this study.
- Resurface State Road from the pavement joint at Quick Road north to Boulder Boulevard.
- Periodically monitor State Road for any significant increase in peak hour turn volumes, rear end crashes or undue delay so to reassess the need to construct the warranted turn lanes.

Steels Corners Road

The existing conditions along Steels Corners Road were found to be acceptable and operating adequately. As these intersections are all two-way stop controlled, virtually none of them experience undue minor street delay in any of the study scenarios. The capacity on this corridor is also anticipated to function sufficiently into the design year. However, the analysis found that left turn lanes are warranted in both existing and design year scenarios at all five study area intersections. Although the warrants are satisfied, the peak hour left turning movements at each intersection are minimal due to each driveway/road either serving light industrial uses or small residential areas. Traffic signal warrant analyses were not necessary at any locations on this corridor. The most significant crash type recorded over the last three years were rear ends, which is not uncommon on a road with a moderate driveway density and traffic volumes. This segment of Steels Corners Road has an Excellent PCR of 93.

Recommendations

Given the findings summarized above, the following recommendations are presented for the Steels Corners Road corridor:

- Periodically monitor Steels Corners Road for any significant increase in peak hour left turn volumes, rear end crashes or undue delay so to reassess the need to construct the warranted turn lanes.



Wyoga Lake Road

Although Wyoga Lake Road services several residential areas, the primary drivers of traffic on this corridor are for the Walsh Jesuit and CVCA High Schools. Because of this, the traffic volumes and congestion are not consistent throughout the day but concentrated over several hours in the morning and afternoon. These factors result in poor levels of service for some minor street traffic as every intersection along Wyoga Lake Road is two-way stop controlled. The failing levels of service were found to occur in two locations: at the main entrance to Walsh Jesuit High School across from Wyoga Lake Boulevard, and at the south entrance to Walsh across from Chateau Drive. As such, traffic signal warrant analyses were conducted at both locations. Warrant 3 was found to be justified at the Walsh main entrance / Wyoga Lake Boulevard intersection. Crash data also reveals an upward trend in angle collisions over a 12-month period from 2019 to 2020 at this location. Further, given the fact that schools are known to be high peak hour generators, left and right turning volumes into each of the high schools are relatively high. This resulted in turn lanes being warranted at every study area intersection which comprises a significant length of the entire Wyoga Lake Road corridor.

There are several other miscellaneous items worth noting as well. There is known to be a common flooding issue at the north end of Wyoga Lake Road as the profile drops near a pond and wetland area on the east side of the road. This segment of Wyoga Lake Road has the lowest PCR in the study area, rated as Fair (53). PRIME also understands that the Princeton Place project as described previously is anticipated to have access to the existing SUP along the east side of the road.

Recommendations

Given the findings summarized above, the following recommendations are presented for the Wyoga Lake Road corridor. Due to the extent of the findings and recommendations, concept drawings, traffic models and a cost estimate were produced to better illustrate how the proposed improvements would affect the corridor. These drawings, Synchro reports and the estimate can be found in Appendix J. A table comparing the capacity at the nine Wyoga Lake Road intersections in the existing conditions versus the proposed conditions can be seen on Page 17.

- Construct a three-lane section from Steels Corners Road to Seasons Road, allowing for adequate left turn lane storage into all studied intersections and a two-way left turn lane along the rest of the corridor.
- Construct drop right turn lanes at warranted locations as part of the widening project.
- Install a traffic signal at the intersection of Wyoga Lake Road and the Walsh High School main entrance.
- Continue the SUP along the east side of the roadway to the northern limits of the project.



Table 8 - Wyoga Lake Road Capacity Analysis Comparison

Intersection & Traffic Control		Approach	AM Peak				School Peak				PM Peak			
			2021		2041		2021		2041		2021		2041	
			LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)
Wyoga Lake Road - Existing Conditions														
TWSC	Wyoga Lake Rd. & Townhomes Dr.	Westbound	C	23.6	D	28.1	C	16.8	C	18.4	C	16.7	C	18.6
TWSC	Wyoga Lake Rd. & Walsh South Dr. / Chateau Dr.	Eastbound	D	32.8	F	50.2	C	20.4	C	24.2	C	17.4	C	20.0
		Westbound	F	61.1	F	102.0	D	25.6	D	32.2	D	25.9	D	31.0
TWSC	Wyoga Lake Rd & Walsh Center Dr. / Wyoga Lake Blvd.	Eastbound	F	165.8	F	350.1	E	44.7	F	86.5	C	20.7	C	24.3
		Westbound	F	78.8	F	156.4	E	41.7	F	56.5	C	20.3	D	27.2
TWSC	Wyoga Lake Rd. & Walsh North Dr.	Eastbound	C	23.2	D	28.7	C	21.4	D	30.0	C	15.5	C	17.1
TWSC	Wyoga Lake Rd. & CVCA South Dr.	Westbound	C	23.6	D	29.1	C	19.1	C	22.4	C	19.0	C	21.2
TWSC	Wyoga Lake Rd. & CVCA Center Dr.	Westbound	C	18.3	C	20.8	D	33.4	F	53.2	B	13.4	C	15.3
TWSC	Wyoga Lake Rd. & Falls Commerce Pkwy. / CVCA North Dr.	Eastbound	D	25.3	D	31.2	C	23.8	D	29.6	C	18.0	C	20.3
		Westbound	-	-	-	-	C	24.9	D	32.0	C	16.1	C	18.0
TWSC	Wyoga Lake Rd. & Princeton Place North	Eastbound	C	17.6	C	19.9	-	-	-	-	C	15.1	C	16.6
TWSC	Wyoga Lake Rd. & Princeton Place South	Eastbound	C	15.5	C	17.1	-	-	-	-	B	13.7	B	14.7
Wyoga Lake Road - Proposed Conditions														
TWSC	Wyoga Lake Rd. & Townhomes Dr.	Westbound	C	16.8	C	18.4	B	13.5	B	14.2	B	13.5	B	14.2
Percent Change				-29%		-35%		-20%		-23%		-19%		-24%
TWSC	Wyoga Lake Rd. & Walsh South Dr. / Chateau Dr.	Eastbound	D	32.8	E	40.5	C	19.0	C	22.0	C	17.1	C	19.5
		Westbound	F	55.4	F	90.0	C	24.7	D	30.5	D	25.3	D	30.2
Percent Change				0%		-19%		-7%		-9%		-2%		-3%
Percent Change				-9%		-12%		-4%		-5%		-2%		-3%
Signalized	Wyoga Lake Rd & Walsh Center Dr. / Wyoga Lake Blvd.	Eastbound	B	17.4	B	17.8	B	17.1	B	17.4	B	15.3	B	15.3
		Westbound	B	18.9	B	19.3	B	16.3	B	16.5	B	15.9	B	16.0
		Northbound	B	10.3	B	11.6	B	10.9	B	11.3	A	8.0	A	8.4
		Southbound	B	11.5	B	12.2	A	8.8	A	9.6	A	9.6	B	10.5
		TOTAL	B	12.7	B	13.6	B	11.3	B	11.9	A	9.9	B	10.5
Percent Change				-90%		-95%		-62%		-80%		-26%		-37%
Percent Change				-76%		-88%		-61%		-71%		-22%		-41%
TWSC	Wyoga Lake Rd. & Walsh North Dr.	Eastbound	B	14.5	C	15.6	C	16.4	C	19.4	B	12.9	B	13.5
Percent Change				-38%		-46%		-23%		-35%		-17%		-21%
TWSC	Wyoga Lake Rd. & CVCA South Dr.	Westbound	C	15.2	C	16.5	B	13.8	B	14.8	B	14.2	B	14.9
Percent Change				-36%		-43%		-28%		-34%		-25%		-30%
TWSC	Wyoga Lake Rd. & CVCA Center Dr.	Westbound	C	15.0	C	16.4	C	21.4	D	26.5	B	12.1	B	13.1
Percent Change				-18%		-21%		-36%		-50%		-10%		-14%
TWSC	Wyoga Lake Rd. & Falls Commerce Pkwy. / CVCA North Dr.	Eastbound	D	25.2	D	30.7	C	23.6	D	29.3	C	17.9	C	20.1
		Westbound	-	-	-	-	C	24.7	D	31.6	C	16.0	C	17.9
Percent Change				0%		-2%		-1%		-1%		-1%		-1%
Percent Change				-		-		-1%		-1%		-1%		-1%
TWSC	Wyoga Lake Rd. & Princeton Place North	Eastbound	B	13.7	B	14.6	-	-	-	-	B	13.1	B	13.8
Percent Change				-22%		-27%		-		-		-13%		-17%
TWSC	Wyoga Lake Rd. & Princeton Place South	Eastbound	B	12.9	B	13.6	-	-	-	-	B	12.1	B	12.7
Percent Change				-17%		-20%		-		-		-12%		-14%
Unacceptable		TWSC = Two-Way Stop Control												
Failing		AWSC = All-Way Stop Control												

Conclusions

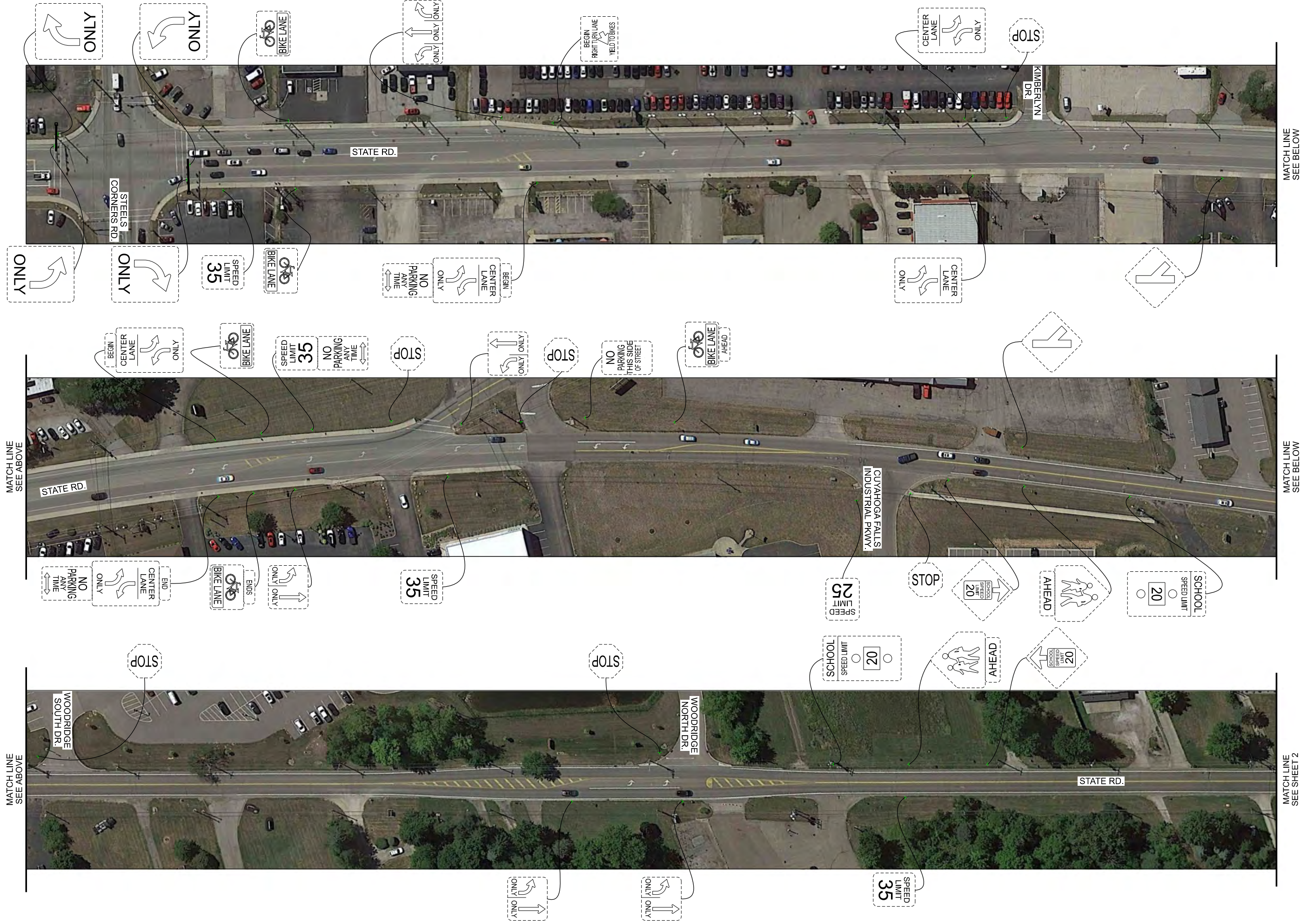
PRIME was selected by the City of Cuyahoga Falls to perform a regional transportation study in the northernmost section of the city loosely coined as “The Large Triangle” which is comprised of State Road, Steels Corners Road, and Wyoga Lake Road. This larger study was performed in conjunction with a similar study for the city titled “The Triangle – Traffic Study” which analyzed a more local issue at the intersection of State Road, Seasons Road, and Wyoga Lake Road. The goal of this larger study is intended to evaluate the existing transportation system in the study area including traffic patterns, existing geometry, traffic capacity, crash data, as well as any improvements necessary to mitigate the issues identified. PRIME has completed this study and presented herein all findings and recommendations for the three corridors that were evaluated.



APPENDIX A STUDY AREA EXISTING CONDITIONS DIAGRAM

STATE RD. - EXISTING CONDITIONS DIAGRAM

MODEL: STA-001 PAPER: SIZE: 17x11 (in.) DATE: 10/22/2021 TIME: 11:46:58 AM USER: bmorgan
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MATCH LINE
SEE SHEET 2

MATCH LINE
SEE BELOW

MATCH LINE
SEE BELOW

STATE RD. - EXISTING CONDITIONS DIAGRAM

MODEL: STA-002 PAPER SIZE: 17x11 (in.) DATE: 10/22/2021 TIME: 11:49:04 AM USER: bmcorgan
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MATCH LINE
SEE ABOVE



MATCH LINE
SEE SHEET 3

MATCH LINE
SEE SHEET 1



MATCH LINE
SEE BELOW

SPEED
LIMIT
35
NO
PARKING
THIS SIDE
OF STREET

SPEED
LIMIT
35
NO
PARKING
THIS SIDE
OF STREET

STATE RD. - EXISTING CONDITIONS DIAGRAM

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MATCH LINE
SEE ABOVE



STOP

SPEED
LIMIT
35

NO
PARKING
THIS SIDE
OF STREET

STATE RD.

BOULDER BLVD

SEASONS RD.

MATCH LINE
SEE SHEET 2



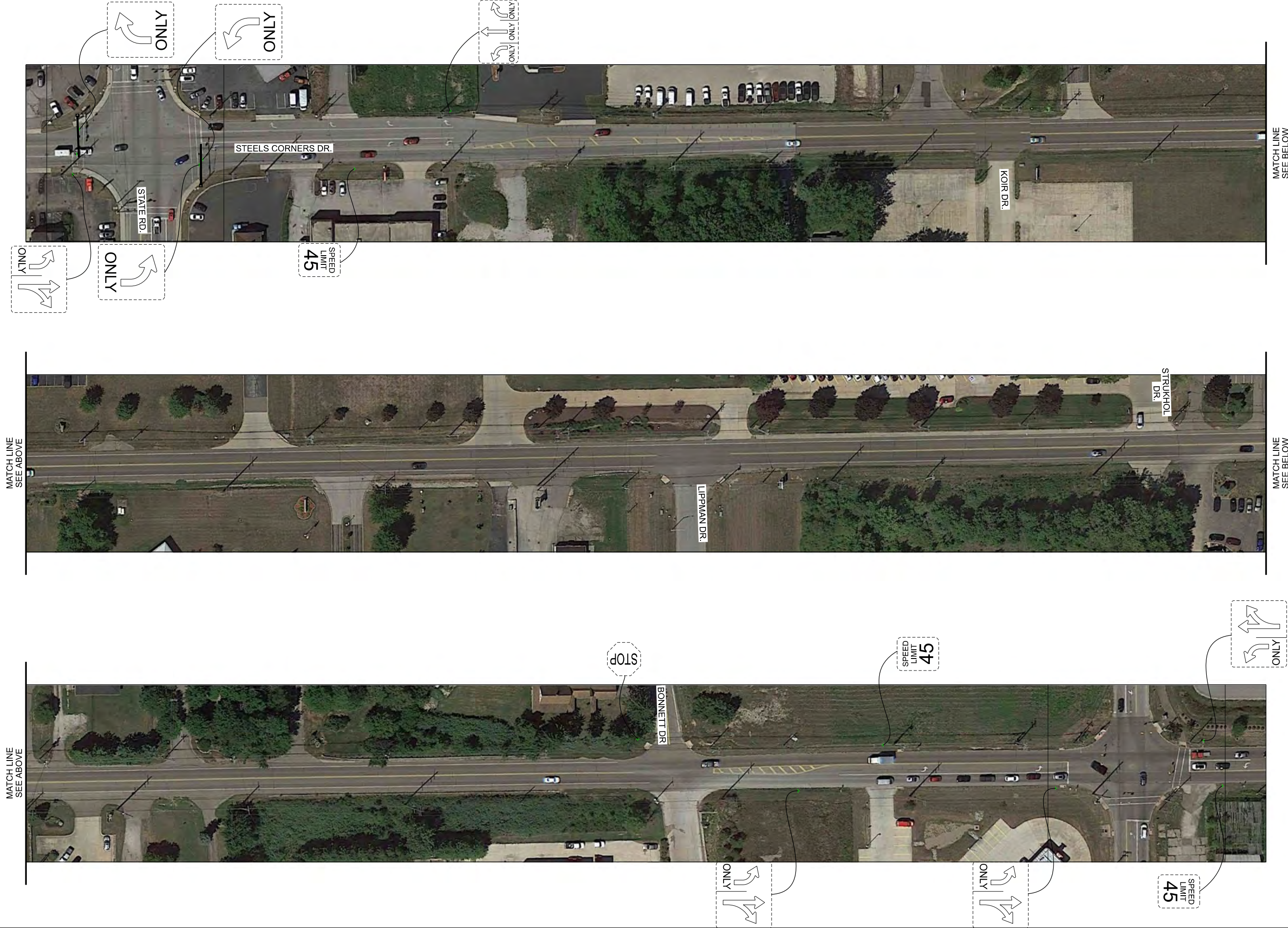
STATE RD.

FALLS
COMMERCE DR.

MATCH LINE
SEE BELOW

STEELS CORNERS RD. - EXISTING CONDITIONS DIAGRAM

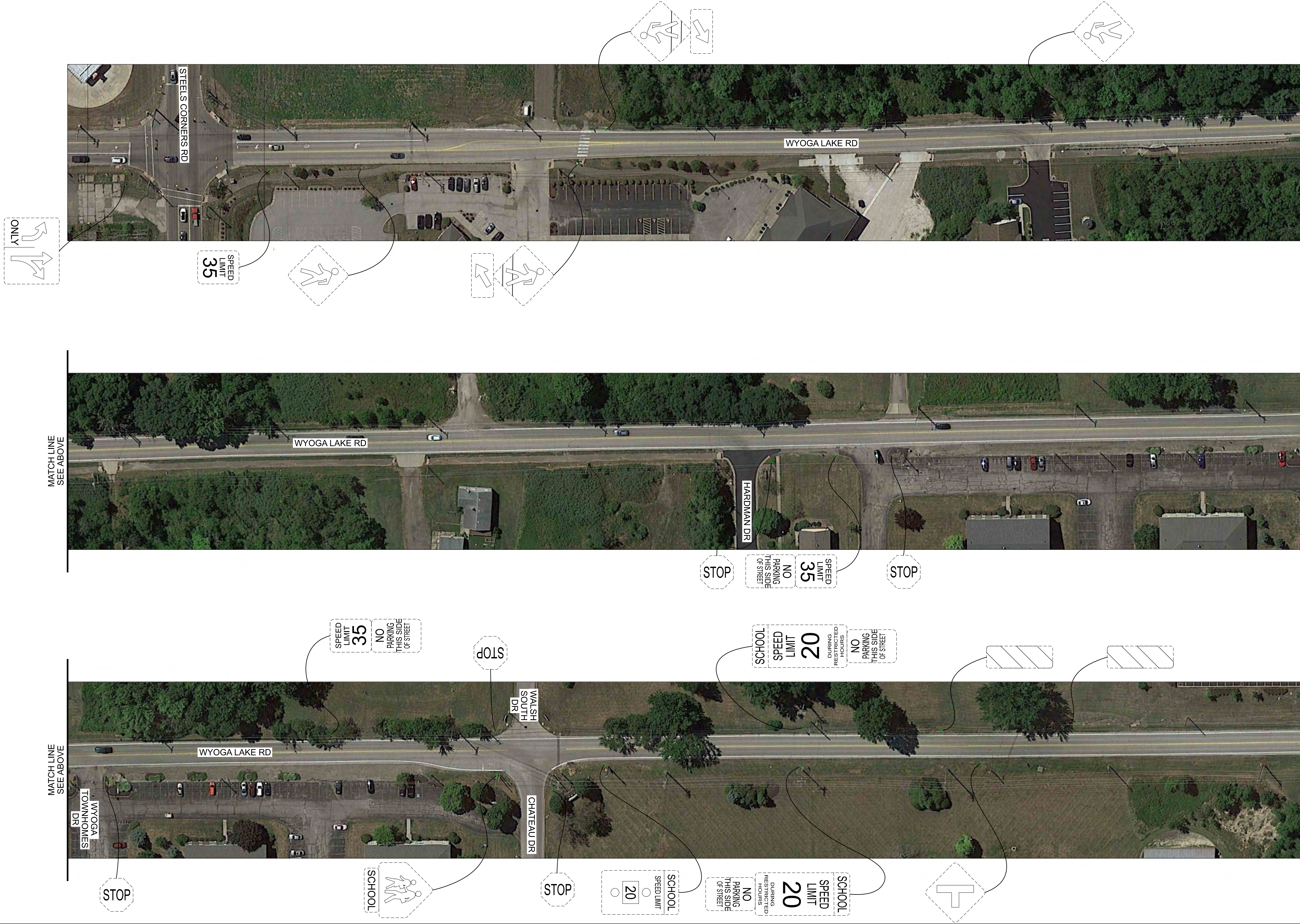
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WYOGA LAKE RD. - EXISTING CONDITIONS DIAGRAM

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MATCH LINE
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MATCH LINE
SEE SHEET 2

WYOGA LAKE RD. - EXISTING CONDITIONS DIAGRAM

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MATCH LINE
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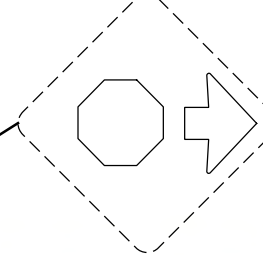
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STOP

STOP

STOP

SPEED LIMIT 35
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STOP

STOP

MATCH LINE
SEE ABOVE



DO NOT ENTER

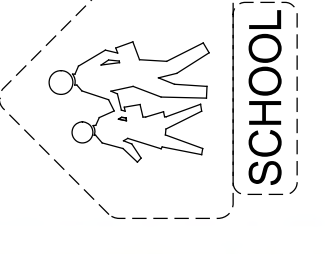
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SPEED LIMIT 35

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NO OUTLET

SCHOOL SPEED LIMIT 20



SPEED LIMIT 35
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MATCH LINE
SEE SHEET 1



STOP

STOP

SCHOOL SPEED LIMIT 20
DURING RESTRICTED HOURS
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SCHOOL SPEED LIMIT 20
DURING RESTRICTED HOURS
NO PARKING THIS SIDE OF STREET

MATCH LINE
SEE BELOW

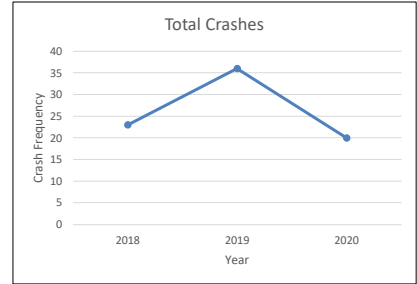
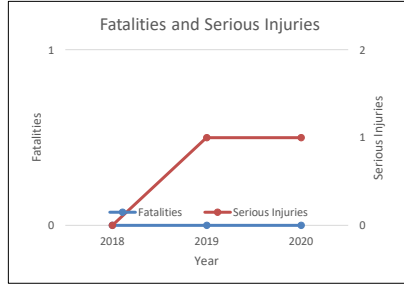
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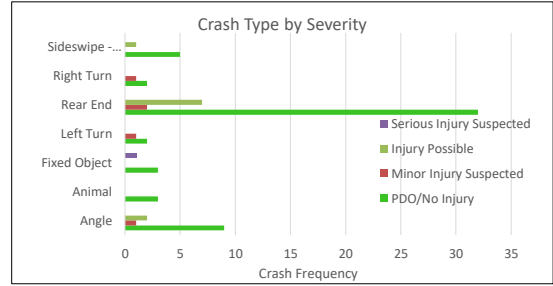
APPENDIX B EXISTING CRASH DATA

Cuyahoga Falls - State Rd. Corridor
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2018	23	0	0
2019	36	0	1
2020	20	0	1
Grand Total	79	0	2



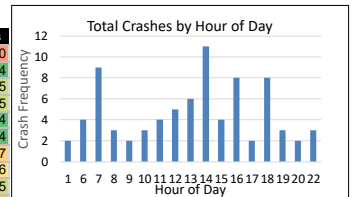
Crash Type	Injury Level					Grand Total
	PDO/No Injury	Minor Injury	Su Injury Possible	Serious Injury	S Grand Total	
Rear End	32	2	7	0	41	
Angle	9	1	2	0	12	
Sideswipe - Passing	5	0	1	0	6	
Fixed Object	3	0	0	1	4	
Right Turn	2	1	0	0	3	
Animal	3	0	0	0	3	
Left Turn	2	1	0	0	3	
Backing	2	0	0	0	2	
Head On	1	0	0	1	2	
Parked Vehicle	1	0	0	0	1	
Other Non-Collision	0	1	0	0	1	
Pedalcycles	1	0	0	0	1	
Grand Total	61	6	10	2	79	



Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	58	0	2
Ice	2	0	0
Slush	1	0	0
Snow	1	0	0
Wet	16	0	0
Other / Unknown	1	0	0
Grand Total	79	0	2

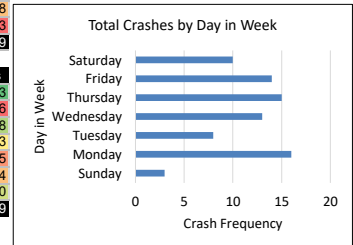
Hour of Day	Total Crashes
1	2
6	4
7	9
8	3
9	2
10	3
11	4
12	5
13	6
14	11
15	4
16	8
17	2
18	8
19	3
20	2
22	3
Grand Total	79

Month	Total Crashes
January	10
February	4
March	5
April	5
May	4
June	4
July	7
August	6
September	5
October	8
November	8
December	13
Grand Total	79

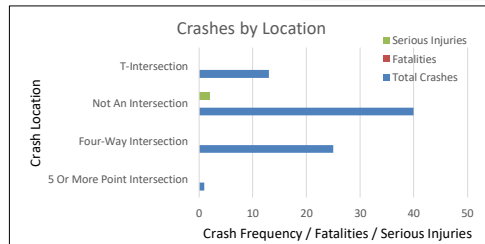


Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	79	0	2
Grand Total	79	0	2

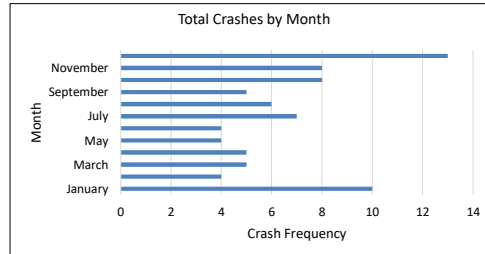
Day in Week	Total Crashes
Sunday	3
Monday	16
Tuesday	8
Wednesday	13
Thursday	15
Friday	14
Saturday	10
Grand Total	79



Crash Location	Total Crashes	Fatalities	Serious Injuries
5 Or More Point Intersection	1	0	0
Four-Way Intersection	25	0	0
Not An Intersection	40	0	2
T-Intersection	13	0	0
Grand Total	79	0	2

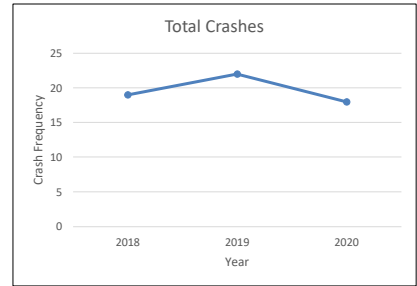
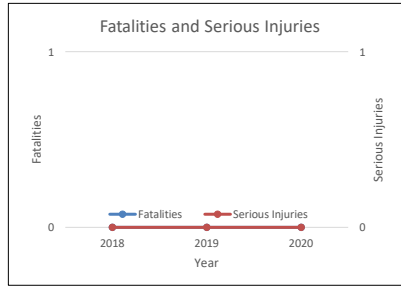


Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Curve Grade	1	0	0
Curve Level	1	0	0
Straight Grade	11	0	0
Straight Level	66	0	2
Grand Total	79	0	2

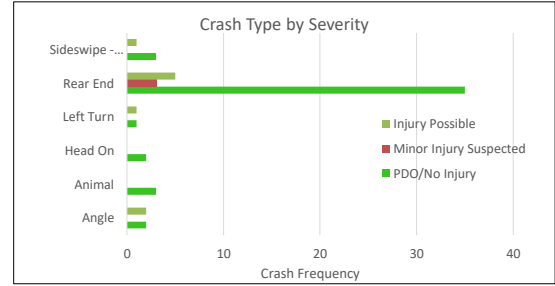


Cuyahoga Falls - Steels Corners Rd Corridor
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2018	19	0	0
2019	22	0	0
2020	18	0	0
Grand Total	59	0	0



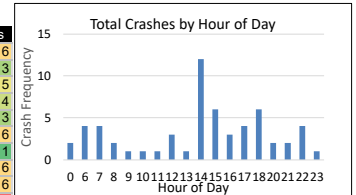
Total Crashes Crash Type	Injury Level			Grand Total
	PDO/No Injury	Minor Injury	Su Injury Possible	
Rear End	35	3	5	43
Sideswipe - Passing	3	0	1	4
Angle	2	0	2	4
Animal	3	0	0	3
Head On	2	0	0	2
Left Turn	1	0	1	2
Pedalcycles	1	0	0	1
Grand Total	47	3	9	59



Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	45	0	0
Ice	2	0	0
Snow	2	0	0
Wet	10	0	0
Grand Total	59	0	0

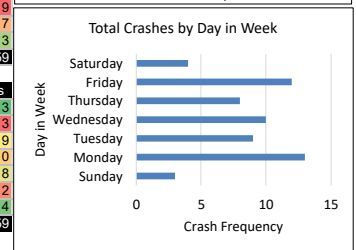
Hour of Day	Total Crashes
0	2
6	4
7	4
8	2
9	1
10	1
11	1
12	3
13	1
14	12
15	6
16	3
17	4
18	6
20	2
21	2
22	4
23	1
Grand Total	59

Month	Total Crashes
January	6
February	3
March	5
April	4
May	3
June	6
July	1
August	6
September	6
October	9
November	7
December	3
Grand Total	59

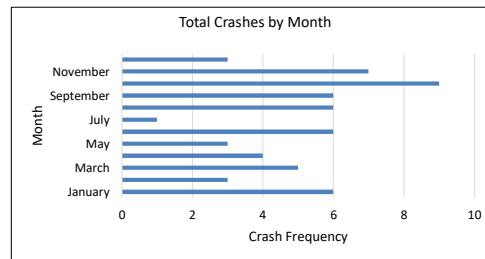


Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	59	0	0
Grand Total	59	0	0

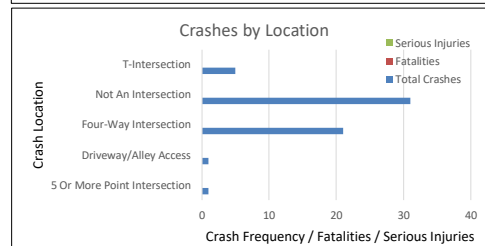
Day in Week	Total Crashes
Sunday	3
Monday	13
Tuesday	9
Wednesday	10
Thursday	8
Friday	12
Saturday	4
Grand Total	59



Crash Location	Total Crashes	Fatalities	Serious Injuries
5 Or More Point Intersection	1	0	0
Driveway/Alley Access	1	0	0
Four-Way Intersection	21	0	0
Not An Intersection	31	0	0
T-Intersection	5	0	0
Grand Total	59	0	0

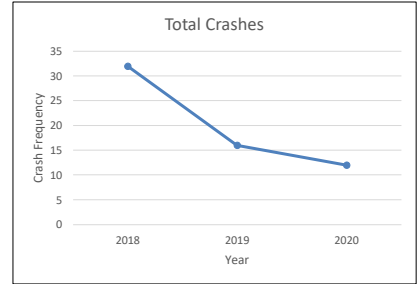
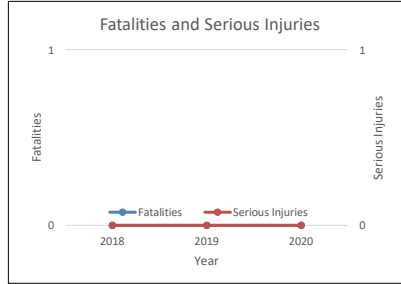


Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Grade	9	0	0
Straight Level	50	0	0
Grand Total	59	0	0

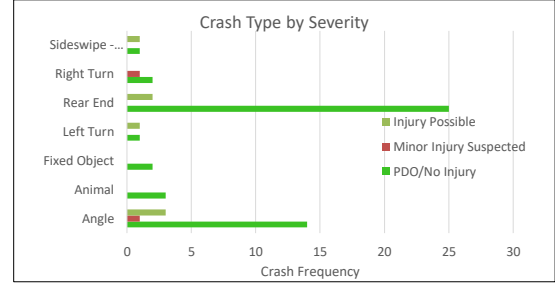


Cuyahoga Falls - Wyoga Lake Rd Corridor
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2018	32	0	0
2019	16	0	0
2020	12	0	0
Grand Total	60	0	0



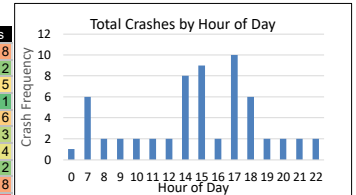
Total Crashes Crash Type	Injury Level			Grand Total
	PDO/No Injury	Minor Injury	Su Injury Possible	
Rear End	25	0	2	27
Angle	14	1	3	18
Animal	3	0	0	3
Right Turn	2	1	0	3
Sideswipe - Passing	1	0	1	2
Fixed Object	2	0	0	2
Left Turn	1	0	1	2
Other Non-Collision	1	0	0	1
Backing	0	0	1	1
Head On	1	0	0	1
Grand Total	50	2	8	60



Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	44	0	0
Ice	1	0	0
Snow	1	0	0
Wet	14	0	0
Grand Total	60	0	0

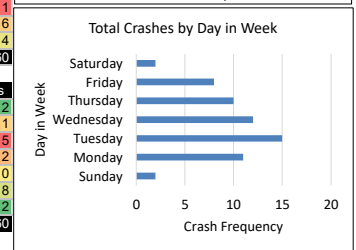
Hour of Day	Total Crashes
0	1
7	6
8	2
9	2
10	2
11	2
12	2
14	8
15	9
16	2
17	10
18	6
19	2
20	2
21	2
22	2
Grand Total	60

Month	Total Crashes
January	8
February	2
March	5
April	1
May	6
June	3
July	4
August	2
September	8
October	11
November	6
December	4
Grand Total	60

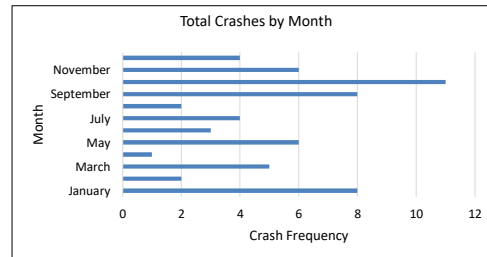


Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	60	0	0
Grand Total	60	0	0

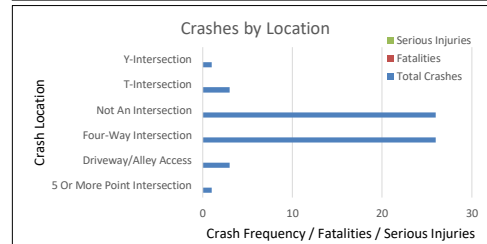
Day in Week	Total Crashes
Sunday	2
Monday	11
Tuesday	15
Wednesday	12
Thursday	10
Friday	8
Saturday	2
Grand Total	60



Crash Location	Total Crashes	Fatalities	Serious Injuries
5 Or More Point Intersection	1	0	0
Driveway/Alley Access	3	0	0
Four-Way Intersection	26	0	0
Not An Intersection	26	0	0
T-Intersection	3	0	0
Y-Intersection	1	0	0
Grand Total	60	0	0



Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Grade	9	0	0
Straight Level	51	0	0
Grand Total	60	0	0





APPENDIX C
TRAFFIC COUNT DATA &
DESIGN VOLUME FACTORS / CALCULATIONS

State Rd & Boulder Blvd - TMC

Tues Sep 14, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	0	84	1	85	14	0	0	14	0	144	0	144	0	0	0	0
7:30	0	65	2	67	10	0	1	11	1	169	0	170	0	0	0	0
7:45	0	142	1	143	5	0	0	5	0	162	0	162	0	0	0	0
8:00	0	69	1	70	9	0	1	10	2	119	0	121	0	0	0	0
TOTAL	0	360	5	365	38	0	2	40	3	594	0	597	0	0	0	0
PHF	0.64				0.71				0.88				0.00			

State Rd. & Boulder Blvd. - TMC

Thu Apr 29, 2021

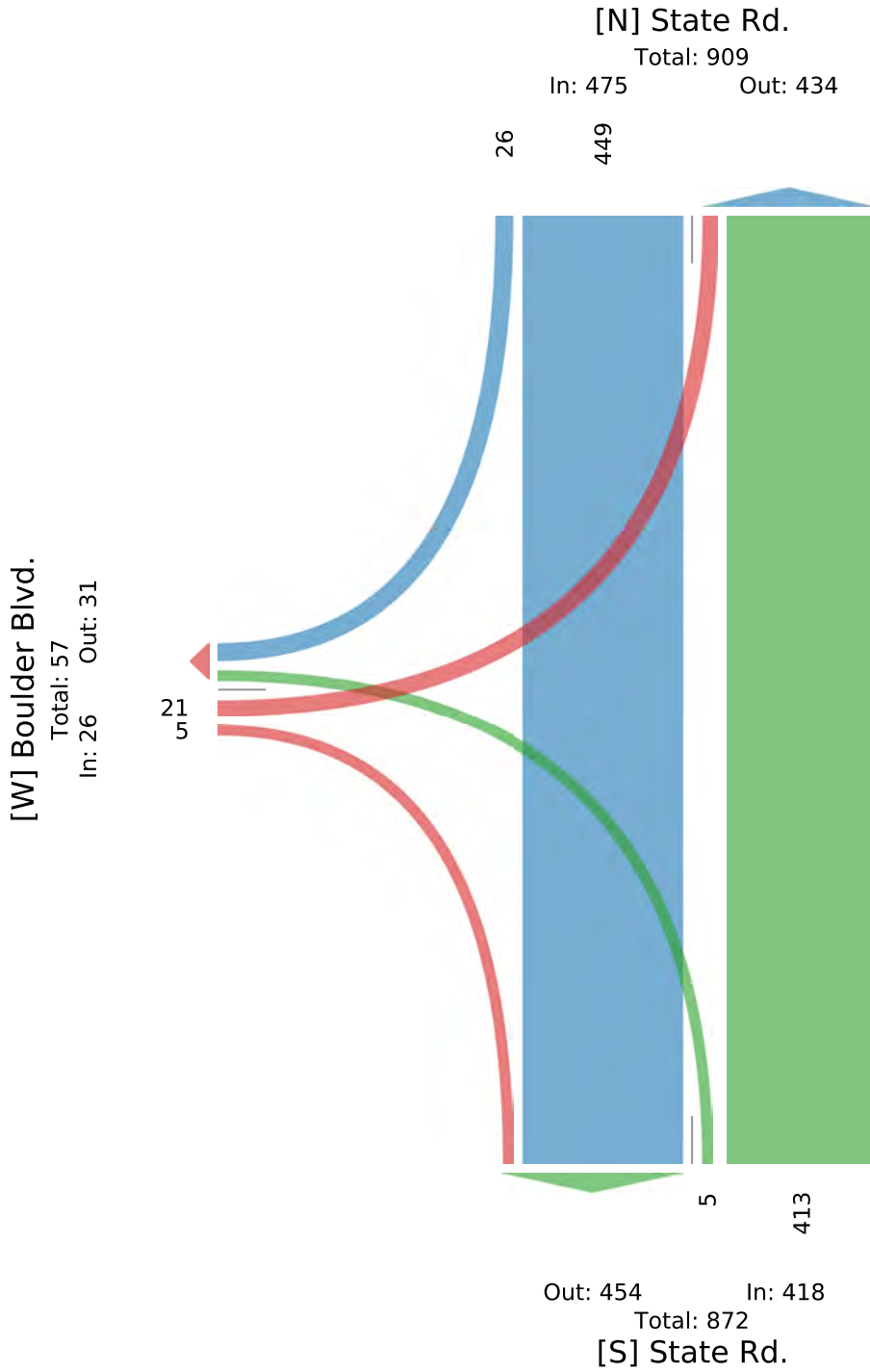
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 832004, Location: 41.201954, -81.496581

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Boulder Blvd. - TMC

Thu Apr 29, 2021

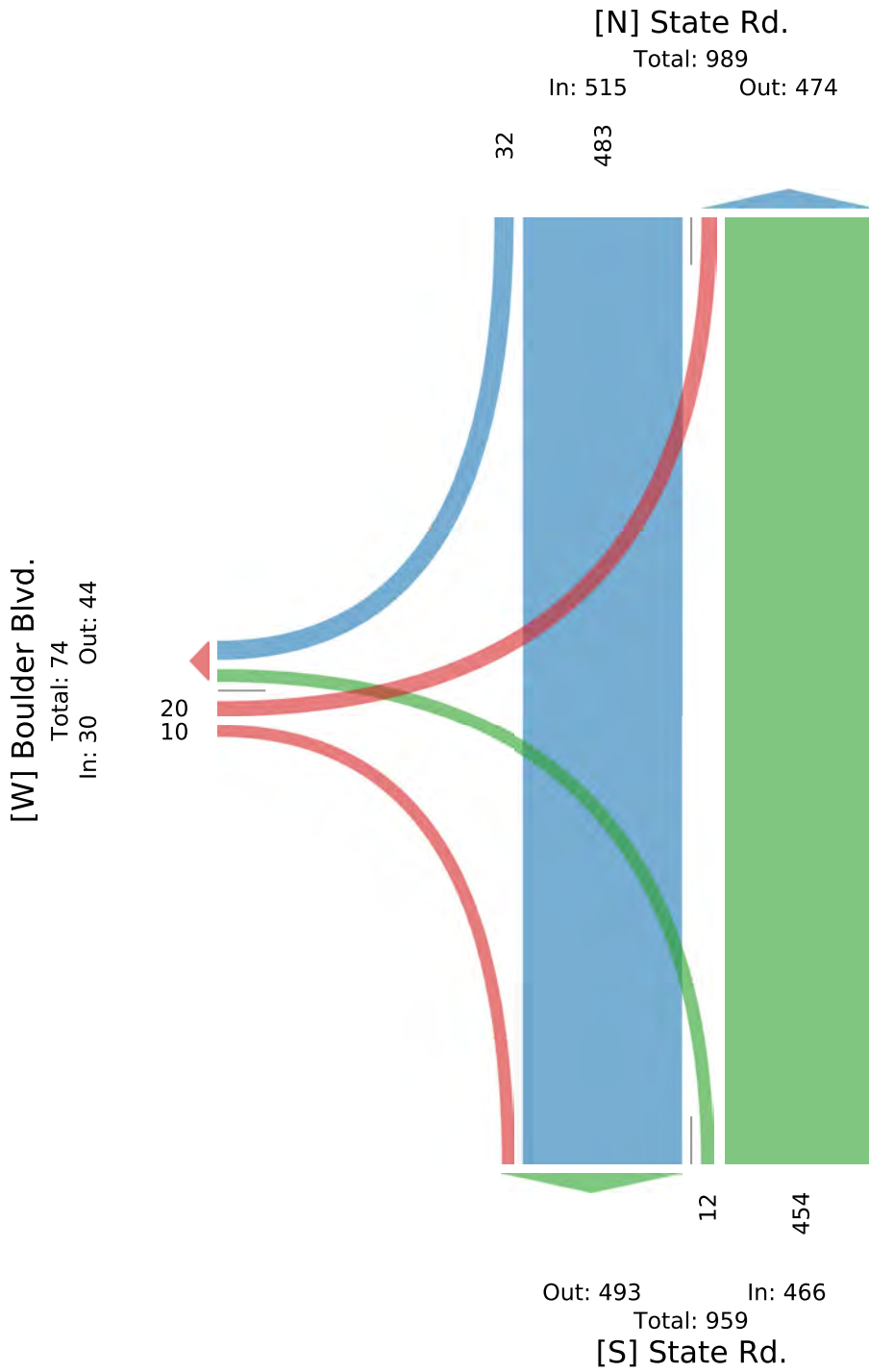
PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 832004, Location: 41.201954, -81.496581

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Falls Commerce Pkwy. - TMC

Thu Apr 29, 2021

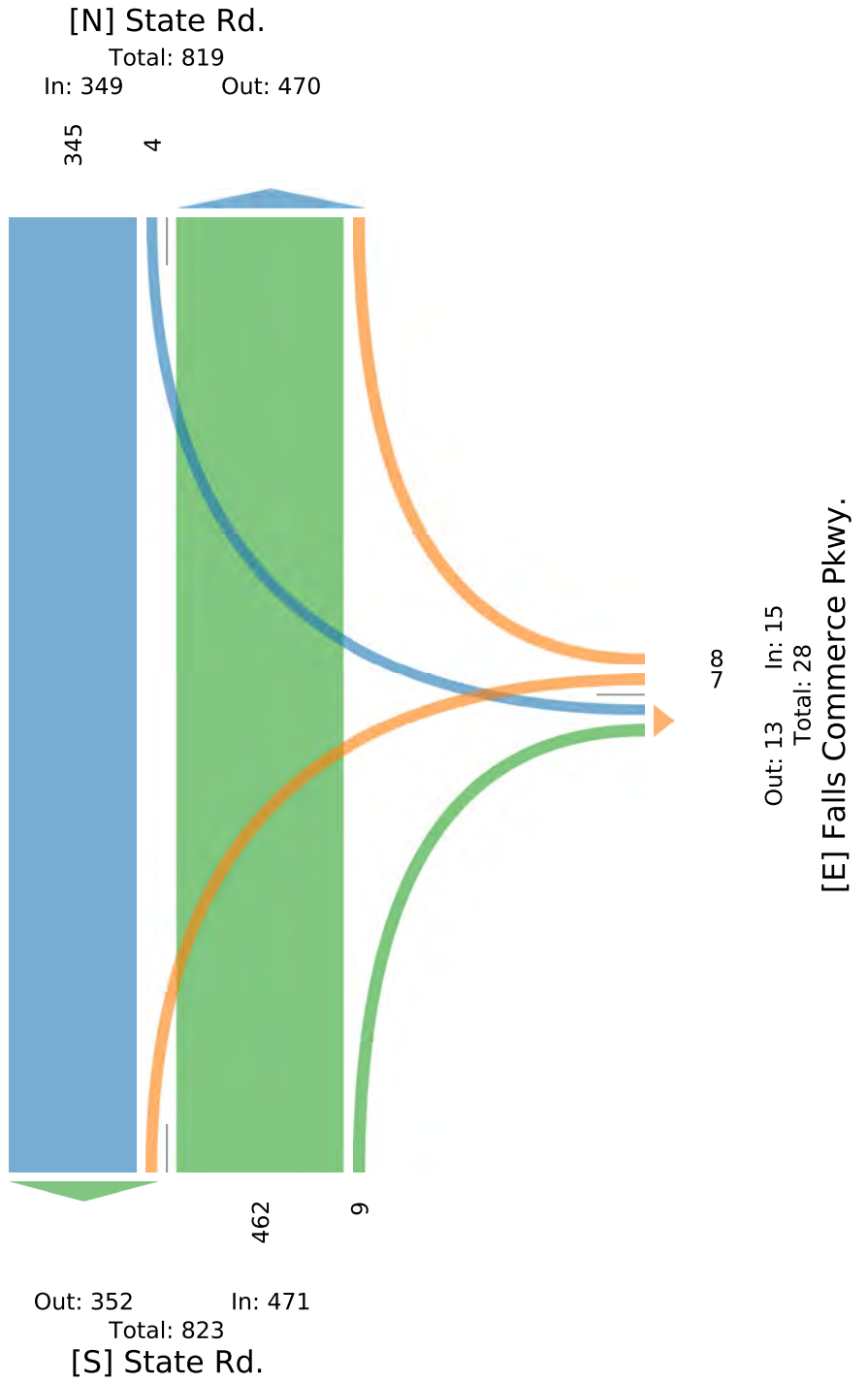
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 832006, Location: 41.199337, -81.498904

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Falls Commerce Pkwy. - TMC

Thu Apr 29, 2021

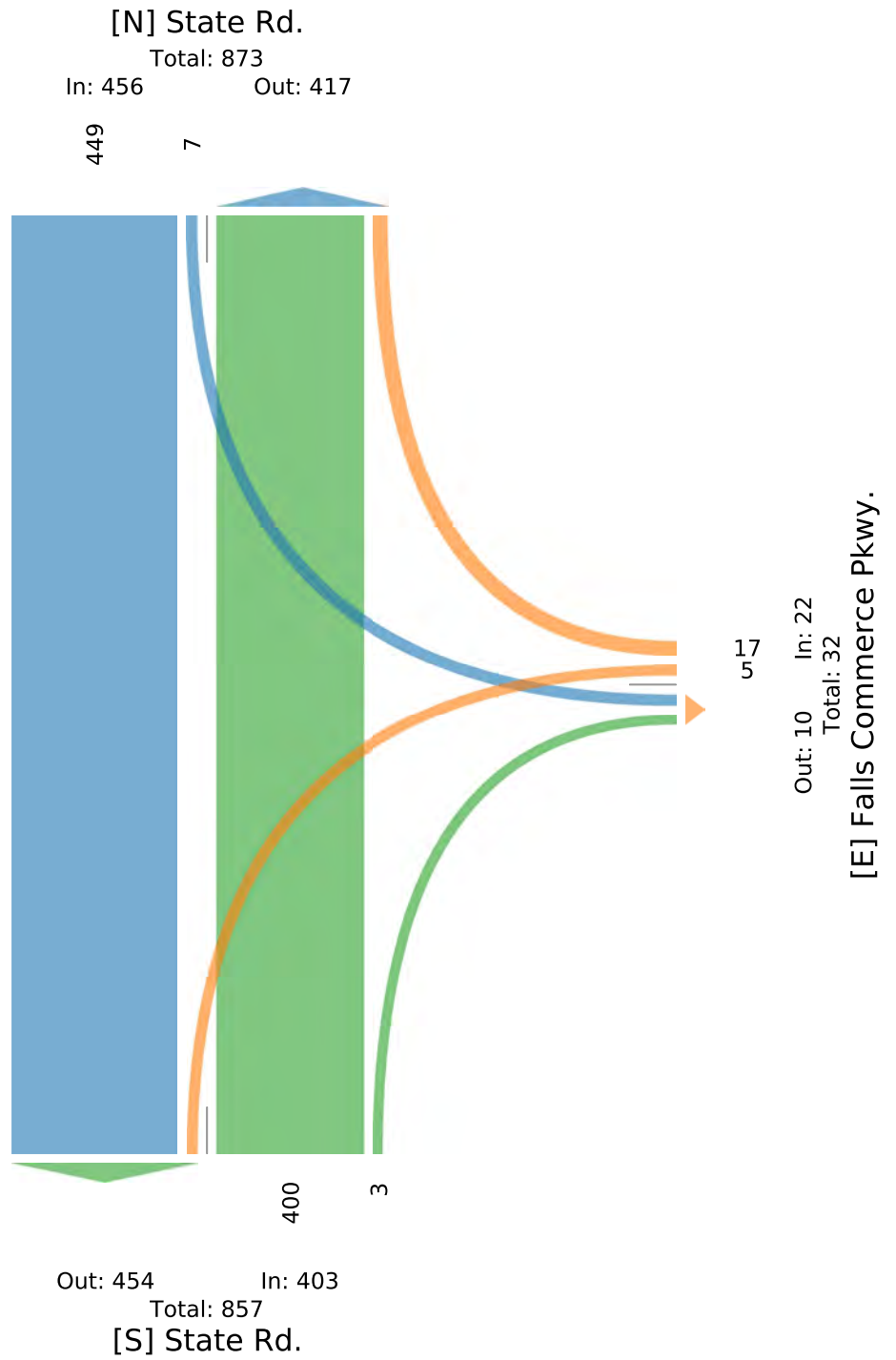
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 832006, Location: 41.199337, -81.498904

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Falls Commerce Pkwy. - TMC

Thu Apr 29, 2021

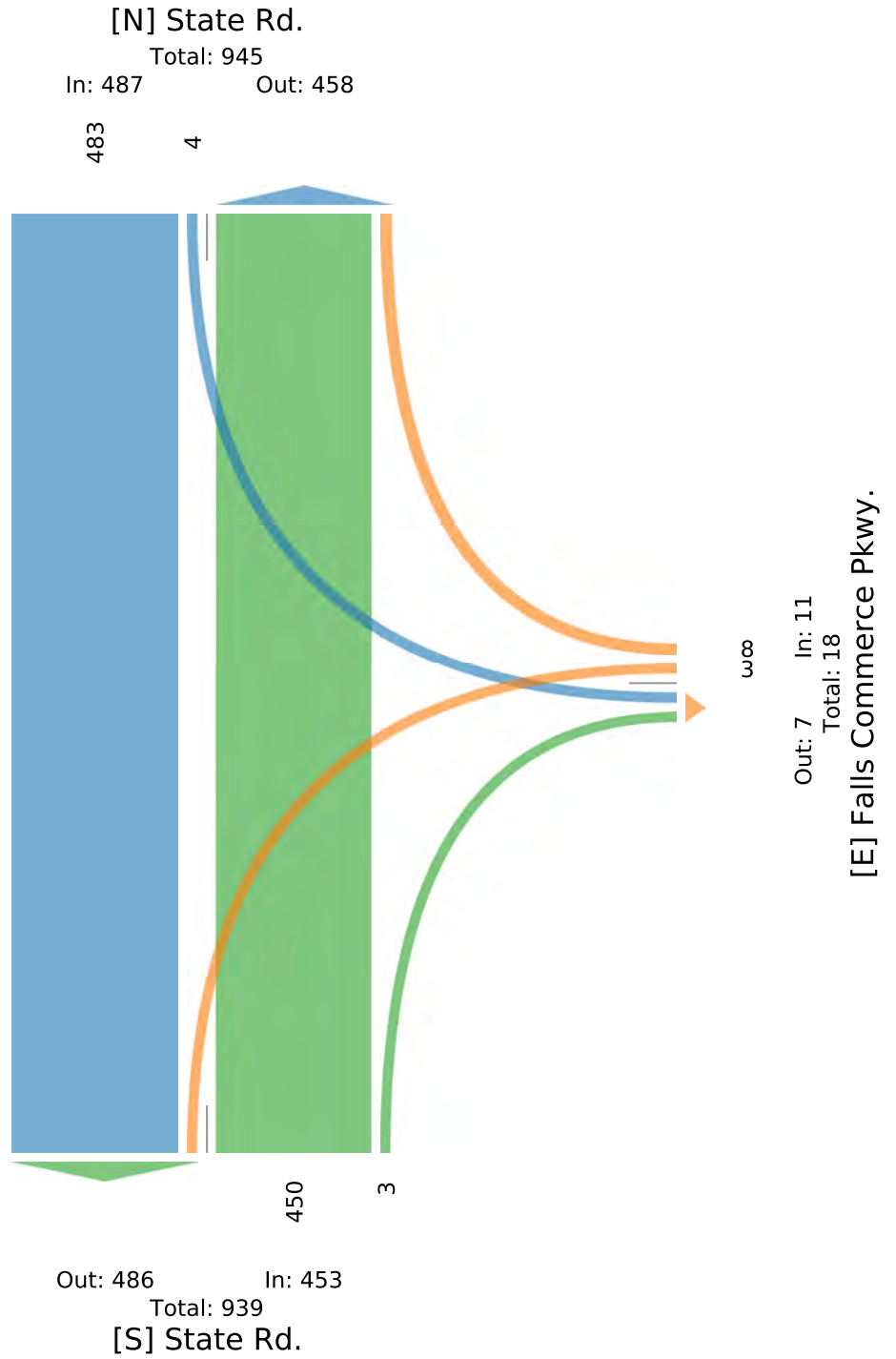
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 832006, Location: 41.199337, -81.498904

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Buckeye Sports Complex Dr - TMC

Tues Sep 14, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	0	78	1	79	1	0	3	4	1	138	0	139	0	0	1	1
7:30	0	60	2	62	1	0	1	2	1	197	2	200	0	0	0	0
7:45	0	147	0	147	1	0	0	1	1	135	1	137	0	0	0	0
8:00	0	75	2	77	1	0	0	1	2	124	1	127	0	0	1	1
TOTAL	0	360	5	365	4	0	4	8	5	594	4	603	0	0	2	2
PHF	0.62				0.50				0.75				0.50			

State Rd & Buckeye Sports - TMC

Tue May 4, 2021

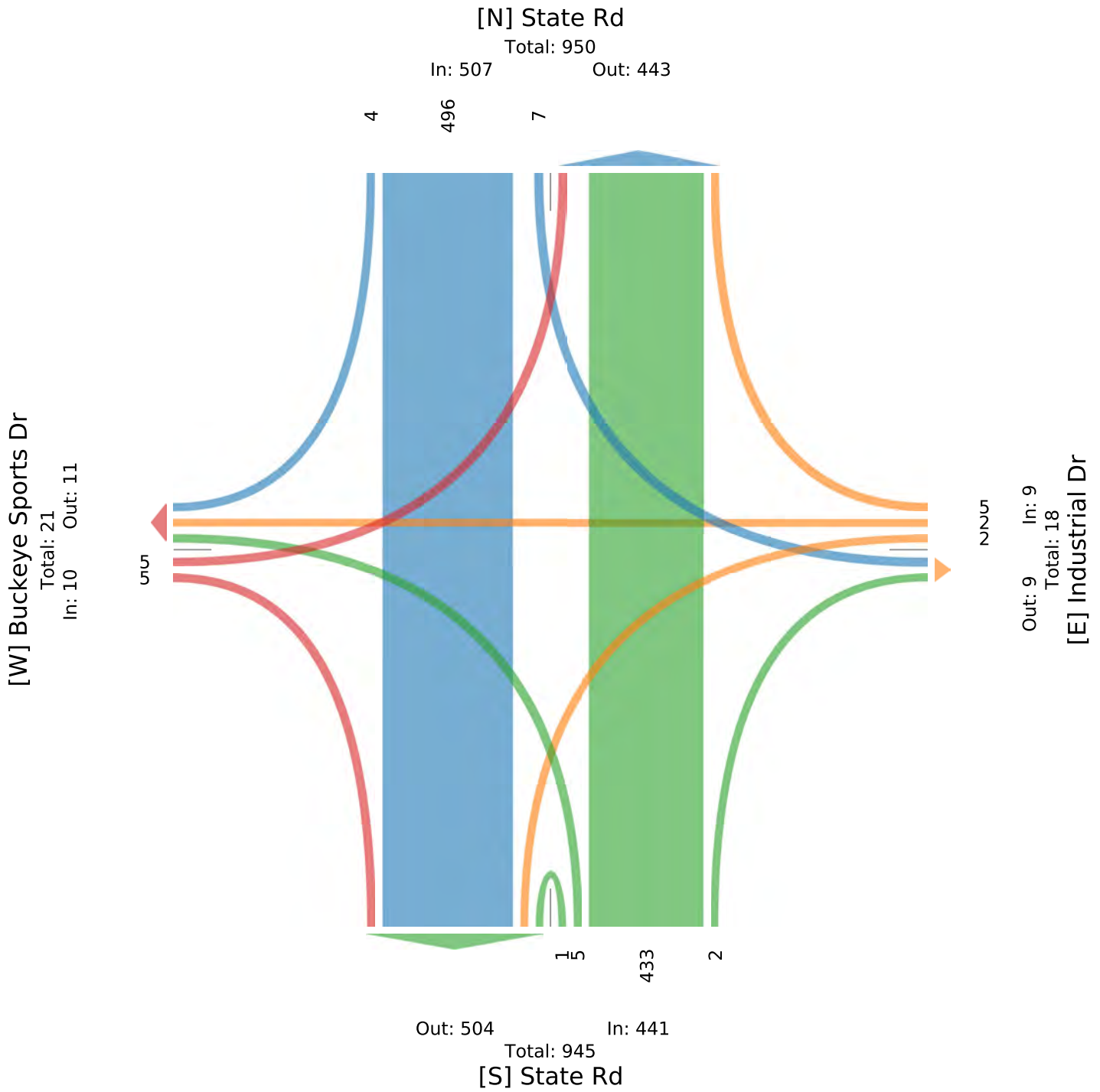
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835054, Location: 41.196912, -81.501262

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Buckeye Sports - TMC

Tue May 4, 2021

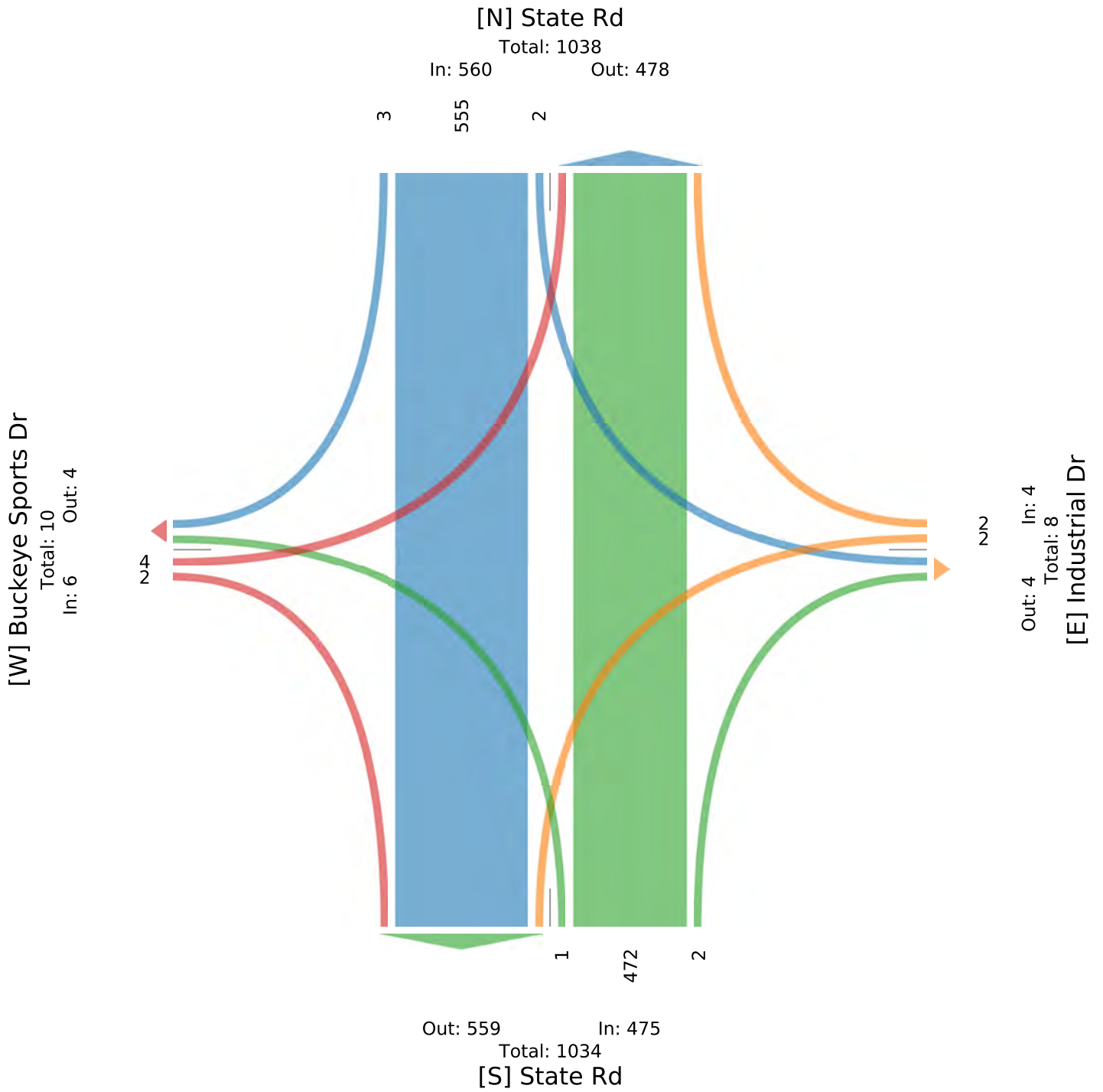
PM Peak (3:45 PM - 4:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835054, Location: 41.196912, -81.501262

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Salt Creek Run - TMC

Tue May 4, 2021

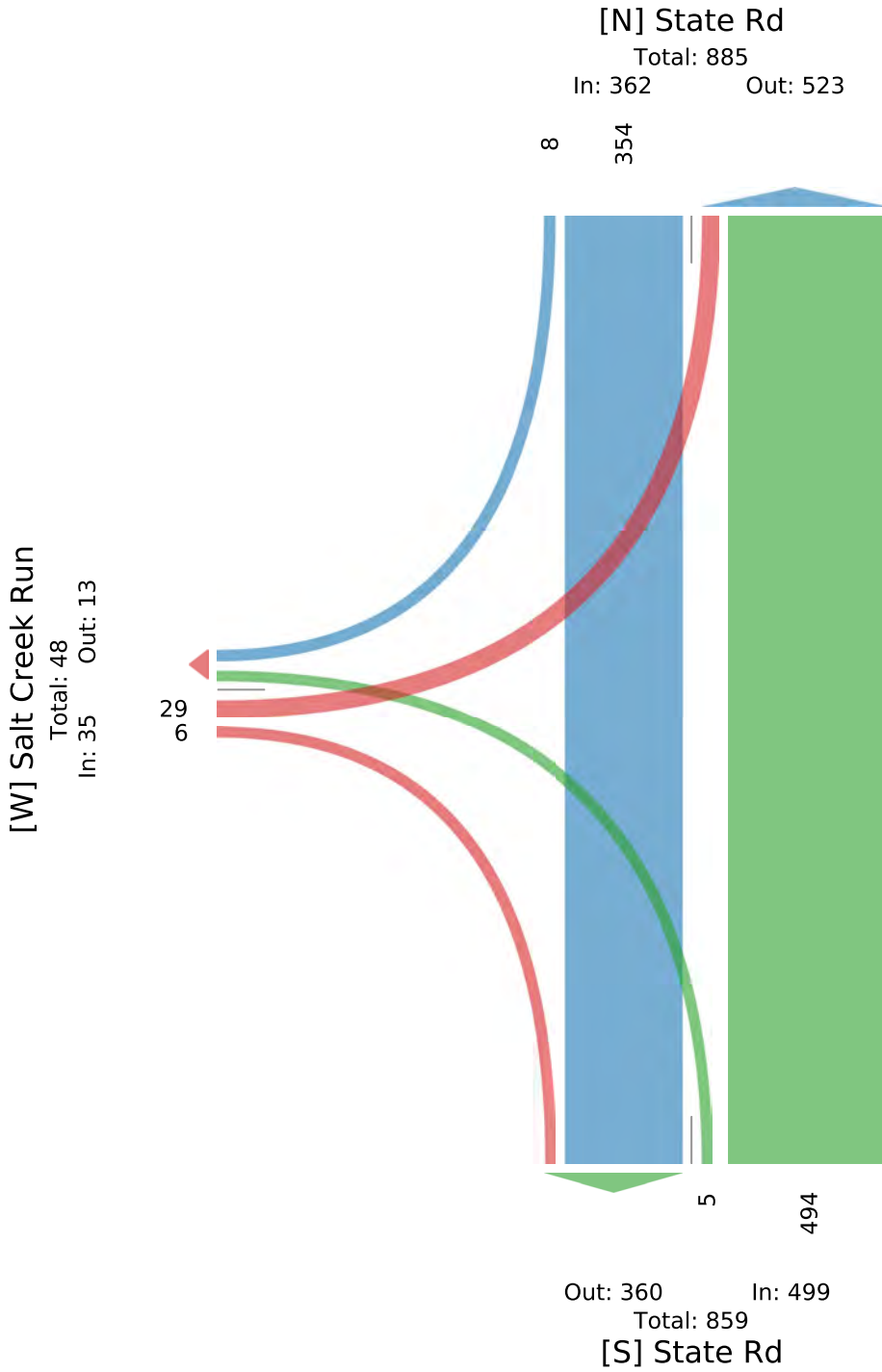
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835076, Location: 41.195923, -81.50229

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Salt Creek Run - TMC

Tue May 4, 2021

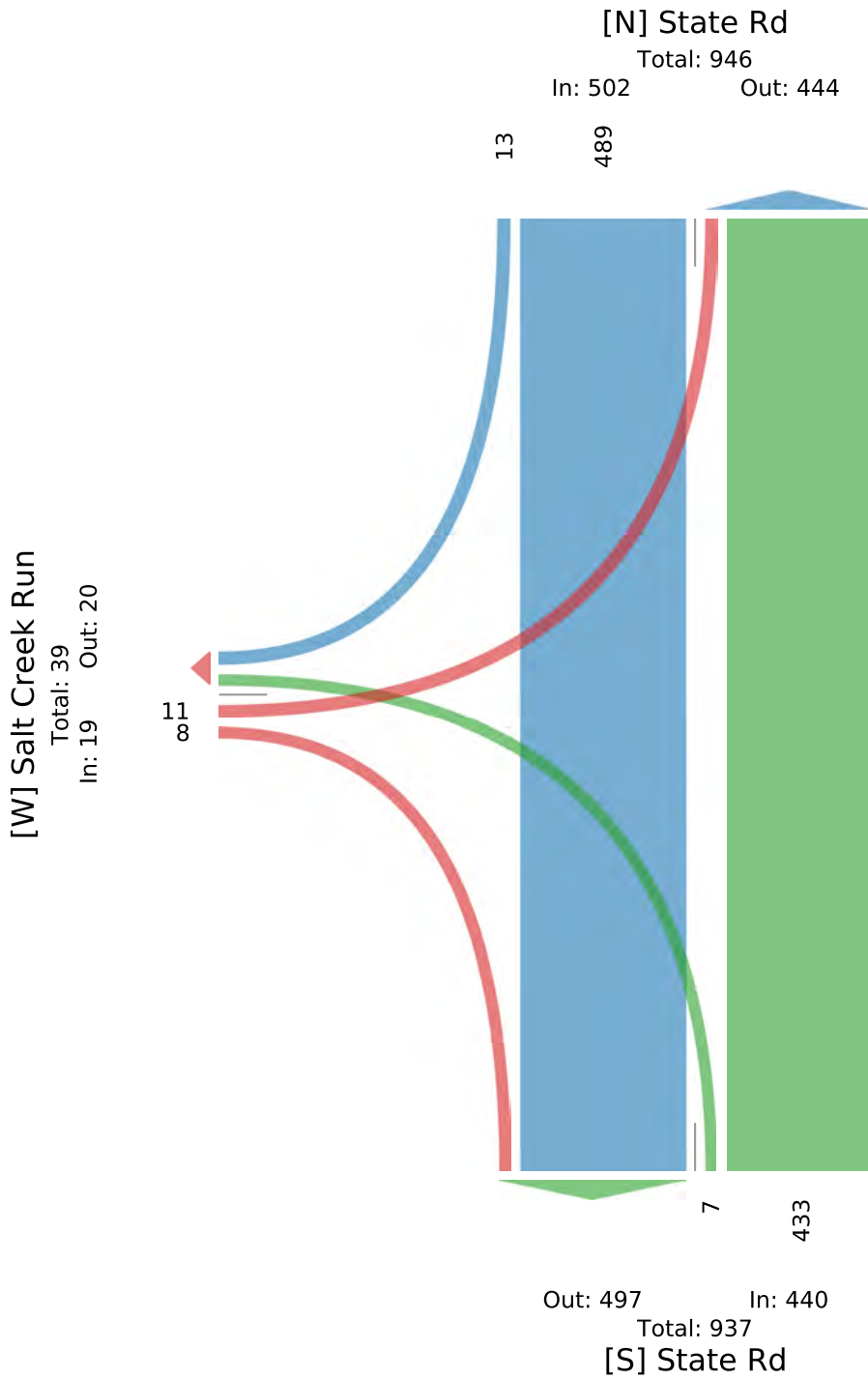
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835076, Location: 41.195923, -81.50229

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Salt Creek Run - TMC

Tue May 4, 2021

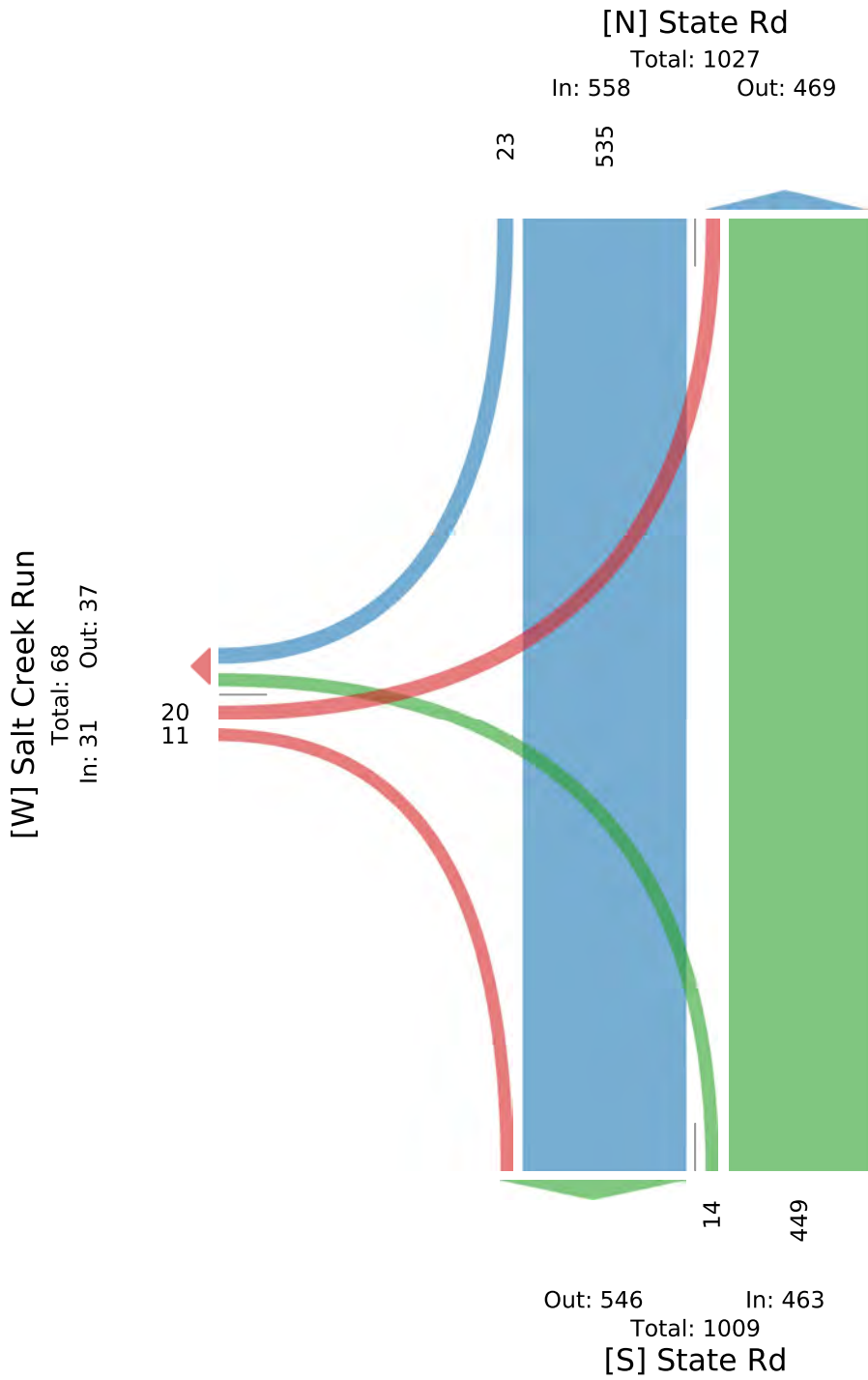
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835076, Location: 41.195923, -81.50229

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge North - TMC

Tue May 4, 2021

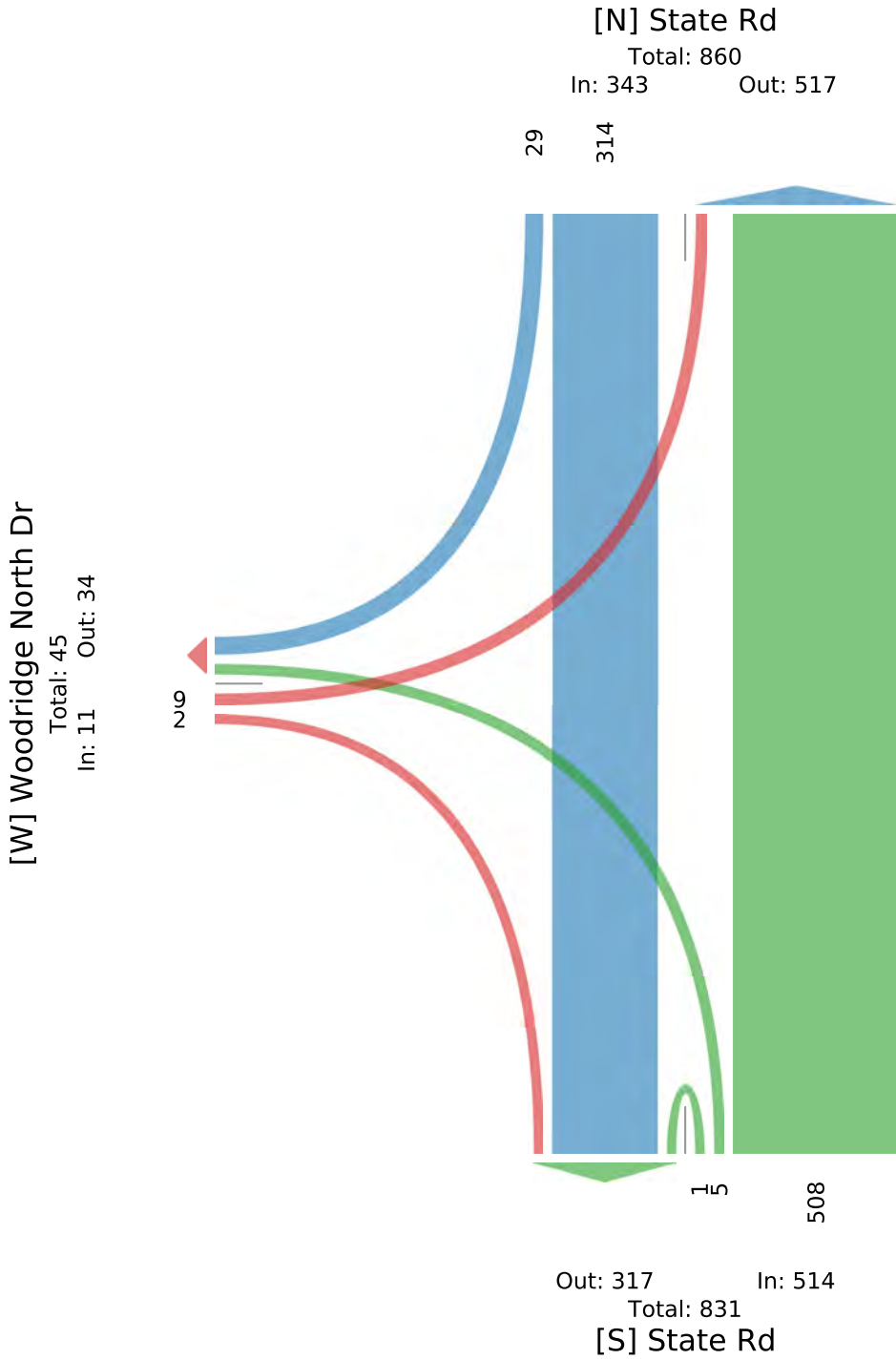
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835088, Location: 41.190167, -81.506373

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge North - TMC

Tue May 4, 2021

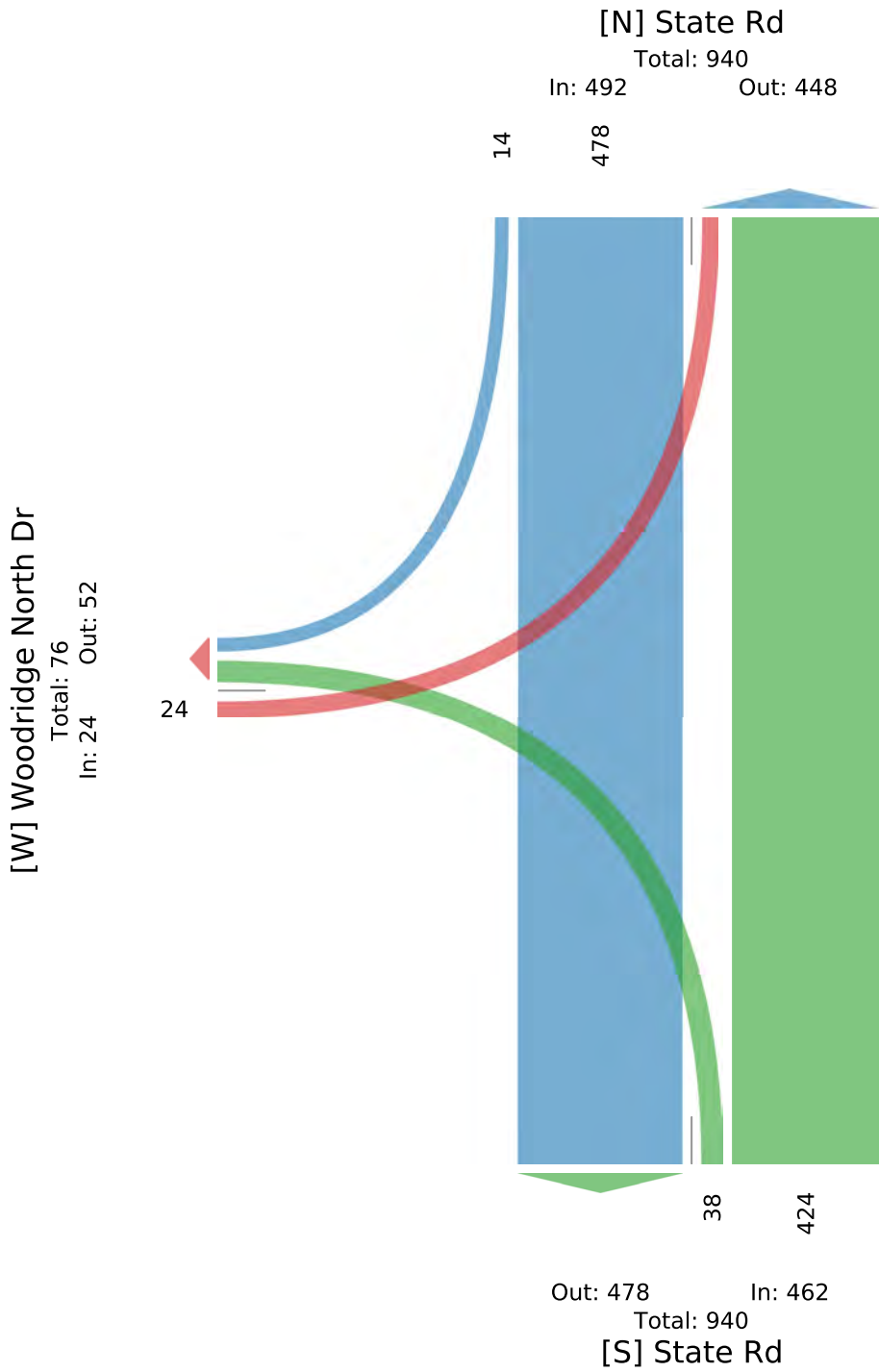
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835088, Location: 41.190167, -81.506373

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge North - TMC

Tue May 4, 2021

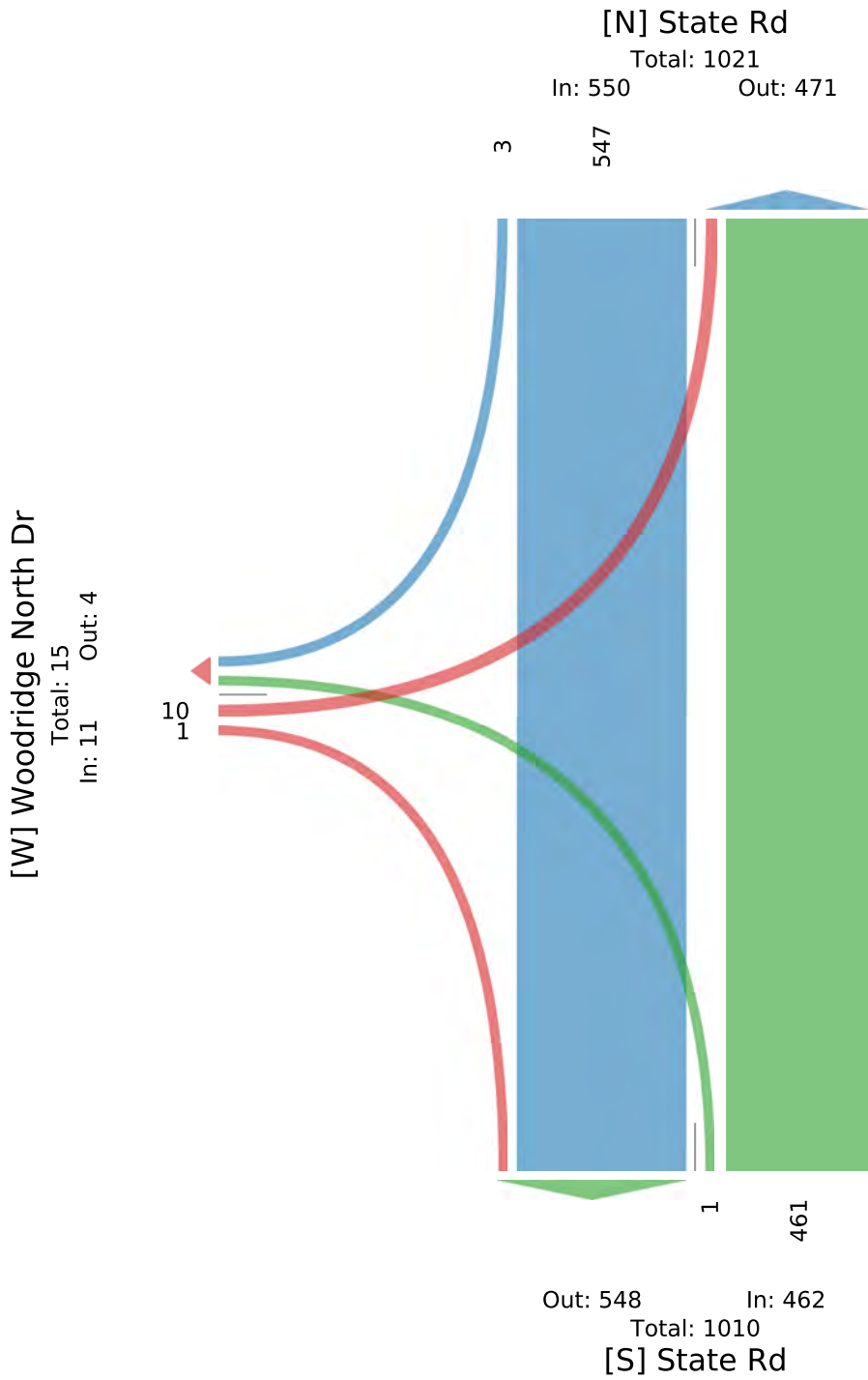
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835088, Location: 41.190167, -81.506373

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge South - TMC

Thu May 6, 2021

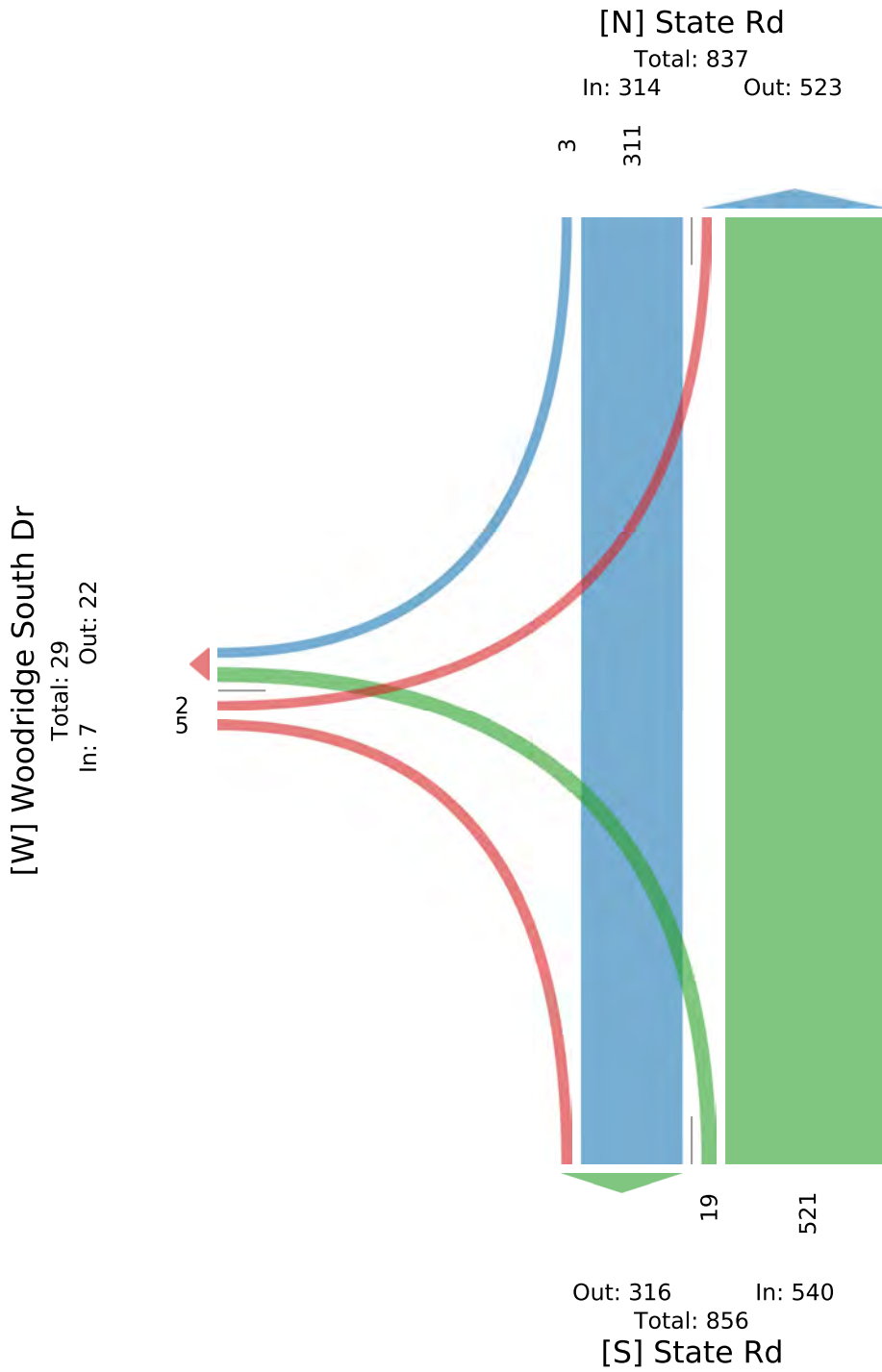
7:15 AM - 8:15 AM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835090, Location: 41.188342, -81.507338

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge South - TMC

Thu May 6, 2021

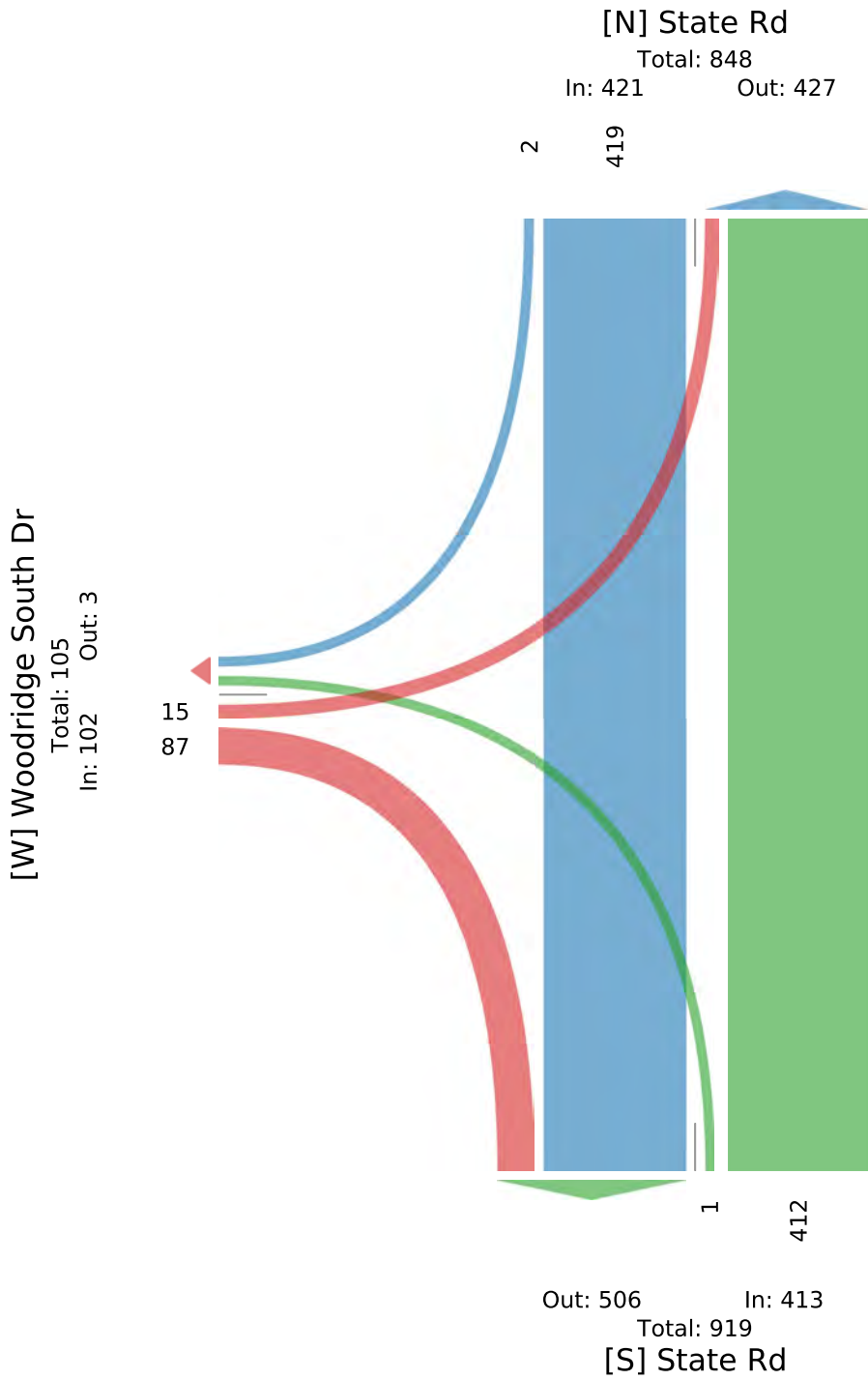
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835090, Location: 41.188342, -81.507338

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Woodridge South - TMC

Thu May 6, 2021

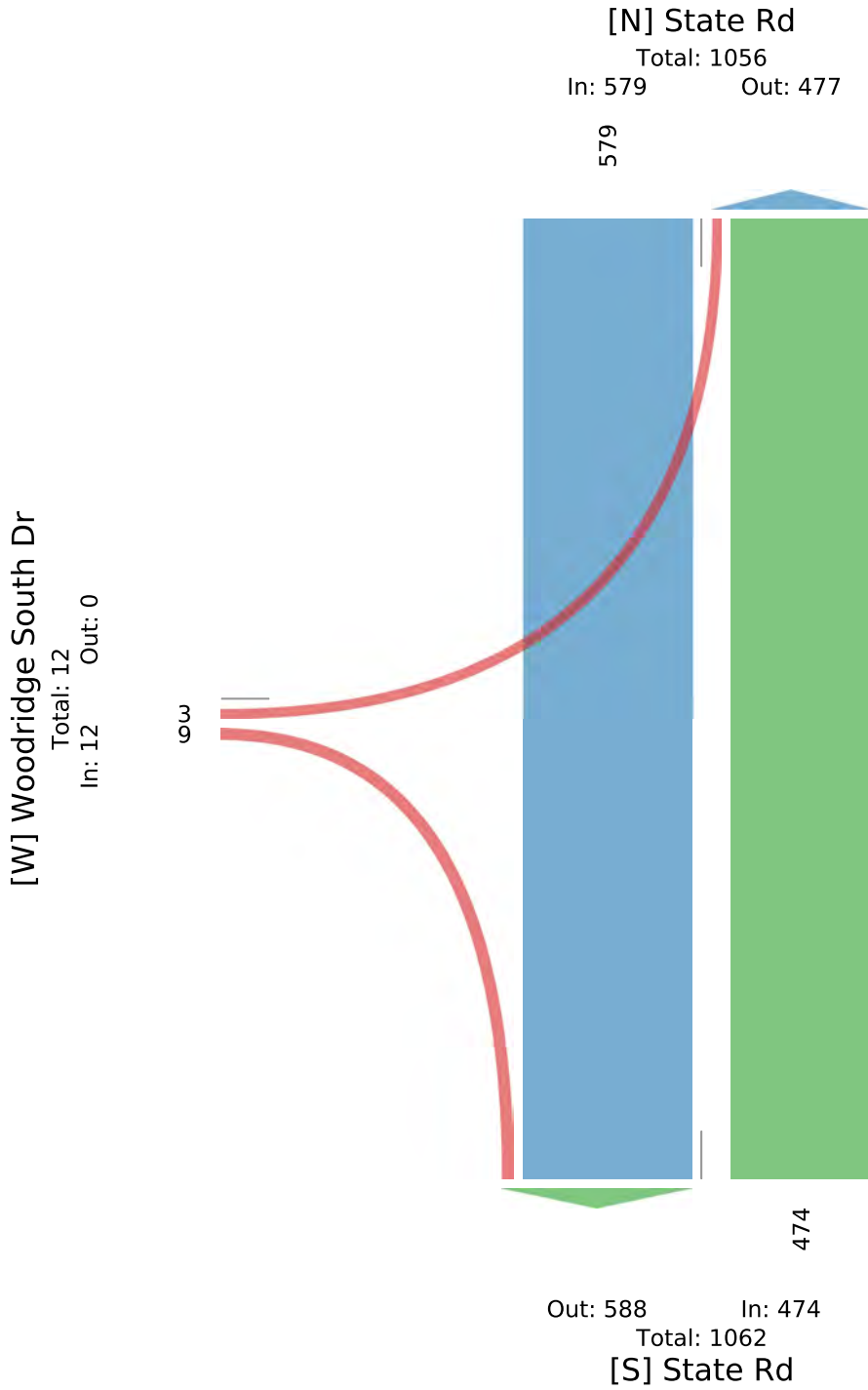
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835090, Location: 41.188342, -81.507338

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Cuyahoga Falls Industrial Pkwy. - TMC

Thur Sep 9, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	5	77	0	82	2	0	4	6	0	146	9	155	0	0	0	0
7:30	1	68	0	69	6	0	1	7	0	195	19	214	0	0	0	0
7:45	6	112	0	118	3	0	1	4	0	148	14	162	0	0	0	0
8:00	3	64	0	67	18	0	2	20	0	121	8	129	0	0	0	0
TOTAL	15	321	0	336	29	0	8	37	0	610	50	660	0	0	0	0
PHF	0.71				0.46				0.77				0			

State Rd & Cuyahoga Falls Industrial Pkwy - TMC

Thu May 6, 2021

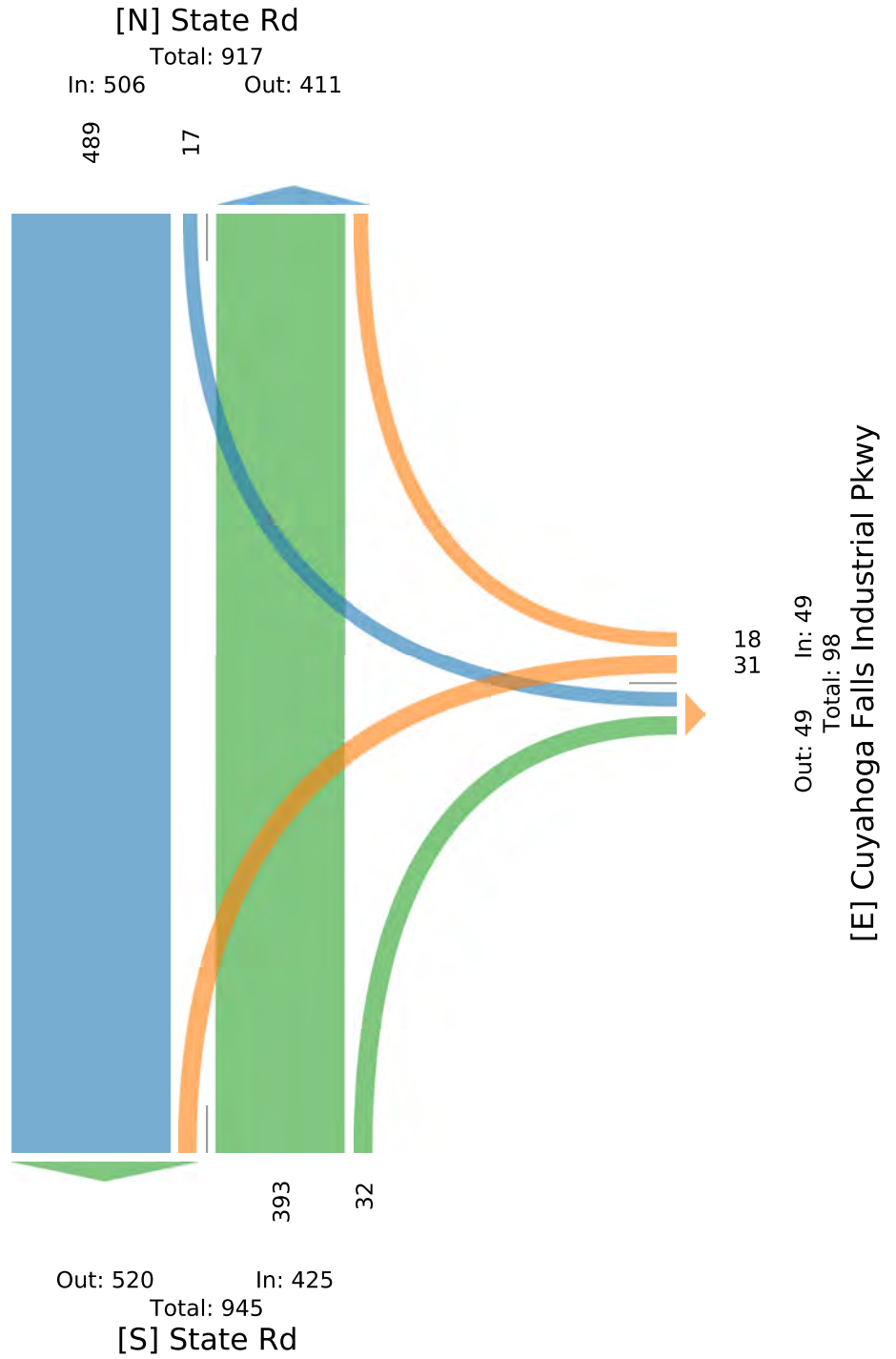
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835055, Location: 41.187079, -81.507896

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Cuyahoga Falls Industrial Pkwy - TMC

Thu May 6, 2021

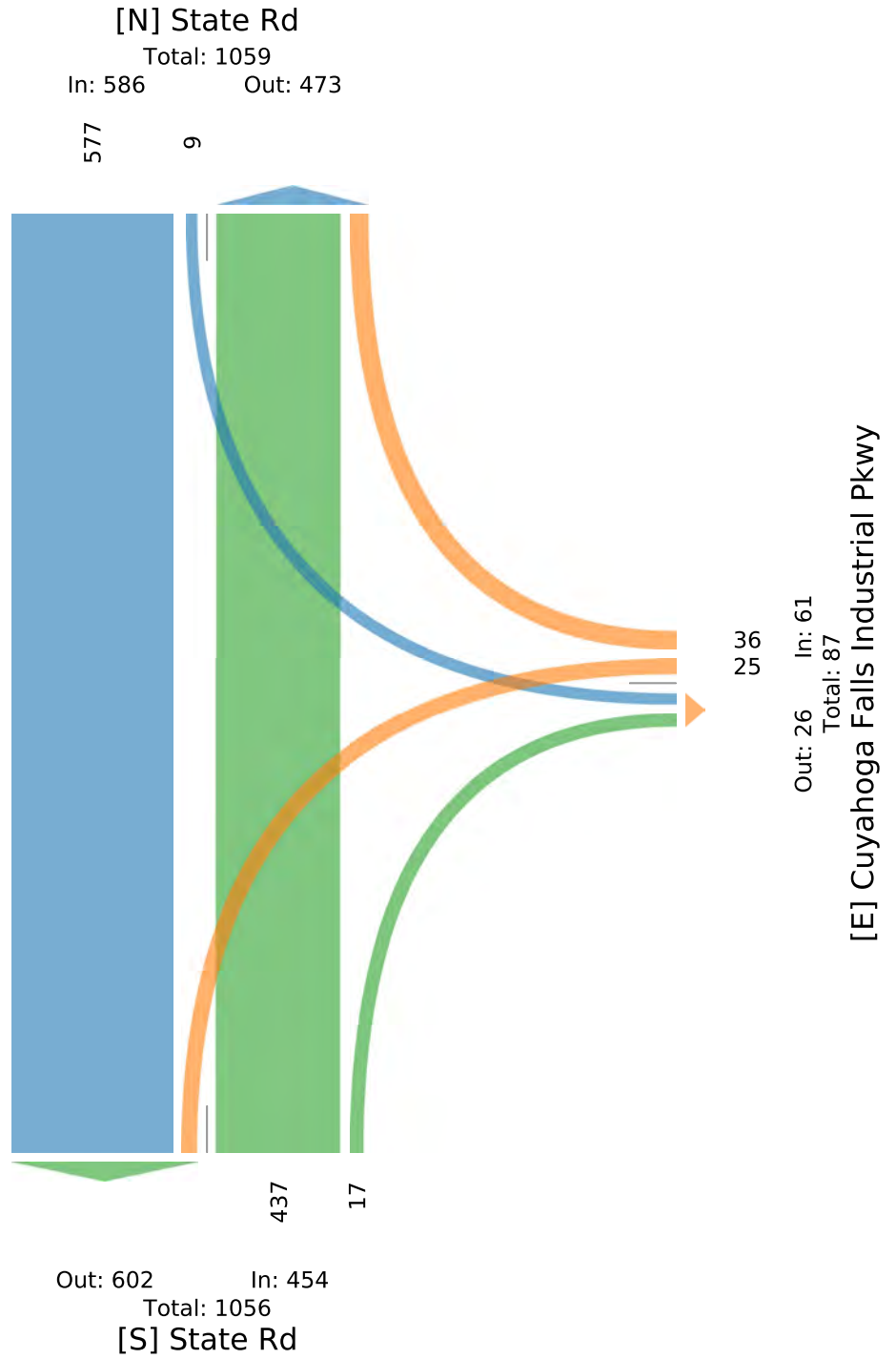
PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835055, Location: 41.187079, -81.507896

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State & Audi/Quick - TMC

Thu May 6, 2021

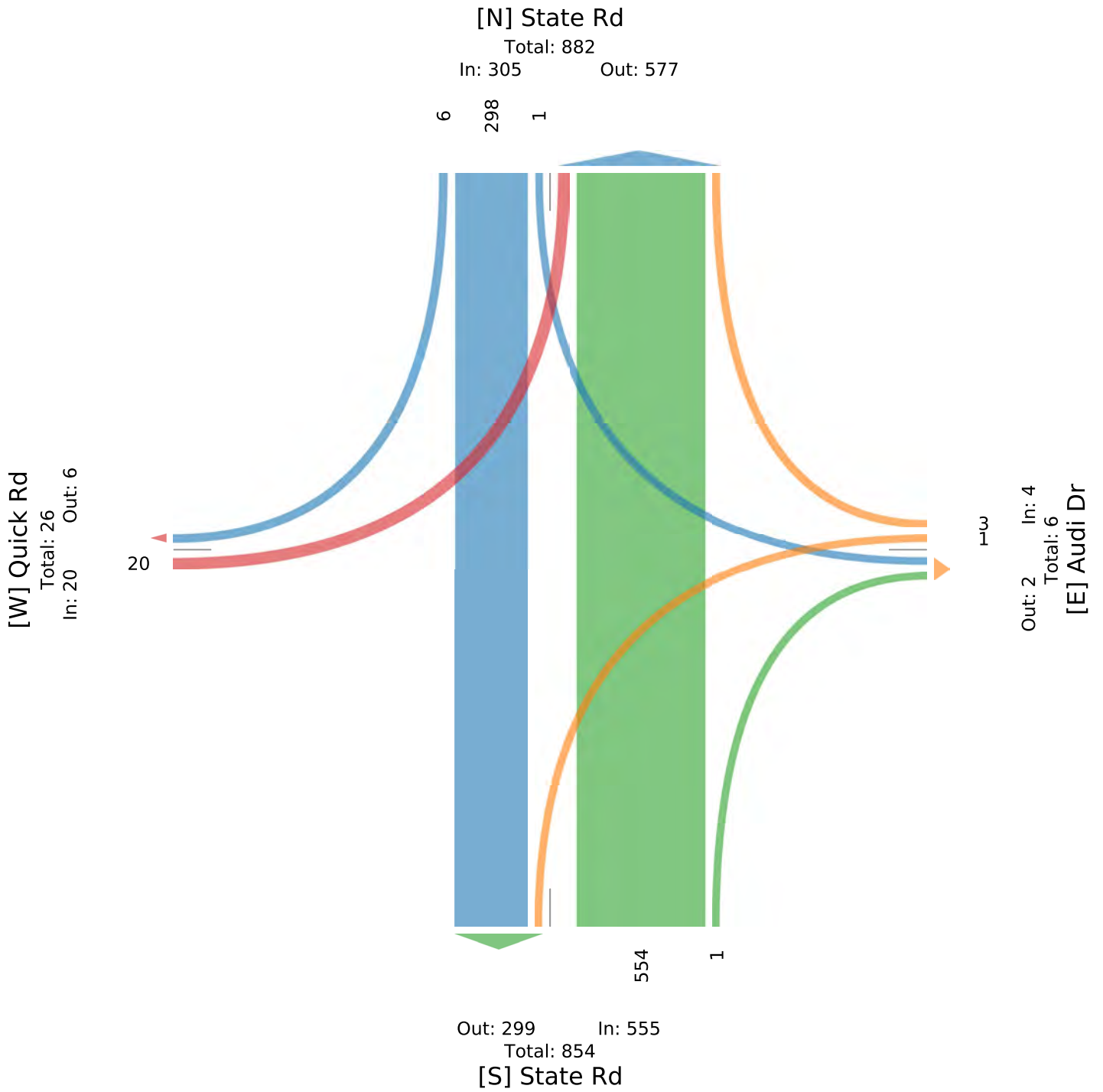
7:15 AM - 8:15 AM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835077, Location: 41.186149, -81.508254

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State & Audi/Quick - TMC

Thu May 6, 2021

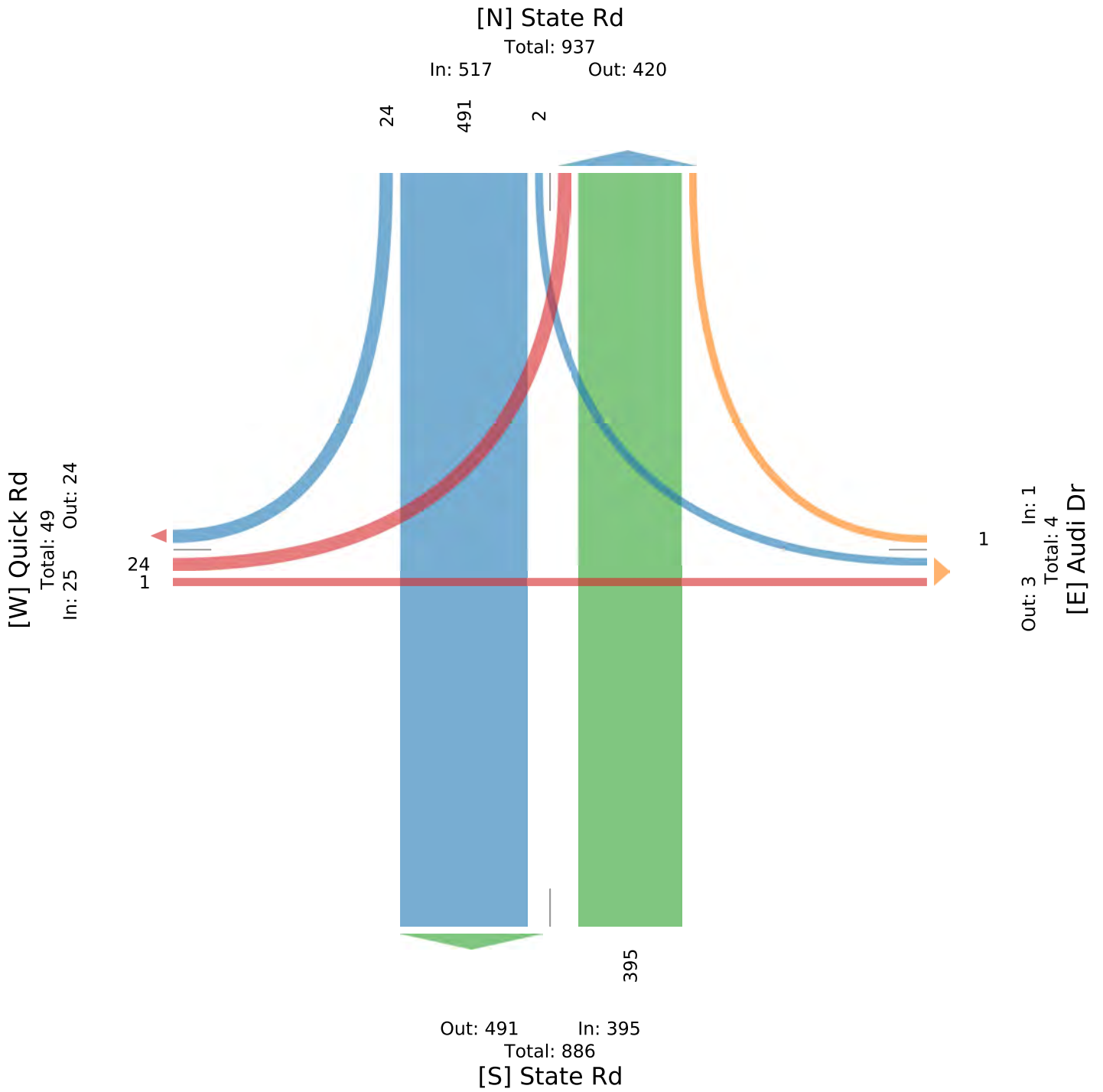
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835077, Location: 41.186149, -81.508254

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State & Audi/Quick - TMC

Thu May 6, 2021

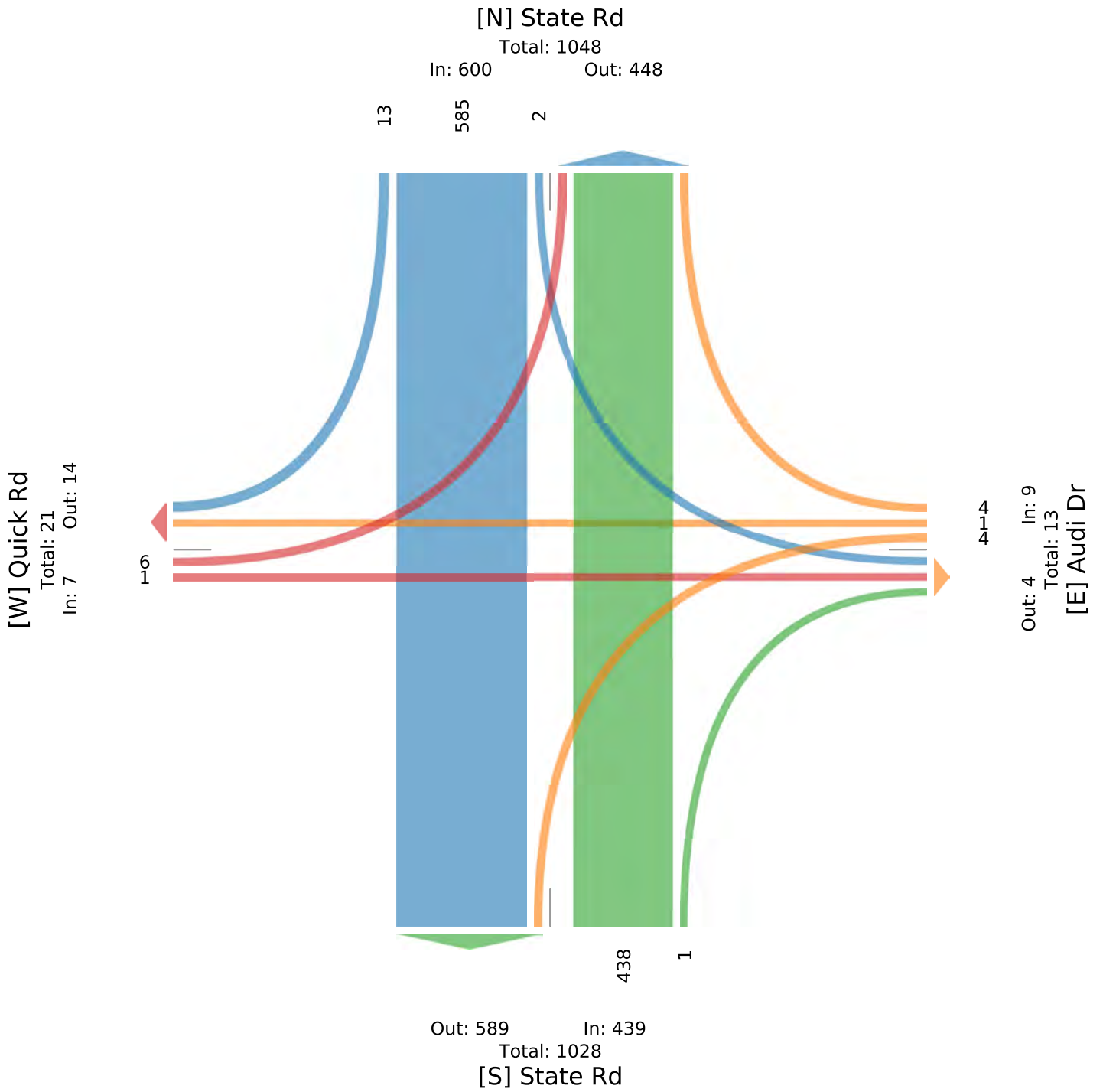
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835077, Location: 41.186149, -81.508254

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Quick Rd - TMC

Tue May 11, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837114, Location: 41.185703, -81.508384

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] State Rd

Total: 883

In: 292 Out: 591

289

3

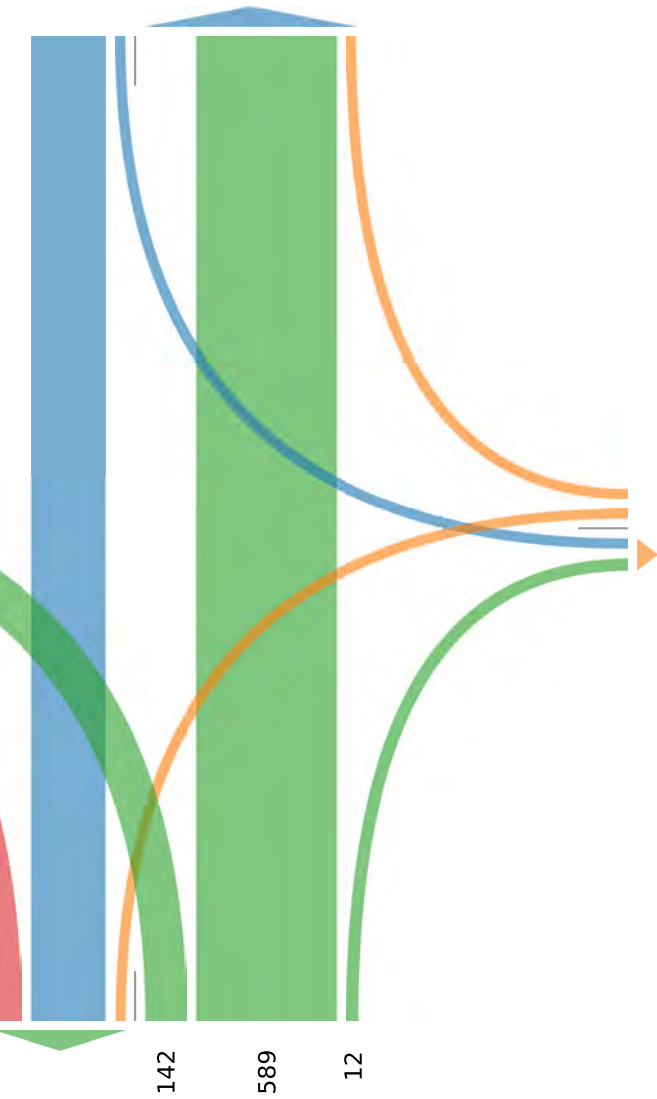
[W] Quick Rd

Total: 220
In: 78 Out: 142

78

NN

Out: 15 In: 4
Total: 19
[E] East



Out: 369 In: 743
Total: 1112
[S] State Rd

State Rd & Quick Rd - TMC

Tue May 11, 2021

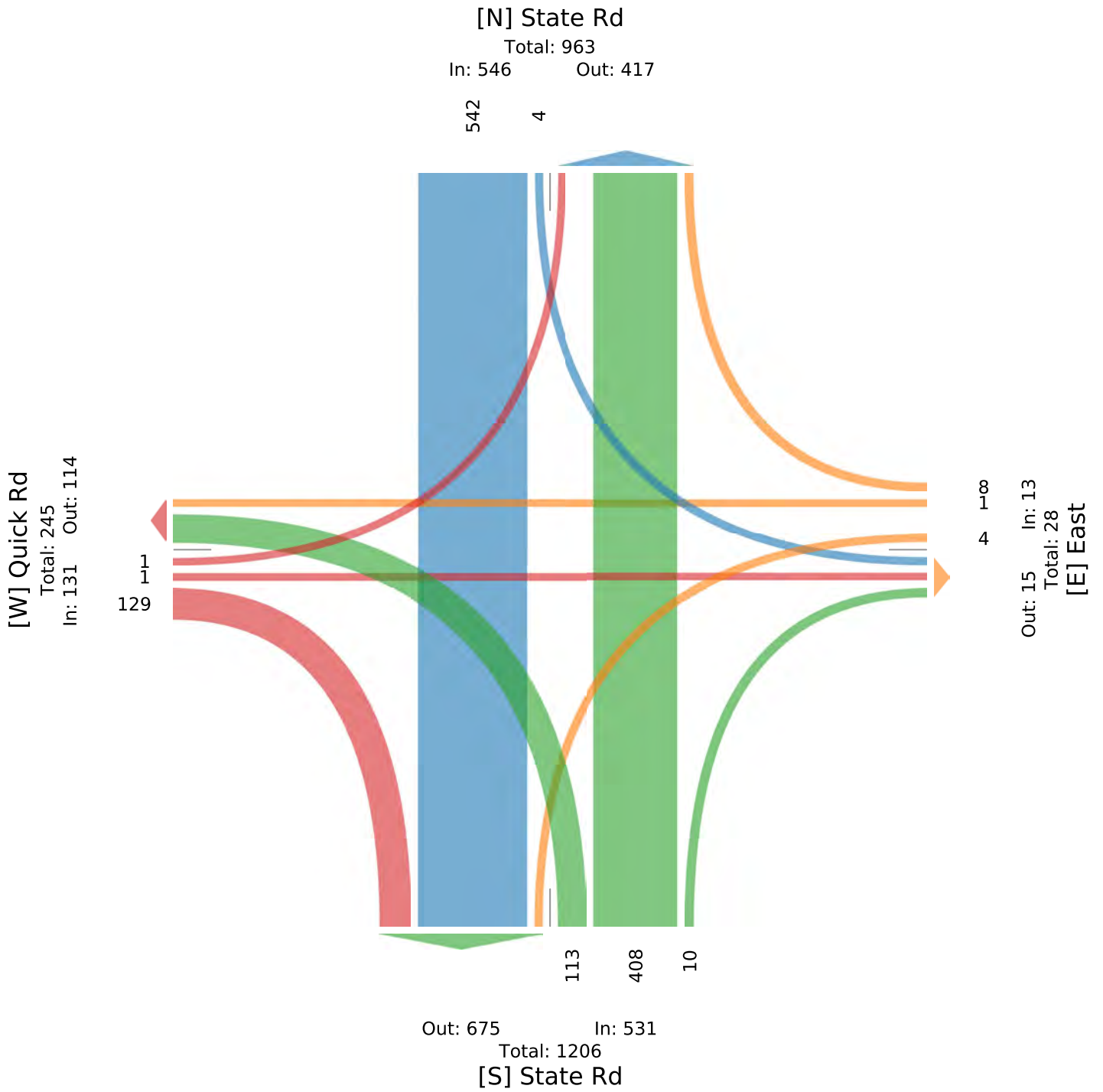
PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837114, Location: 41.185703, -81.508384

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Quick Rd - TMC

Tue May 11, 2021

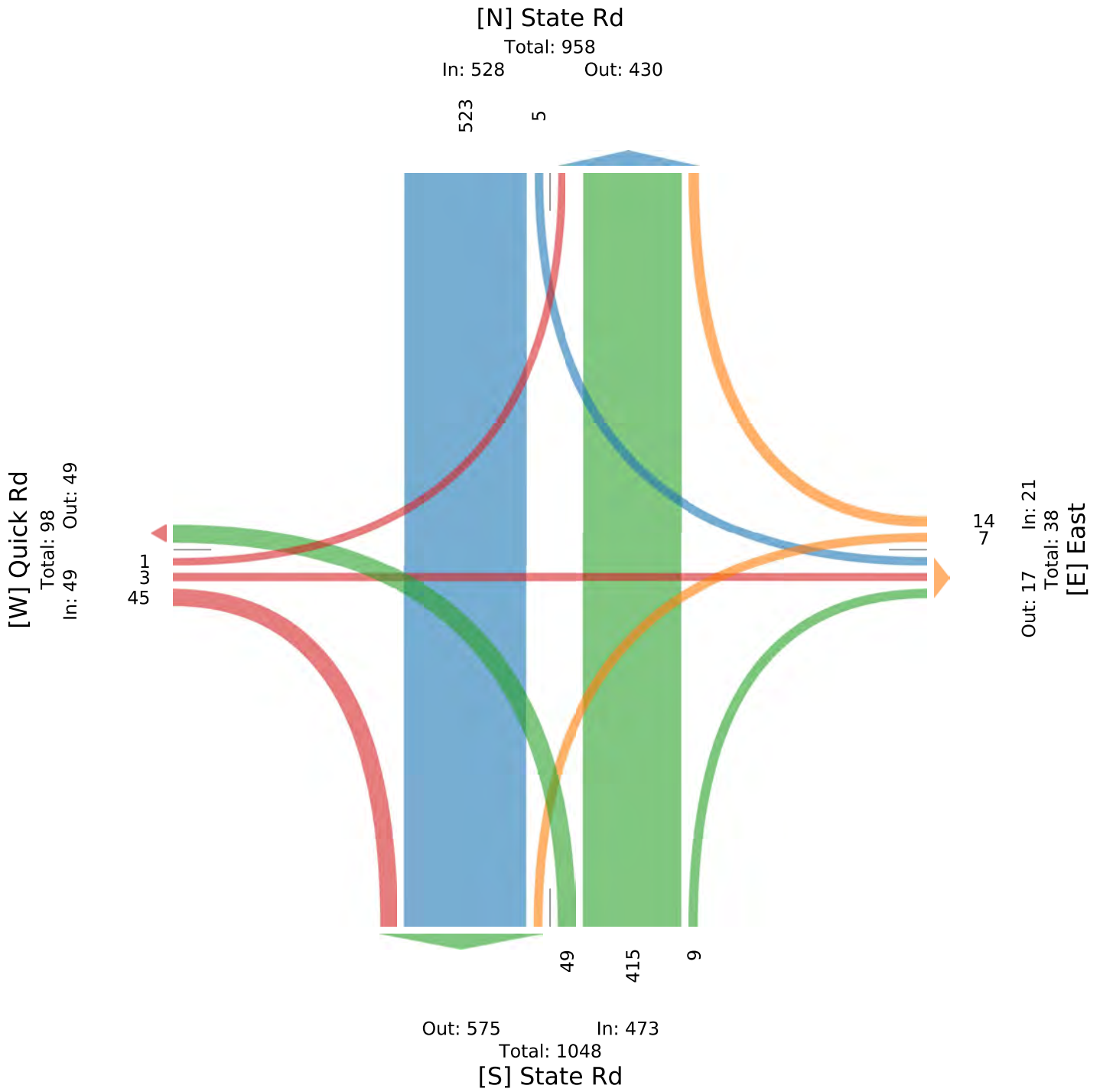
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837114, Location: 41.185703, -81.508384

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Kimberlyn Dr. - TMC

Thur Sep 9, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	0	153	1	154	0	0	0	0	5	281	0	286	3	0	2	5
7:30	0	120	0	120	0	0	0	0	2	241	0	243	4	0	0	4
7:45	0	128	1	129	0	0	0	0	4	204	0	208	0	0	3	3
8:00	0	89	2	91	0	0	0	0	3	158	0	161	1	0	2	3
TOTAL	0	490	4	494	0	0	0	0	14	884	0	898	8	0	7	15
PHF	0.80				0.00				0.78				0.75			

State Rd & Kimberlyn Dr - TMC

Tue May 11, 2021

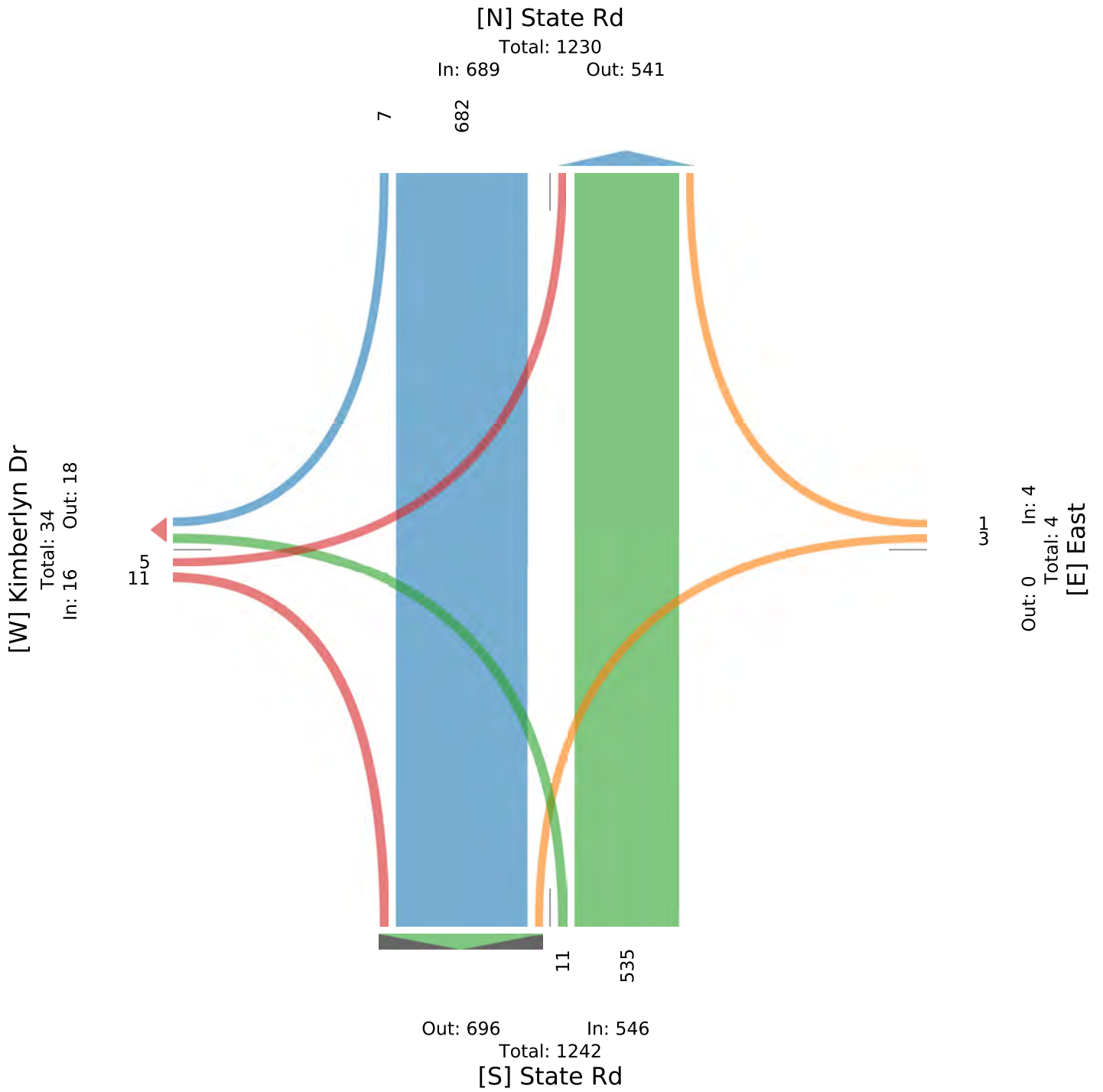
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837142, Location: 41.183782, -81.508593

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Kimberlyn Dr - TMC

Tue May 11, 2021

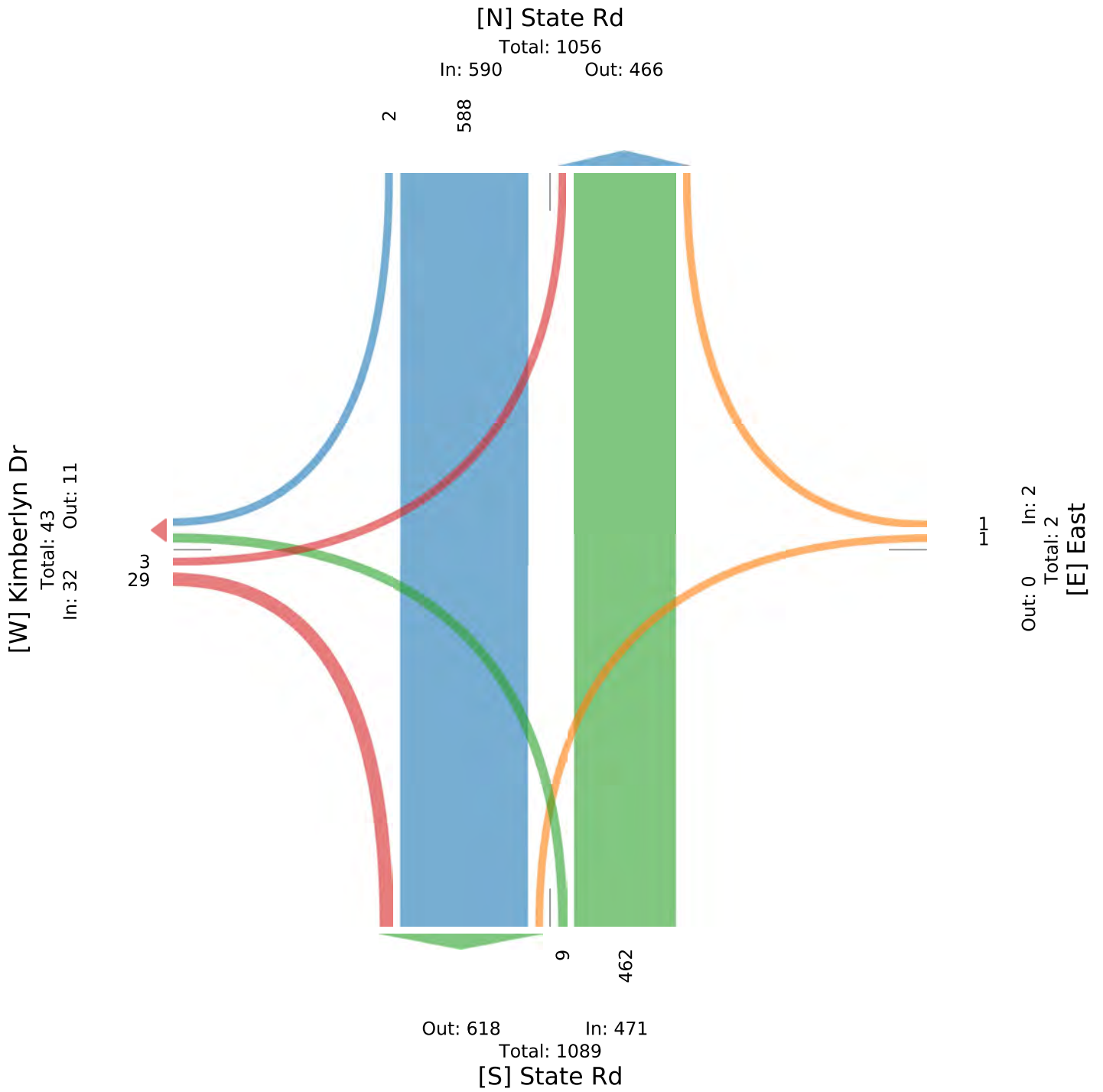
PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837142, Location: 41.183782, -81.508593

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd. & Steels Corners Rd. - TMC

Wed Sep 8, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	37	95	41	173	16	30	87	133	4	127	14	145	95	79	19	193
7:30	25	77	36	138	33	58	43	134	13	109	30	152	79	84	174	337
7:45	12	63	23	98	42	71	45	158	8	82	22	112	49	66	16	131
8:00	13	64	15	92	24	41	22	87	11	84	28	123	41	47	9	97
TOTAL	87	299	115	501	115	200	197	512	36	402	94	532	264	276	218	758
PHF	0.72				0.81				0.88				0.56			

State Rd & Steels Corners Rd - TMC

Thu May 13, 2021

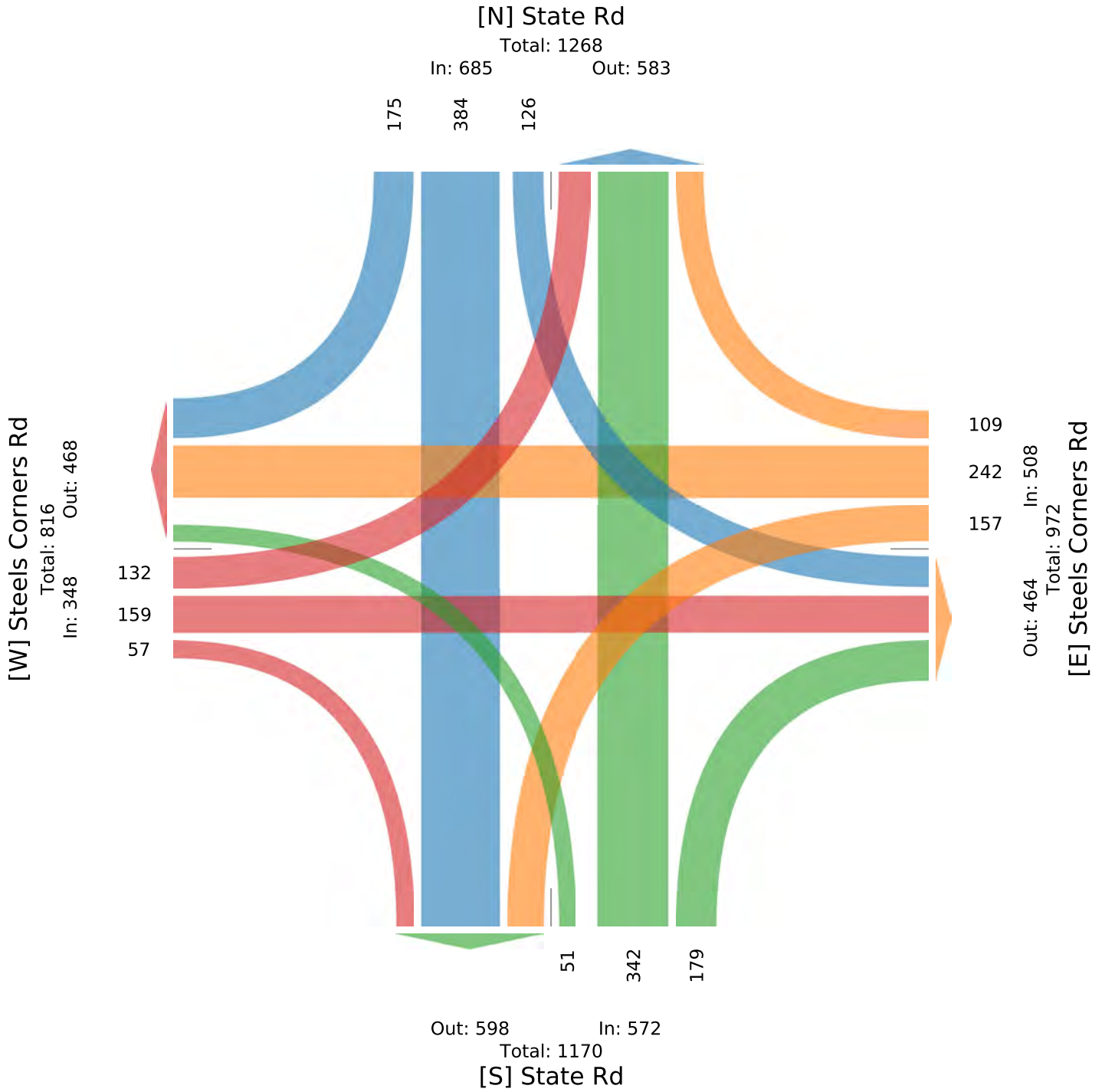
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837140, Location: 41.180966, -81.508557

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



State Rd & Steels Corners Rd - TMC

Thu May 13, 2021

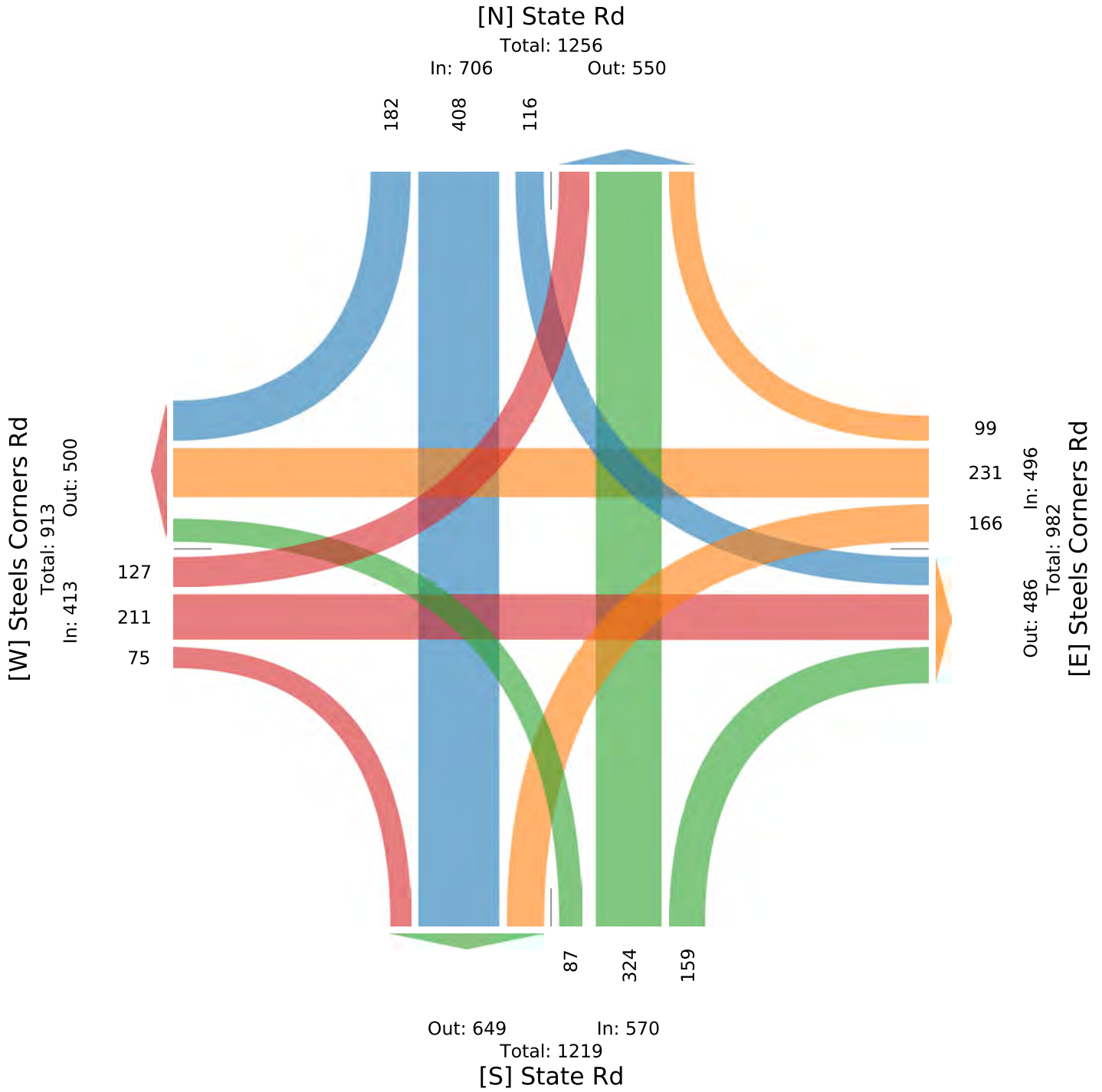
PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837140, Location: 41.180966, -81.508557

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Steels Corners Rd & Koir Dr - TMC

Thu May 13, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837127, Location: 41.180991, -81.504902

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] AmeriChem Dr

Total: 10

In: 4 Out: 6

2

[W] Steels Corners Rd

Total: 870

In: 385

Out: 485

383

1

1

5

482

1

In: 488

Out: 385

Total: 873

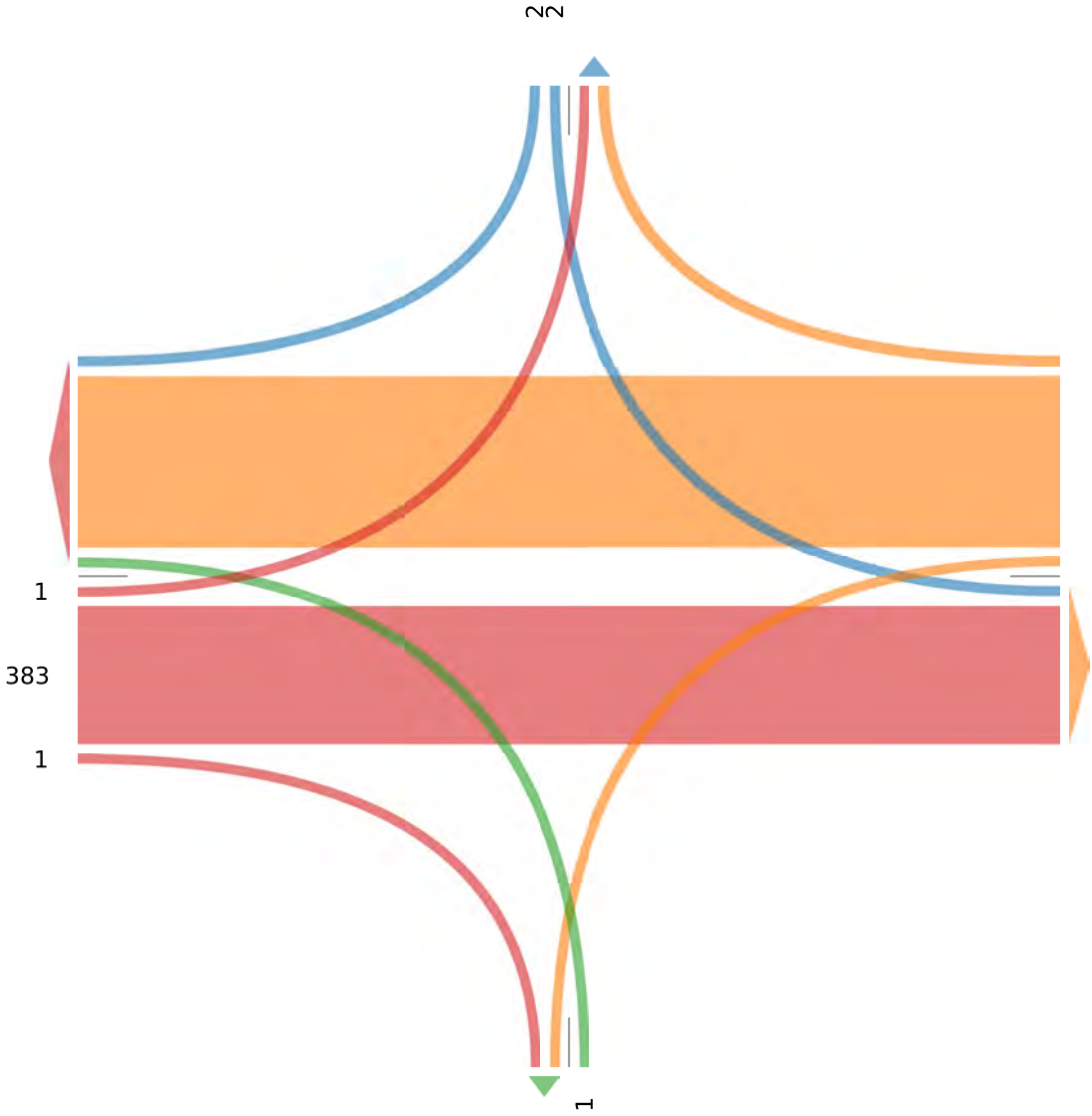
[E] Steels Corners Rd

Out: 2 In: 1

Total: 3

[S] Koir Dr

1



Steels Corners Rd & Koir Dr - TMC

Thu May 13, 2021

2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837127, Location: 41.180991, -81.504902

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] AmeriChem Dr

Total: 14

In: 12 Out: 2

60

[W] Steels Corners Rd

Total: 970

In: 473 Out: 497

471

2

Out: 2 In: 1

Total: 3

[S] Koir Dr

2

490

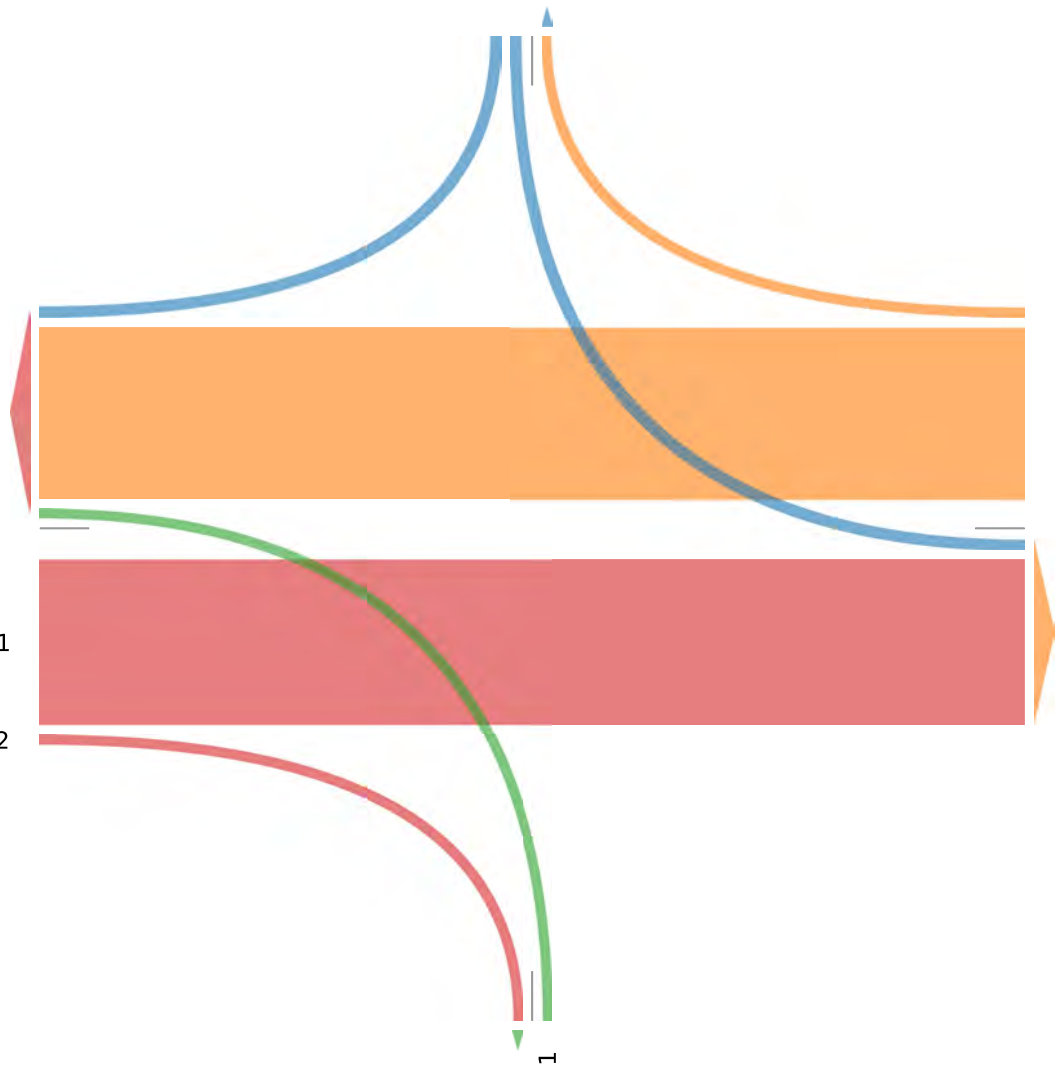
In: 492

Total: 969

Out: 477

[E] Steels Corners Rd

1



Steels Corners Rd & Koir Dr - TMC

Thu May 13, 2021

4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 837127, Location: 41.180991, -81.504902

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] AmeriChem Dr

Total: 9

In: 6 Out: 3

2

[W] Steels Corners Rd

Total: 960
In: 484 Out: 476

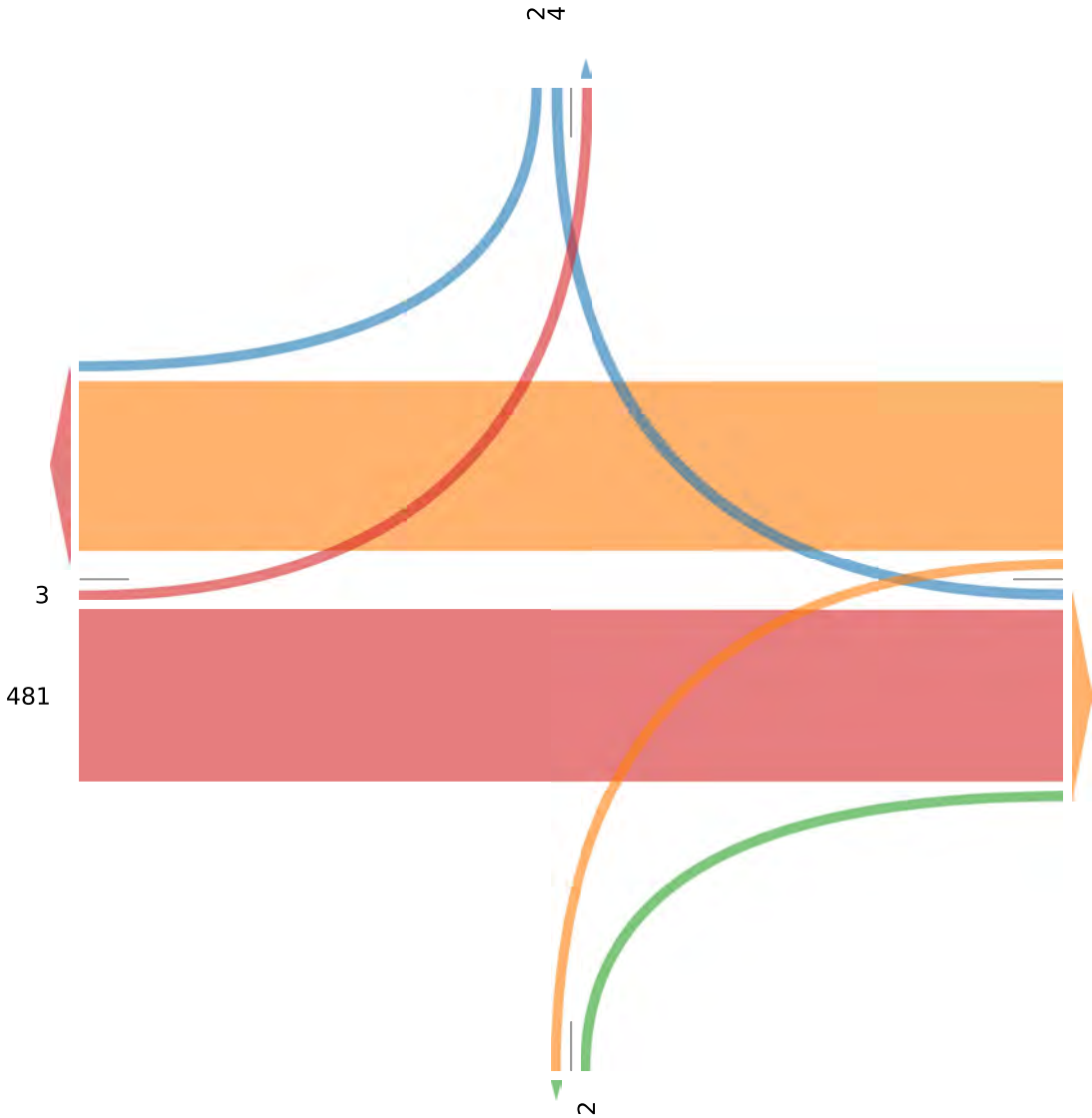
3
481

474
1
In: 475
Out: 487
Total: 962

[E] Steels Corners Rd

Out: 1 In: 2
Total: 3

[S] Koir Dr



Steels Corners Rd & Lippman Pkwy - TMC

Tue Apr 27, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

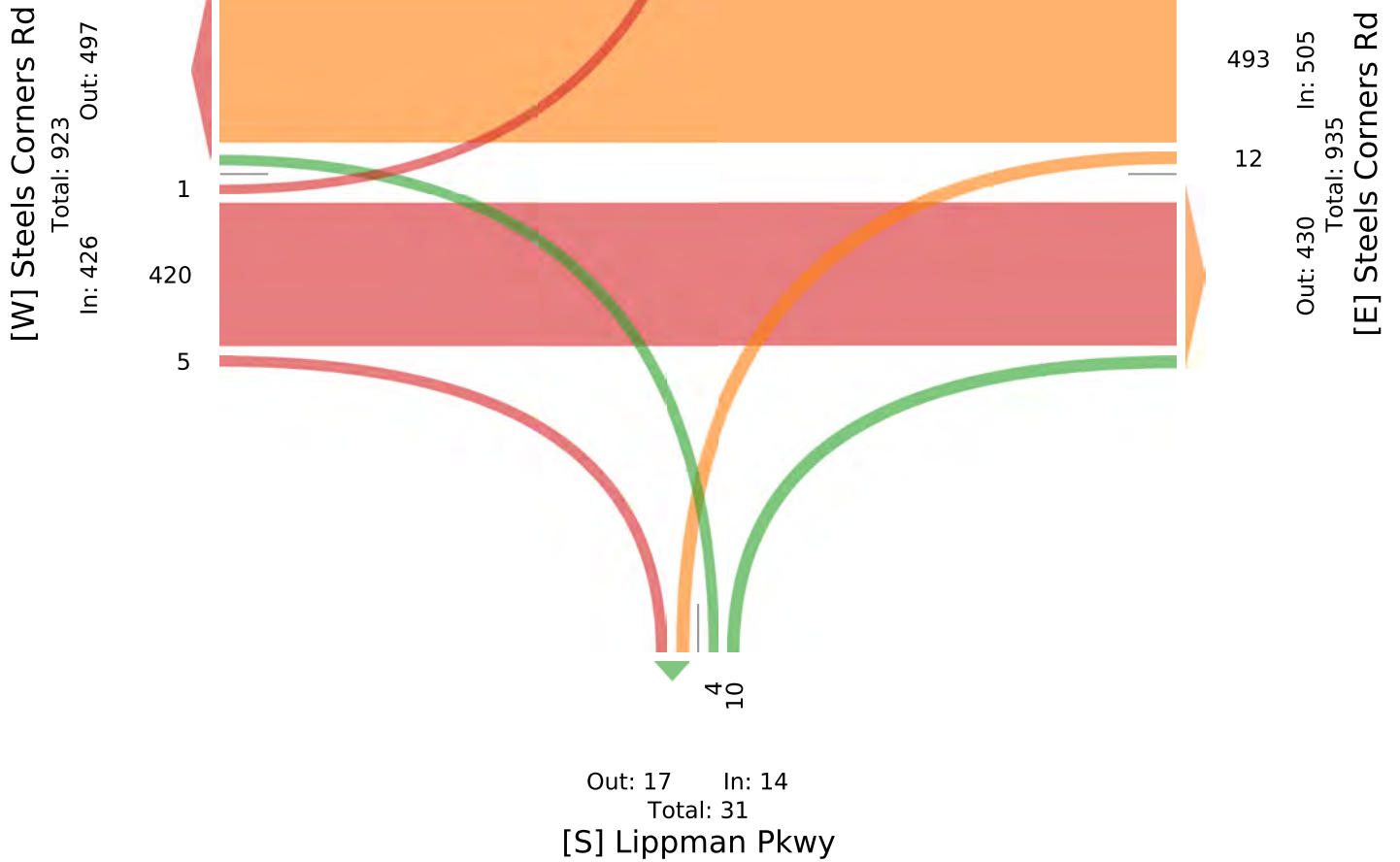
ID: 835086, Location: 41.181005, -81.501189

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] North

Total: 1

In: 0 Out: 1



Steels Corners Rd & Lippman Pkwy - TMC

Tue Apr 27, 2021

PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835086, Location: 41.181005, -81.501189

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] North

Total: 1

In: 1 Out: 0

1

[W] Steels Corners Rd

Total: 973
In: 434 Out: 539

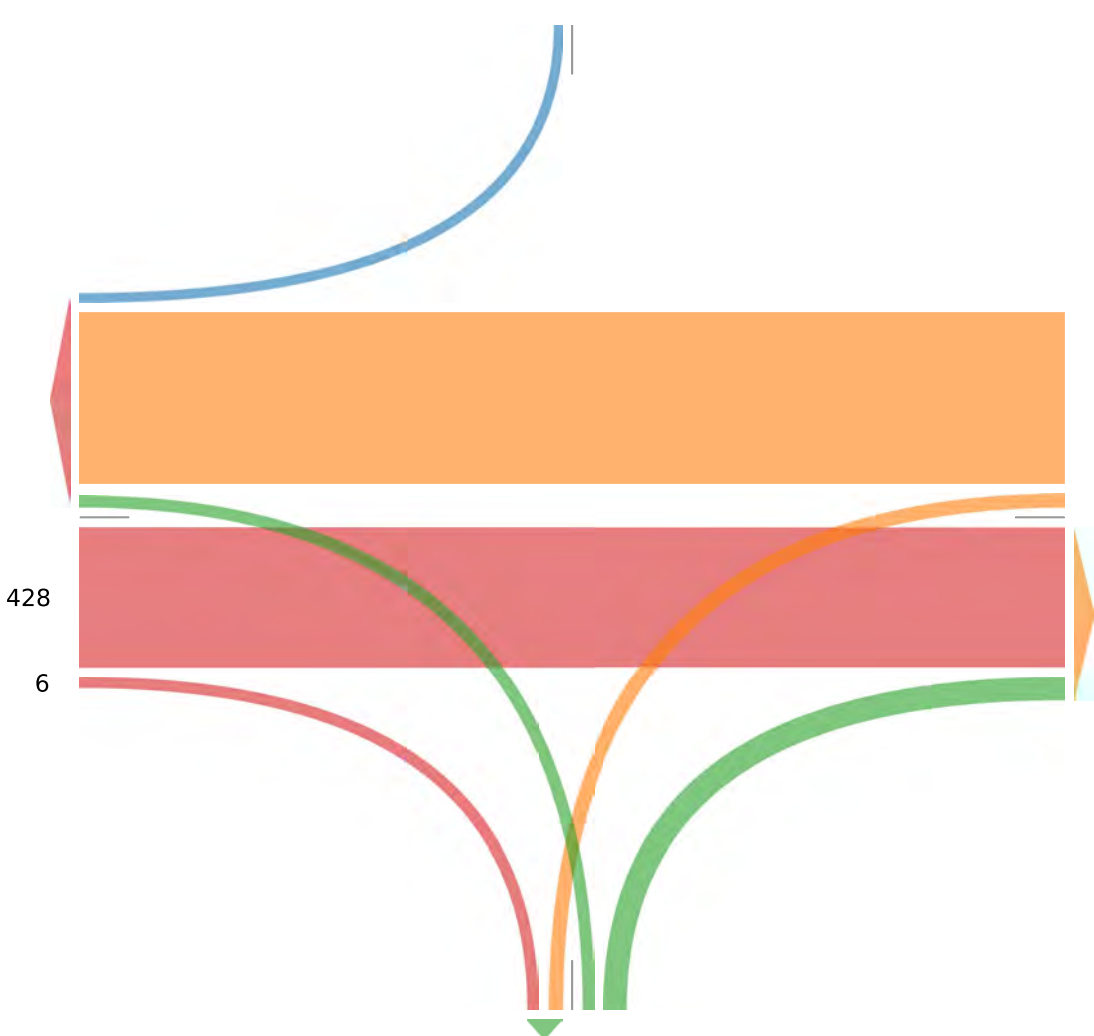
428
6

530
15
Out: 474 In: 545
Total: 1019
[E] Steels Corners Rd

Out: 21 In: 54
Total: 75

[S] Lippman Pkwy

8
46



Steels Corners Rd & Lippman Pkwy - TMC

Tue Apr 27, 2021

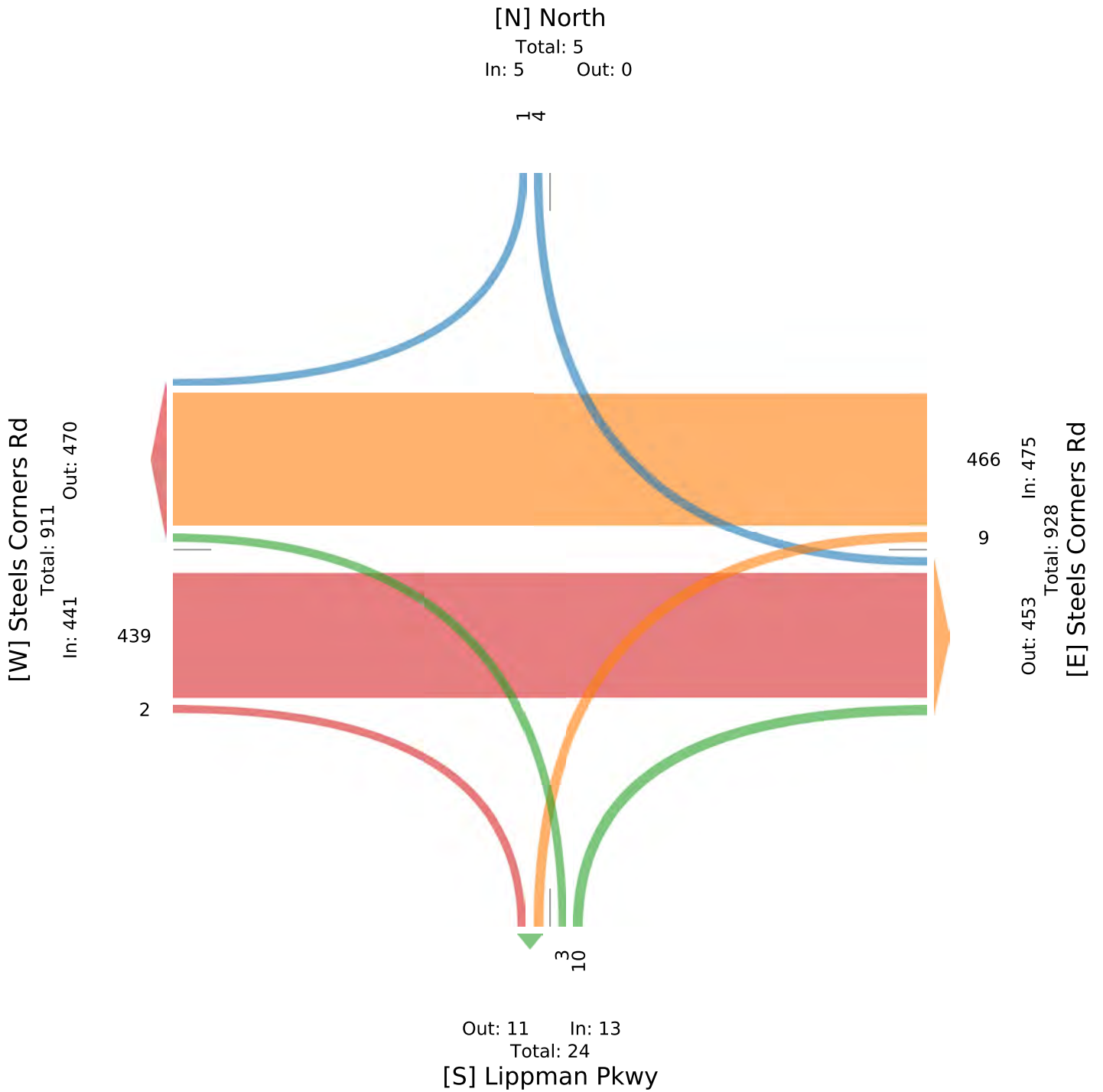
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835086, Location: 41.181005, -81.501189

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Steels Corners Rd & Struktol Dr - TMC

Tue Apr 27, 2021

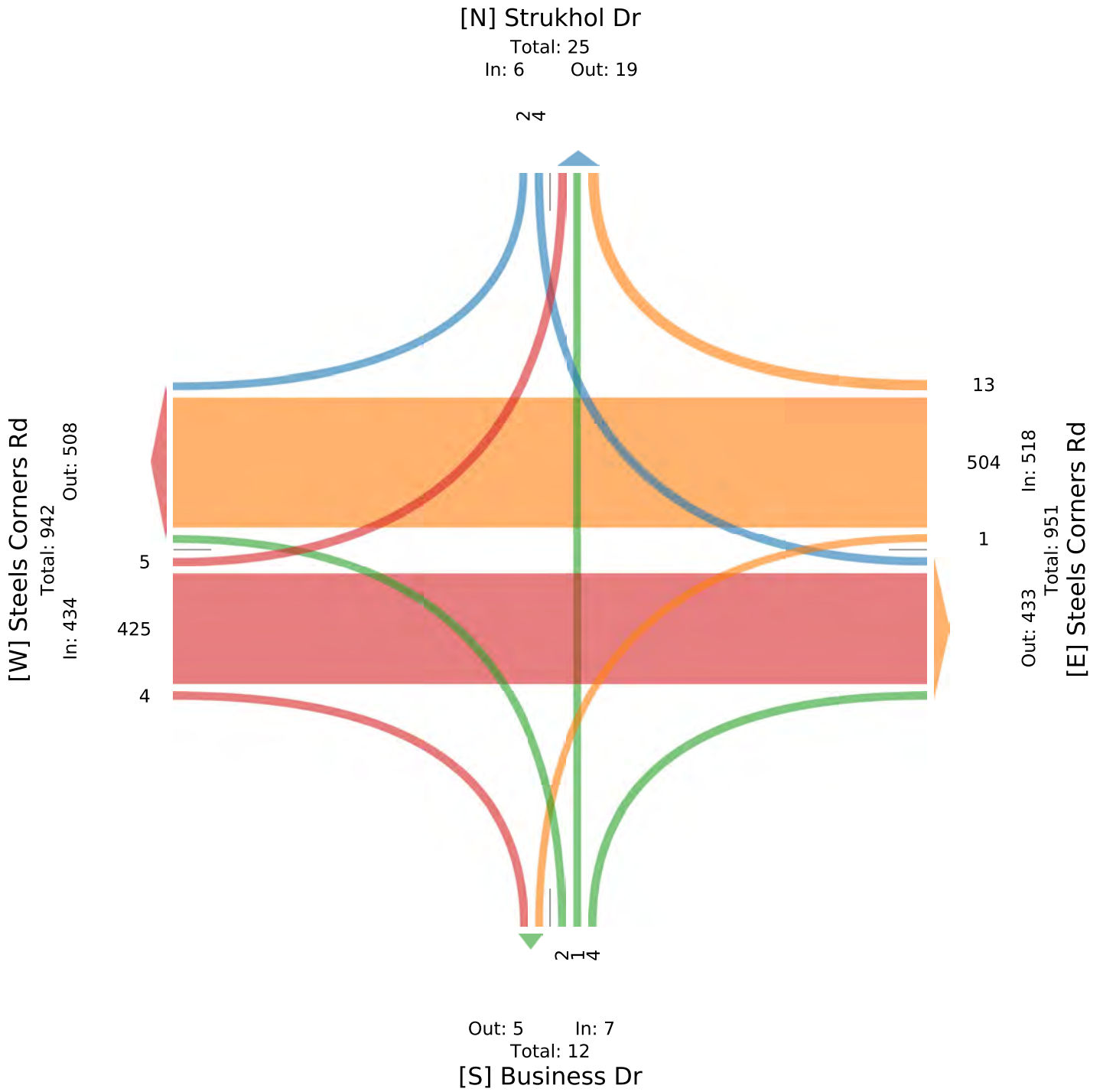
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835061, Location: 41.181013, -81.499265

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Steels Corners Rd & Struktol Dr - TMC

Tue Apr 27, 2021

PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835061, Location: 41.181013, -81.499265

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Strukhol Dr

Total: 14

In: 7 Out: 7

HO



[W] Steels Corners Rd
Total: 1008
In: 472 Out: 536

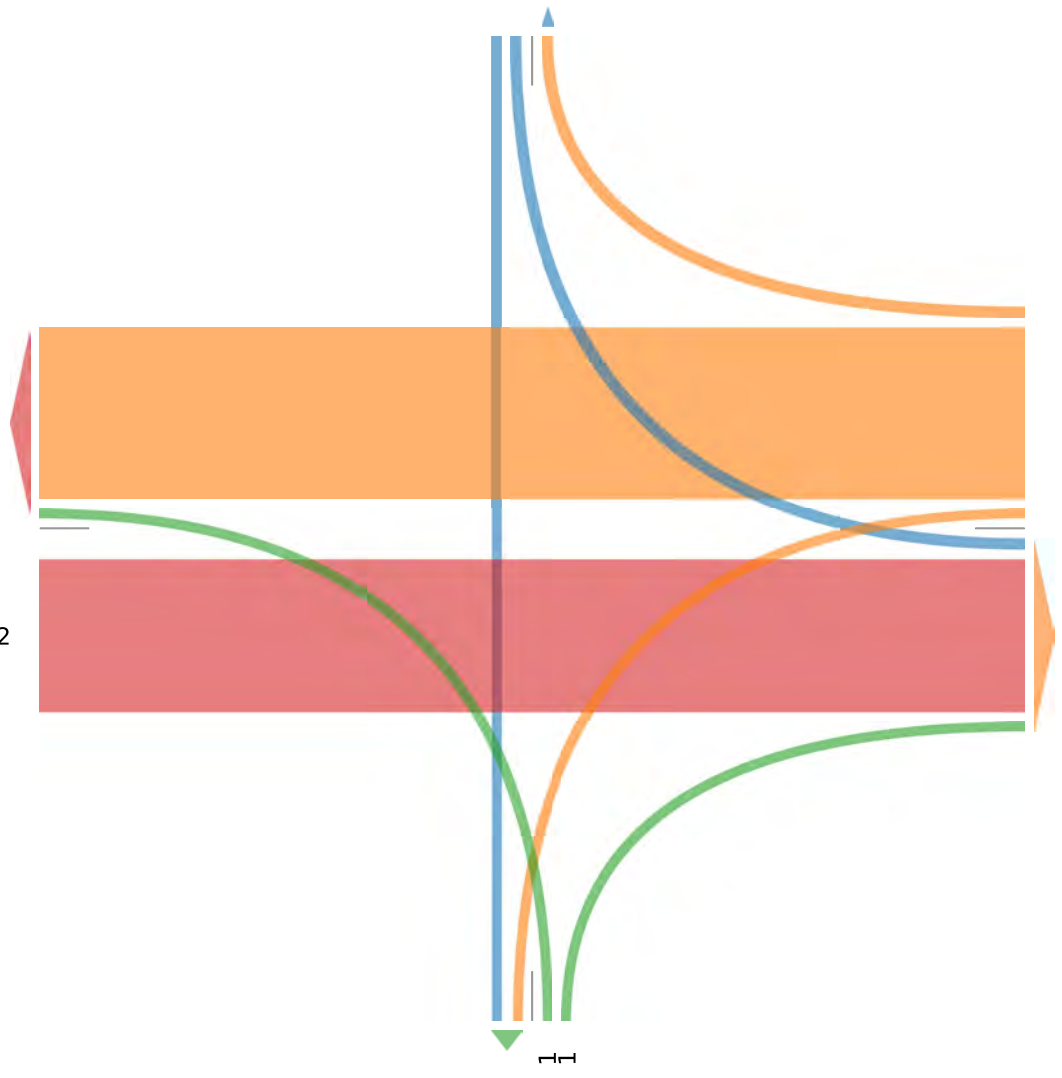
472

[E] Steels Corners Rd
Total: 1022
In: 543 Out: 479

7
535
1

Out: 2 In: 2
Total: 4

[S] Business Dr



Steels Corners Rd & Struktol Dr - TMC

Tue Apr 27, 2021

4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835061, Location: 41.181013, -81.499265

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Strukhol Dr

Total: 6

In: 5 Out: 1

5



1



5



1



4



5



1



4



5



1



4



5



1



4



5



1



4



5



1



4



5



1



4



5



1



4



5



1



4



5



1

Out: 5 In: 6

Total: 11

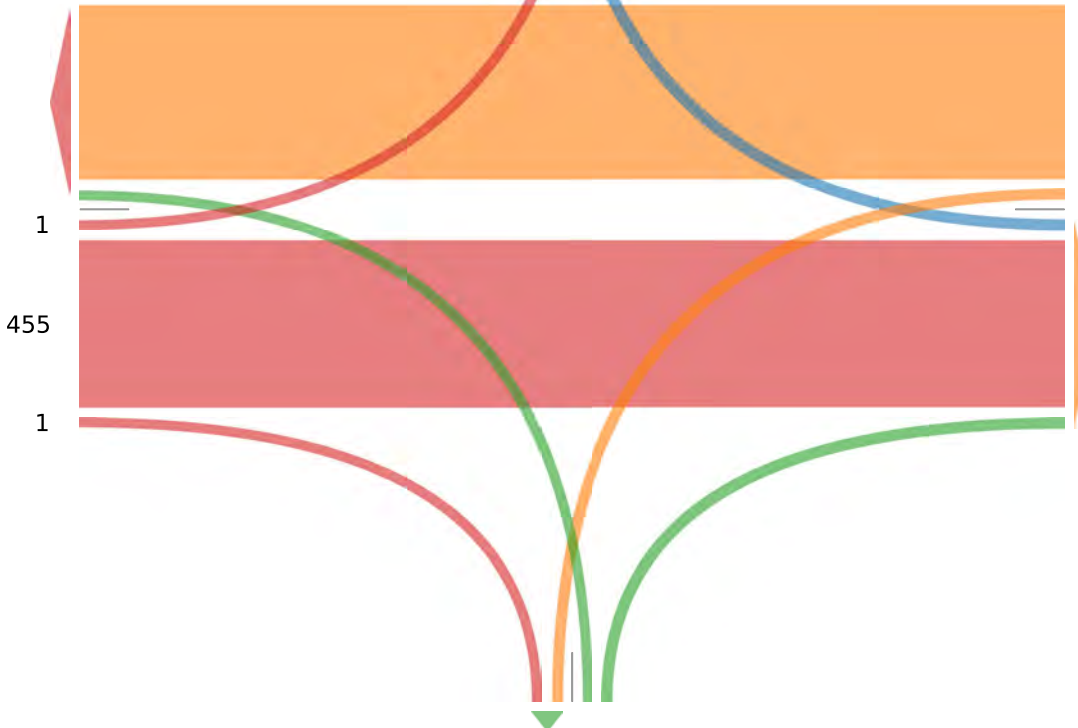
[S] Business Dr

[W] Steels Corners Rd

Total: 933

In: 457

Out: 476



475

4

455

1

In: 479

Total: 944

Out: 465

[E] Steels Corners Rd

Out: 5 In: 6

Total: 11

[S] Business Dr

Steels Corners Rd & Bonnett Dr - TMC

Tue Apr 27, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835052, Location: 41.181053, -81.496176

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Bonnett Dr

Total: 8

In: 6 Out: 2

42

[W] Steels Corners Rd

Total: 950
In: 426 Out: 524

2
424

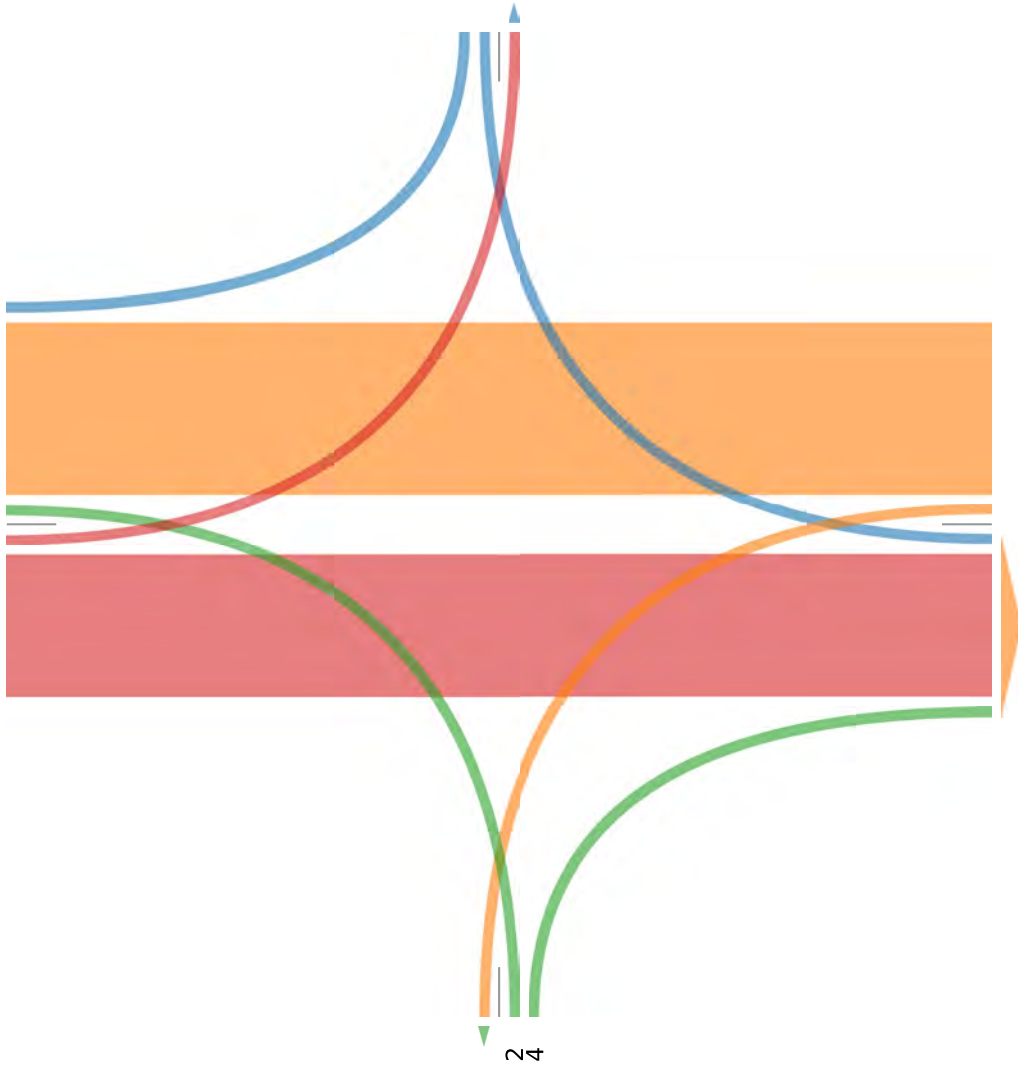
518
3
Out: 430 In: 521
Total: 951

[E] Steels Corners Rd

Out: 3 In: 6
Total: 9

[S] Medina Supply

24



Steels Corners Rd & Bonnett Dr - TMC

Tue Apr 27, 2021

School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835052, Location: 41.181053, -81.496176

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Bonnett Dr

Total: 4

In: 2 Out: 2

14

14

14

Out: 5 In: 5

Total: 10

[S] Medina Supply

[W] Steels Corners Rd

Total: 1036

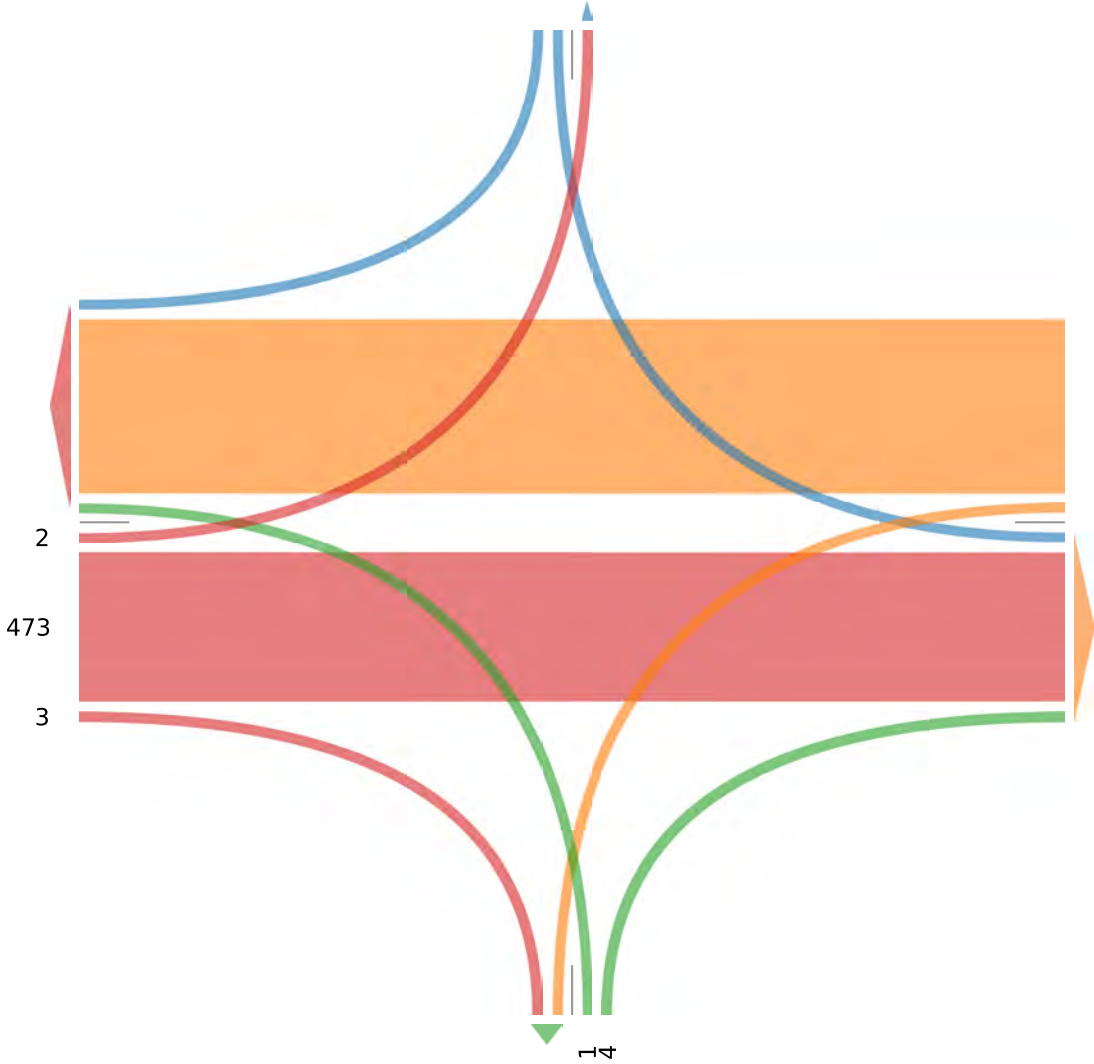
In: 478

Out: 558

2
473
3

556
2
1036
Out: 478 In: 558

[E] Steels Corners Rd



Steels Corners Rd & Bonnett Dr - TMC

Tue Apr 27, 2021

PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 835052, Location: 41.181053, -81.496176

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Bonnett Dr

Total: 6

In: 1 Out: 5

1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1



1

Out: 3 In: 1

Total: 4

[S] Medina Supply

[W] Steels Corners Rd

Total: 961

In: 475

Out: 486

1

473

1

4

485

2

In: 491

Out: 474

Total: 965

[E] Steels Corners Rd

Wyoga Lake Rd. & Steels Corners Rd - TMC

Thu Apr 22, 2021

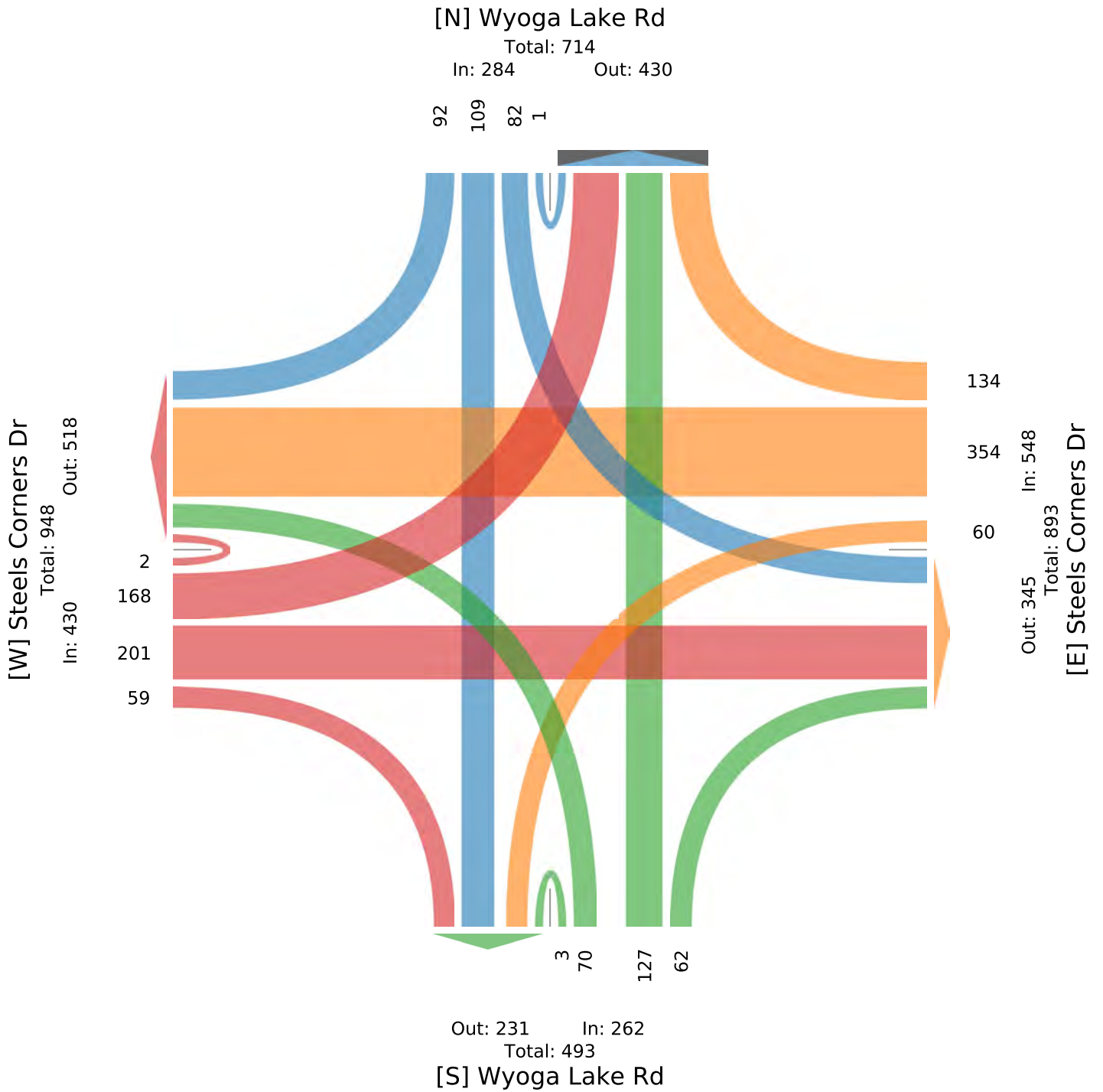
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829953, Location: 41.181062, -81.494345

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Steels Corners Rd - TMC

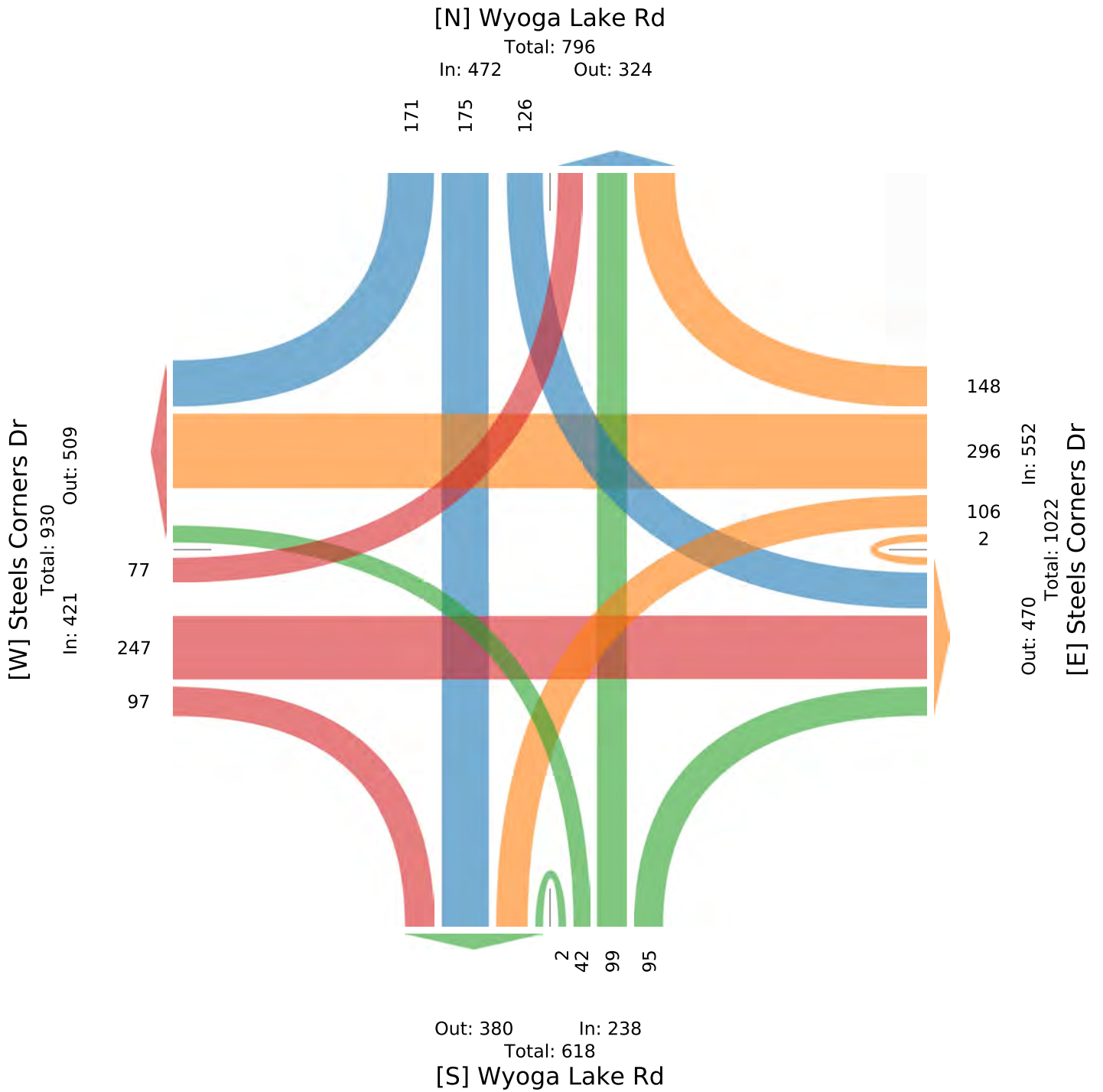
Thu Apr 22, 2021
2:30 PM - 3:30 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829953, Location: 41.181062, -81.494345

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Steels Corners Rd - TMC

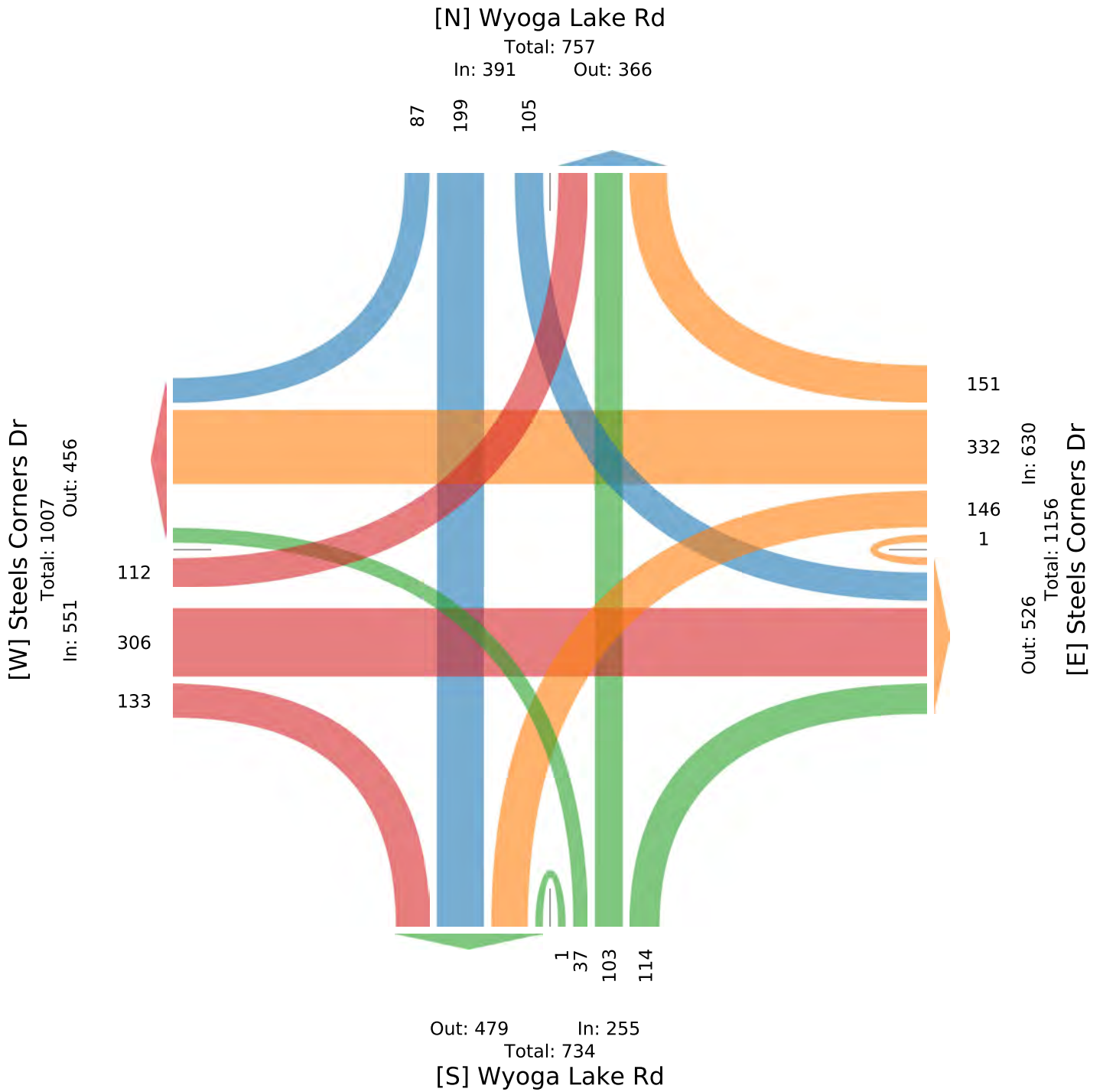
Thu Apr 22, 2021
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829953, Location: 41.181062, -81.494345

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA North - TMC

Wed Sep 8, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	7	122	3	132	0	0	0	0	0	67	1	68	0	0	1	1
7:30	2	196	2	200	0	0	0	0	5	69	2	76	1	0	1	2
7:45	3	66	3	72	0	0	0	0	3	56	0	59	0	0	0	0
8:00	2	27	2	31	0	0	0	0	3	35	0	38	0	0	3	3
TOTAL	14	411	10	435	0	0	0	0	11	227	3	241	1	0	5	6
PHF	0.54				0				0.79				0.50			

Wyoga Lake Rd. & CVCA North - TMC

Tue Apr 20, 2021

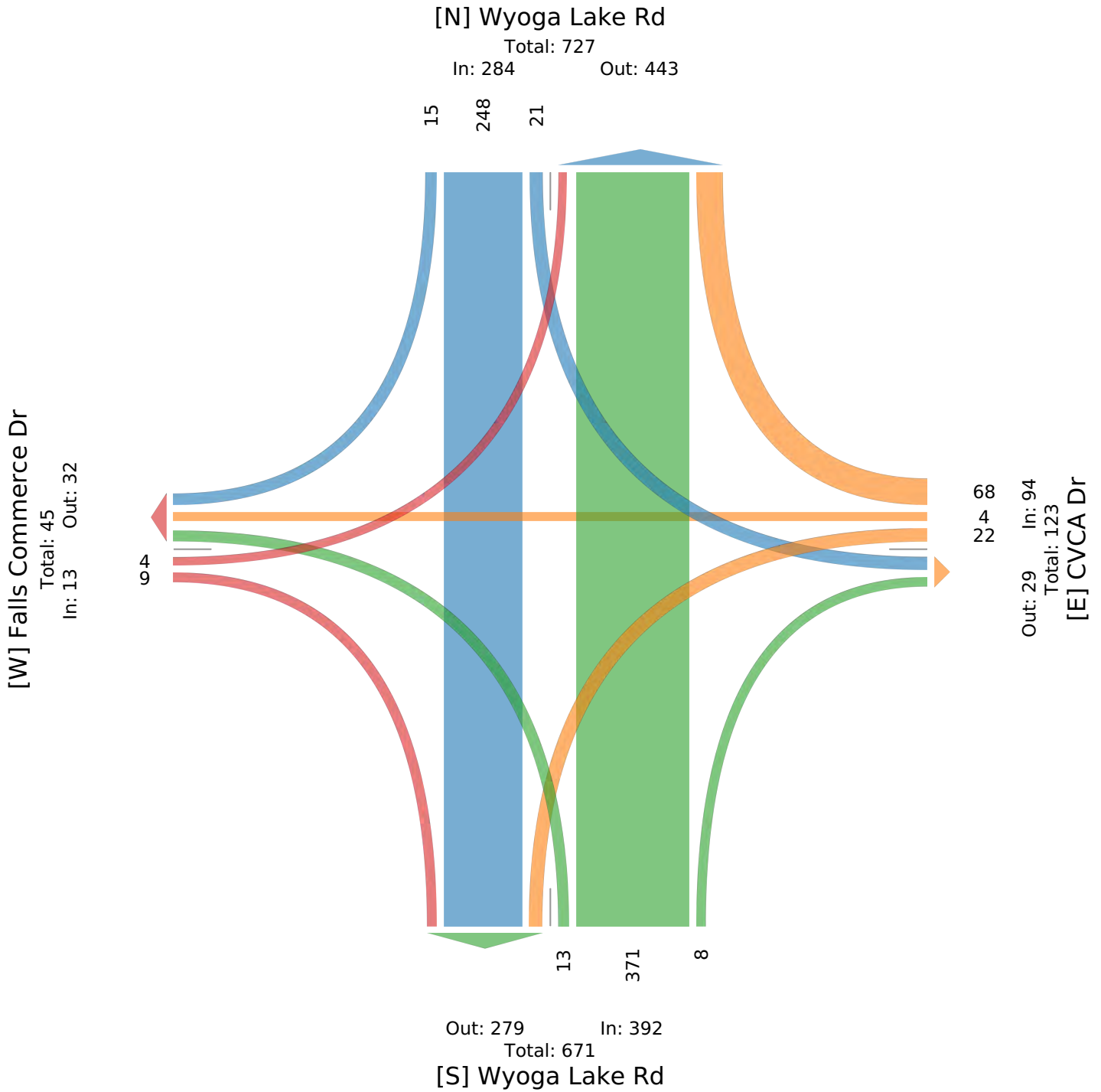
PM Peak (1:30 PM - 2:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829909, Location: 41.19821, -81.494444

Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA North - TMC

Tue Apr 20, 2021

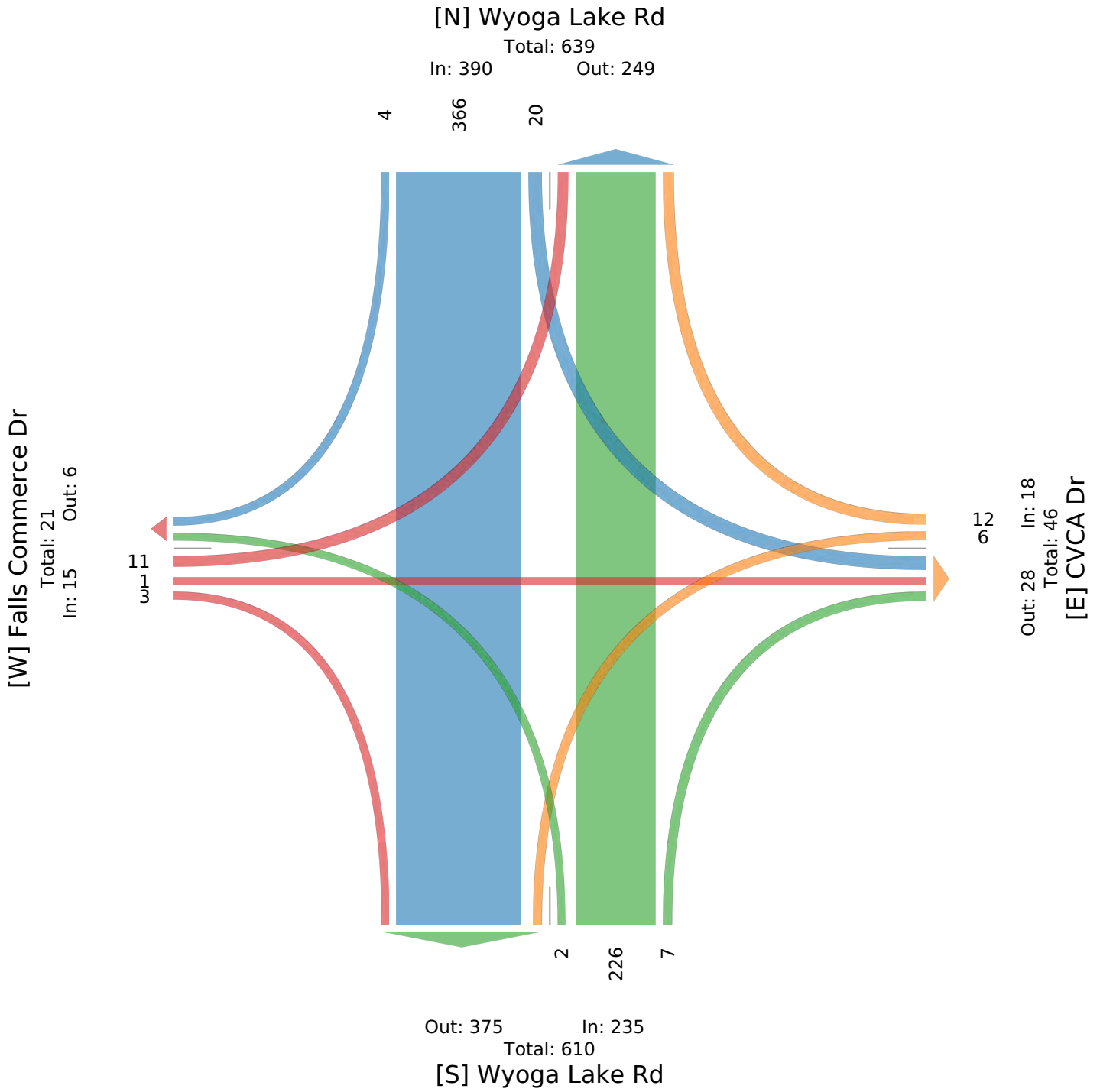
3:45 PM - 4:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829909, Location: 41.19821, -81.494444

Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA Center - TMC

Thu Apr 15, 2021

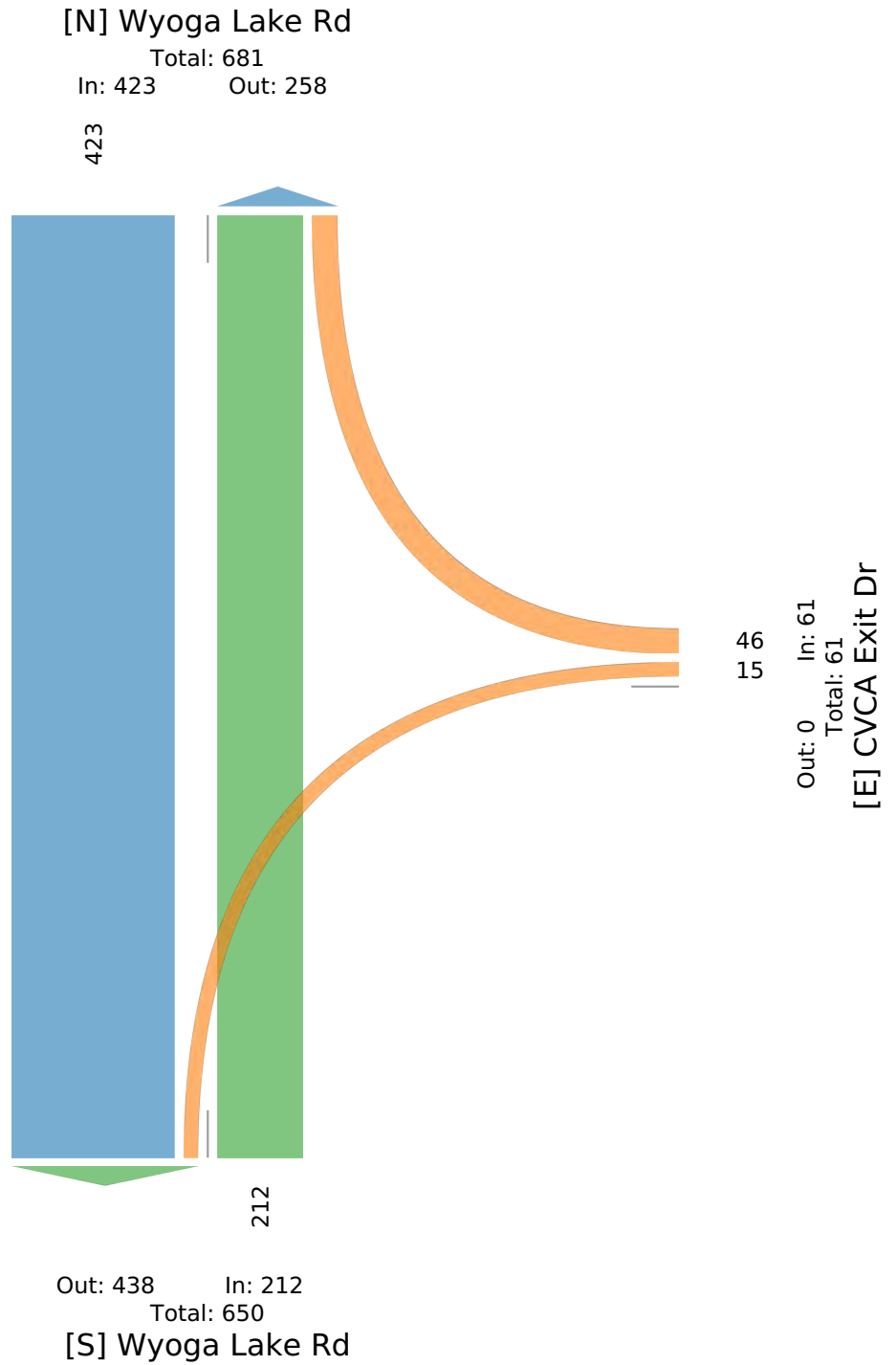
AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828151, Location: 41.197114, -81.494443

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA Center - TMC

Thu Apr 15, 2021

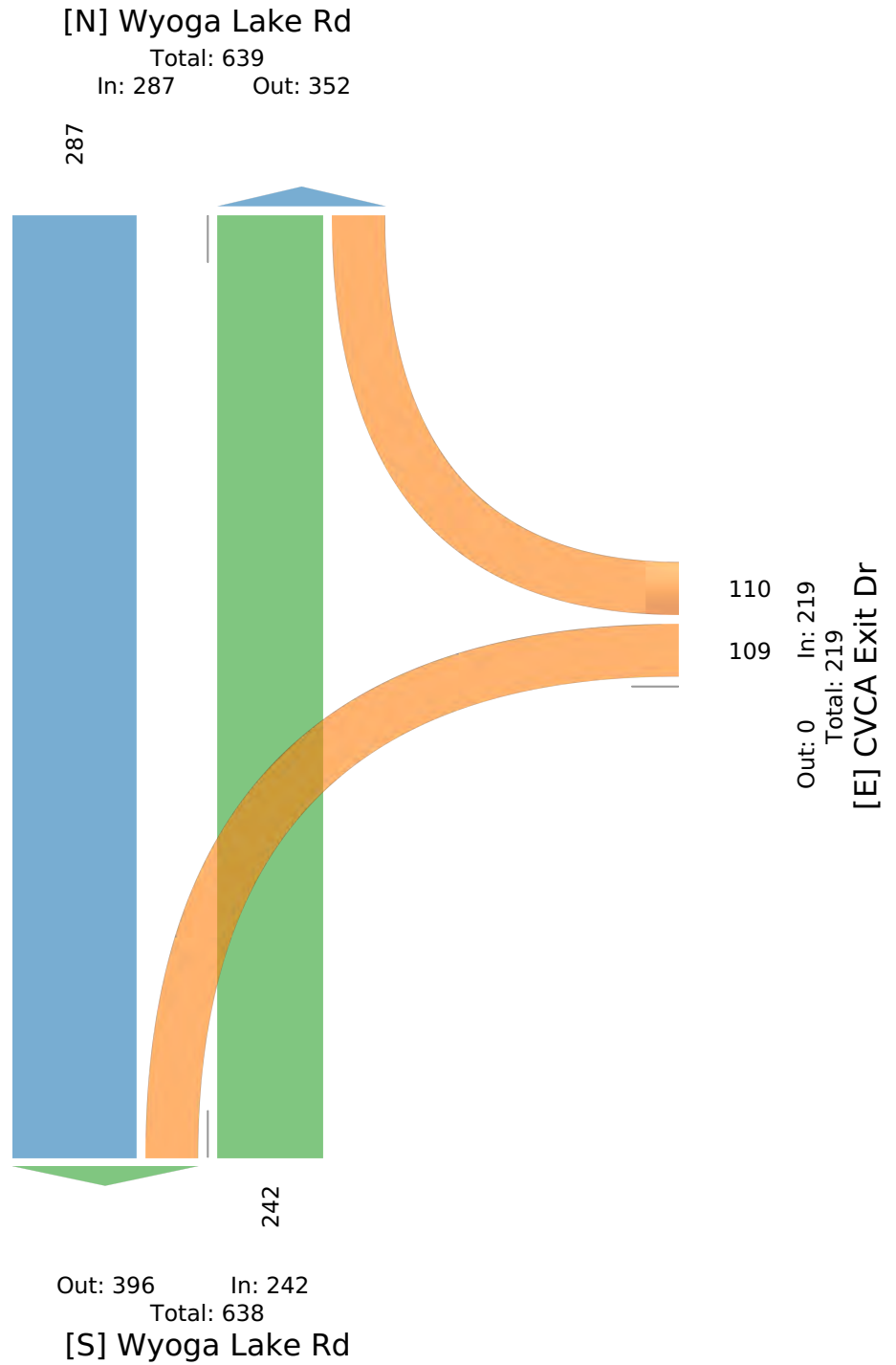
PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828151, Location: 41.197114, -81.494443

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA Center - TMC

Thu Apr 15, 2021

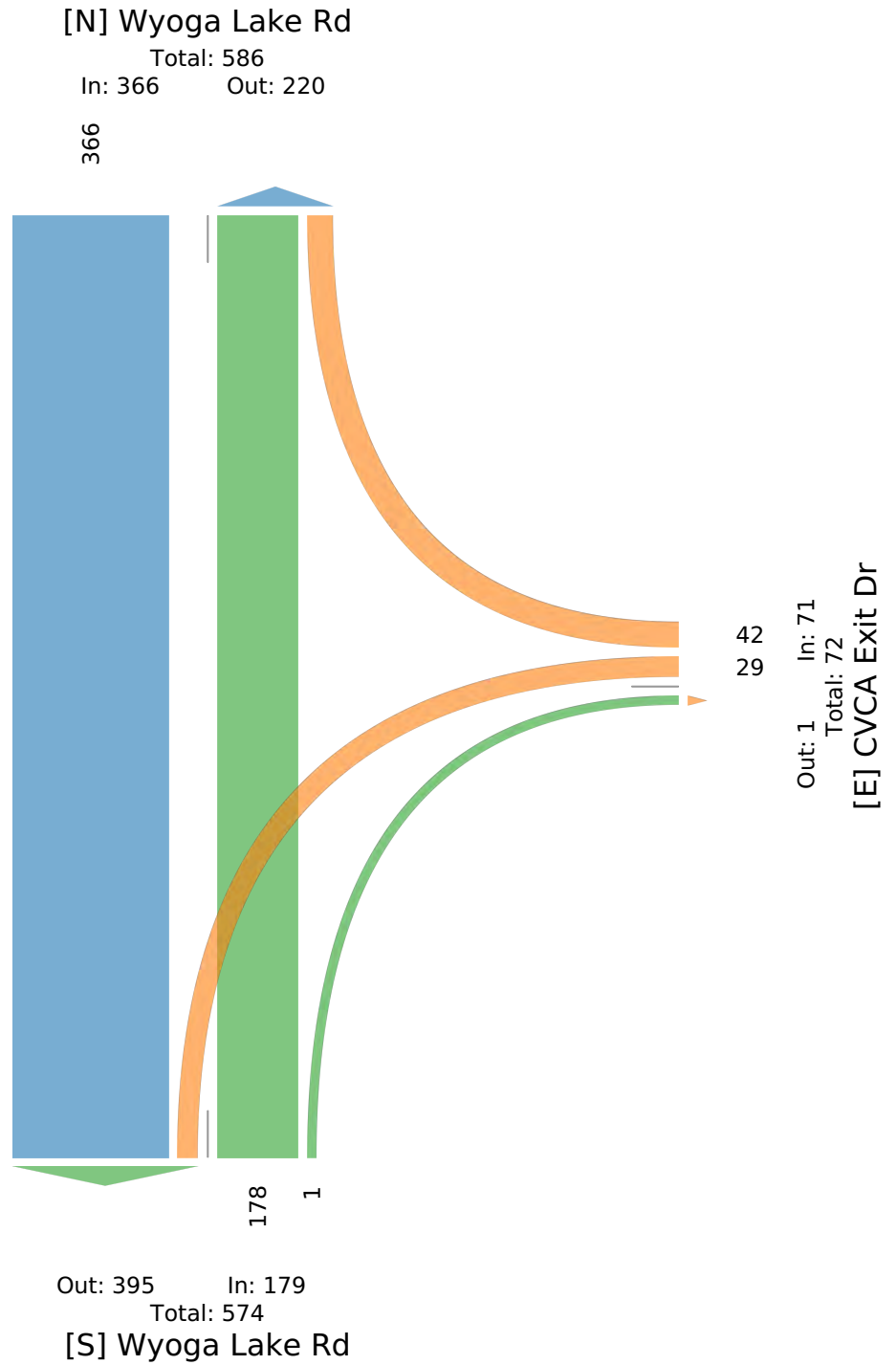
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828151, Location: 41.197114, -81.494443

Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA South - TMC

Thu Apr 15, 2021

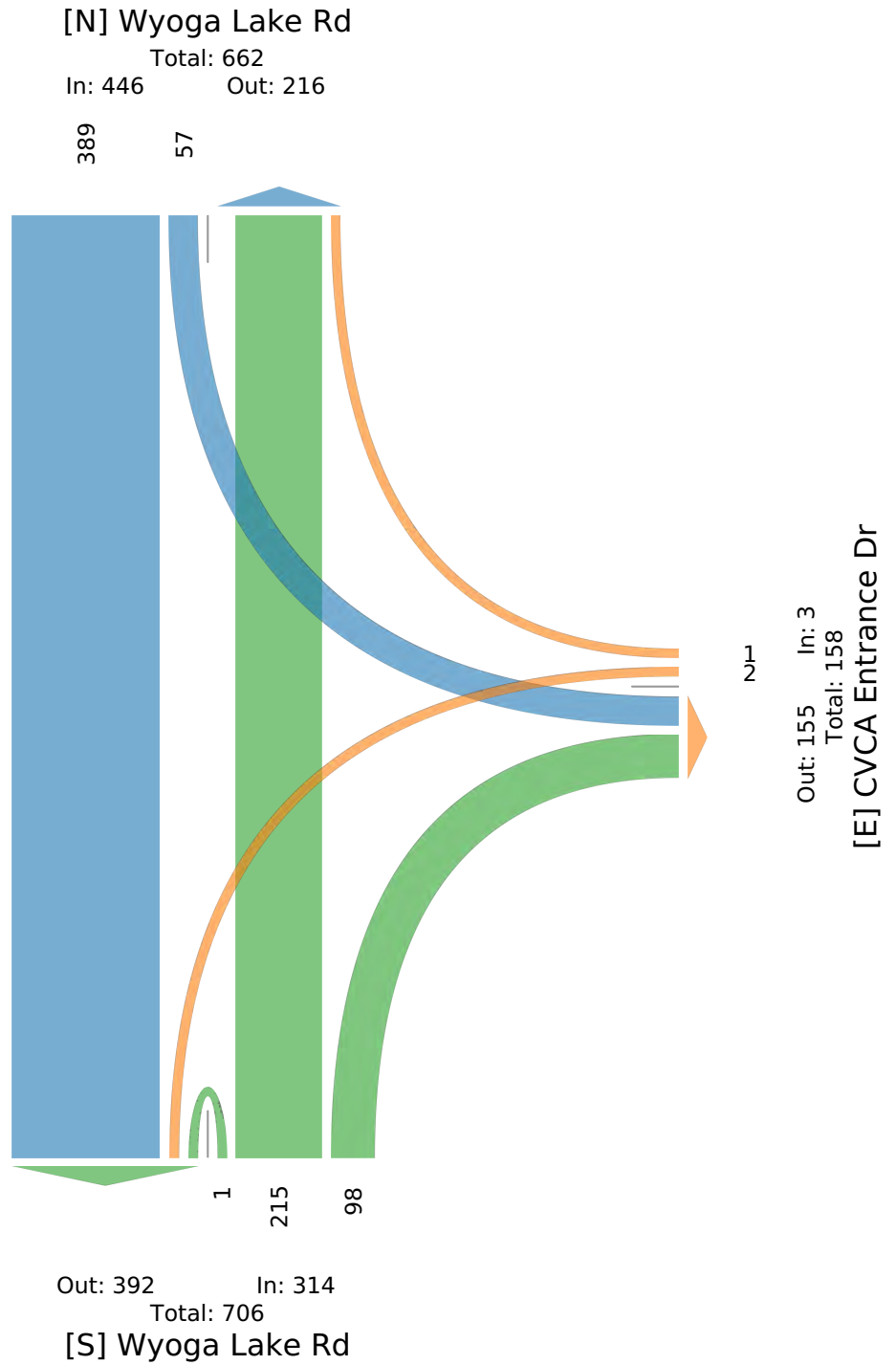
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828145, Location: 41.195787, -81.494443

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA South - TMC

Thu Apr 15, 2021

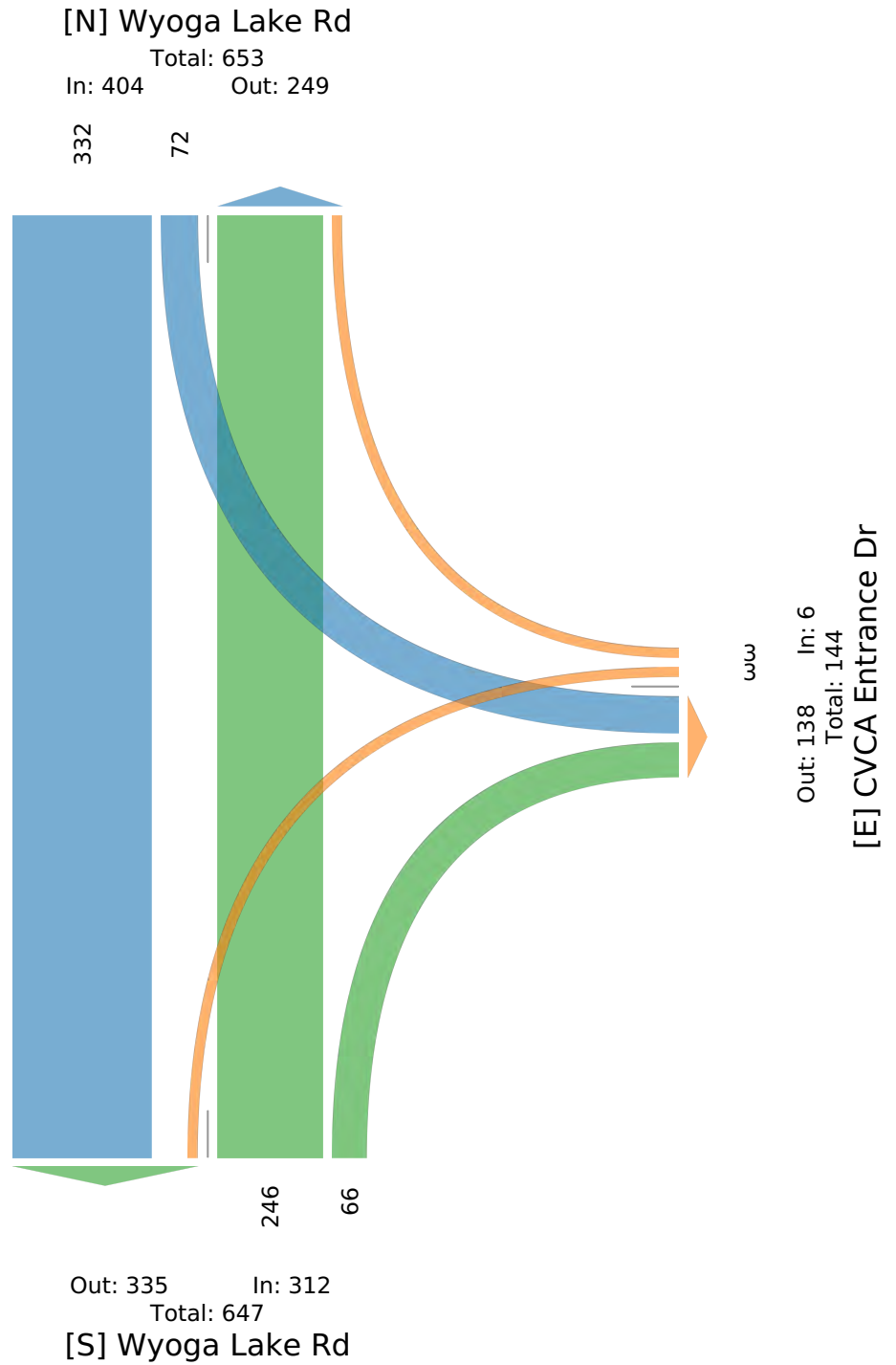
PM Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828145, Location: 41.195787, -81.494443

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & CVCA South - TMC

Thu Apr 15, 2021

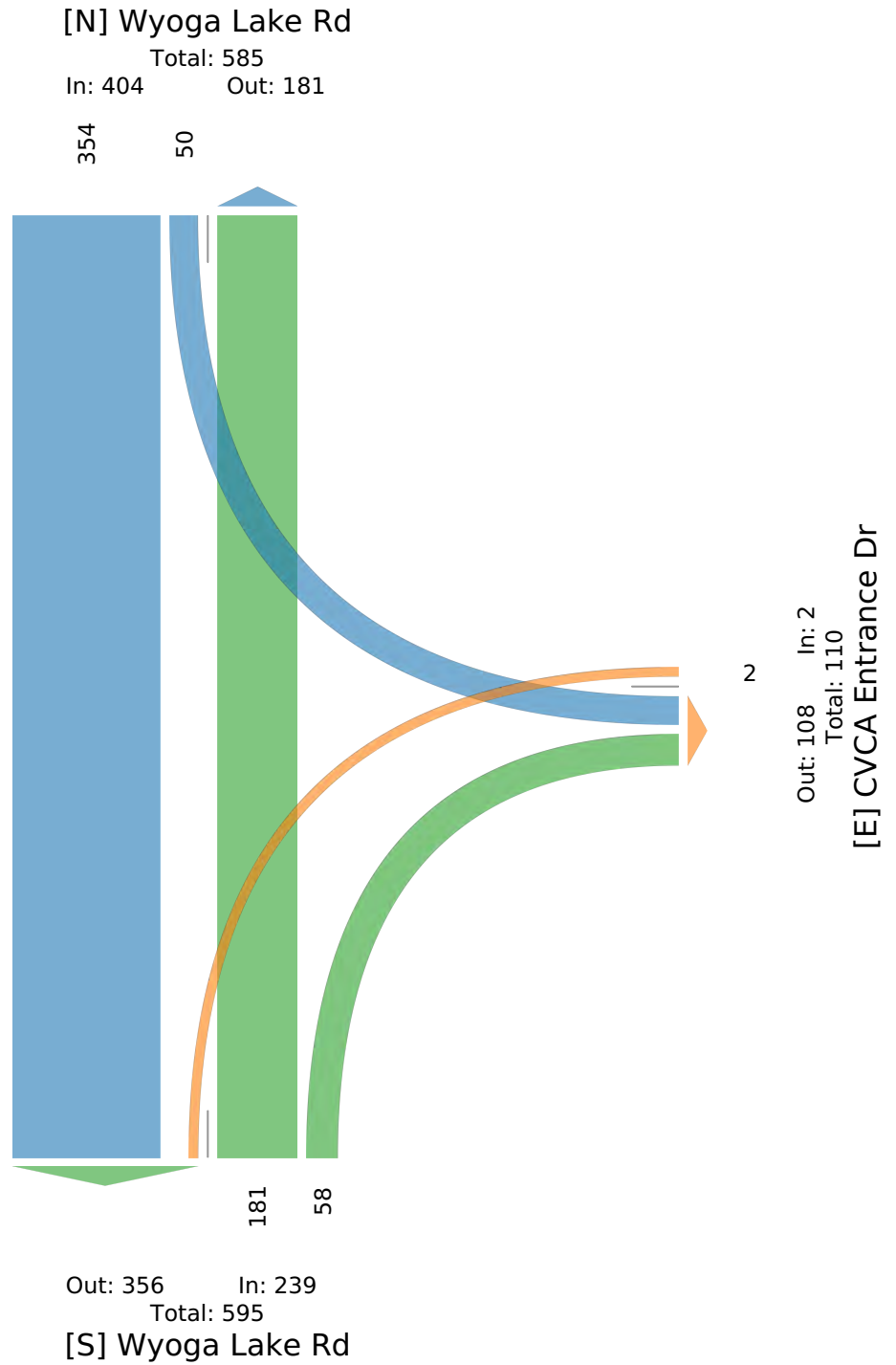
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 828145, Location: 41.195787, -81.494443

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Walsh North - TMC

Tue Apr 20, 2021

7:15 AM - 8:15 AM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829913, Location: 41.193528, -81.49444

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

[N] Wyoga Lake Rd

Total: 792

In: 386

Out: 406

129

257

[W] Walsh Dr

Total: 197

In: 5 Out: 192

WN

63

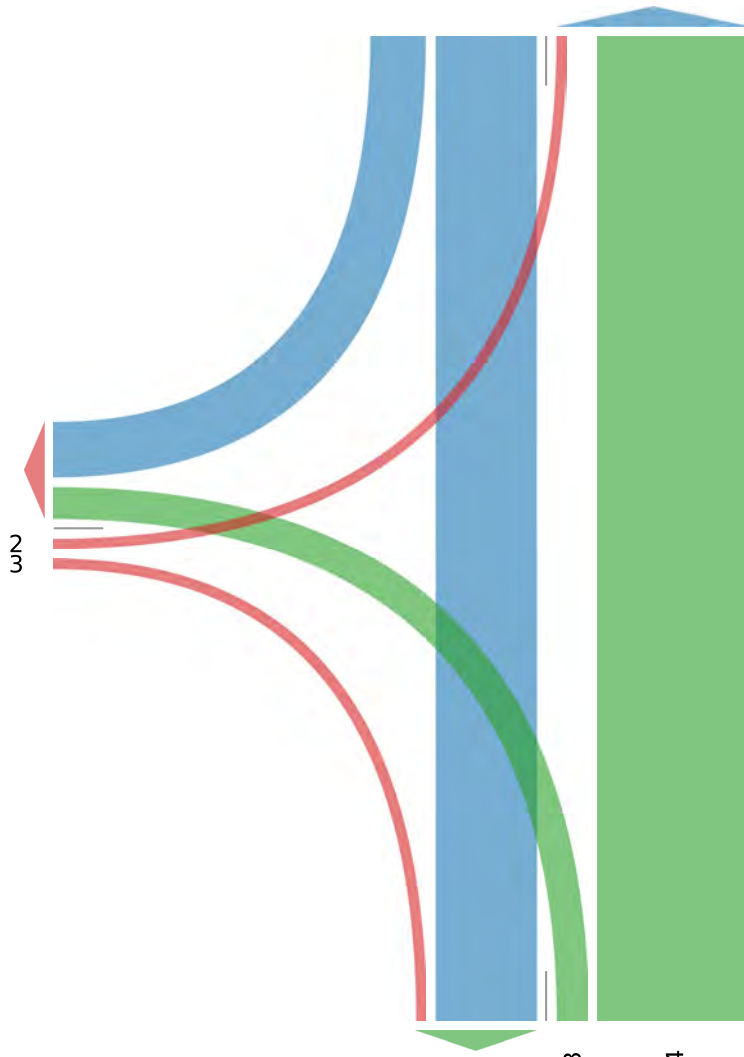
404

Out: 260

In: 467

Total: 727

[S] Wyoga Lake Rd



Wyoga Lake Rd. & Walsh North - TMC

Tue Apr 20, 2021

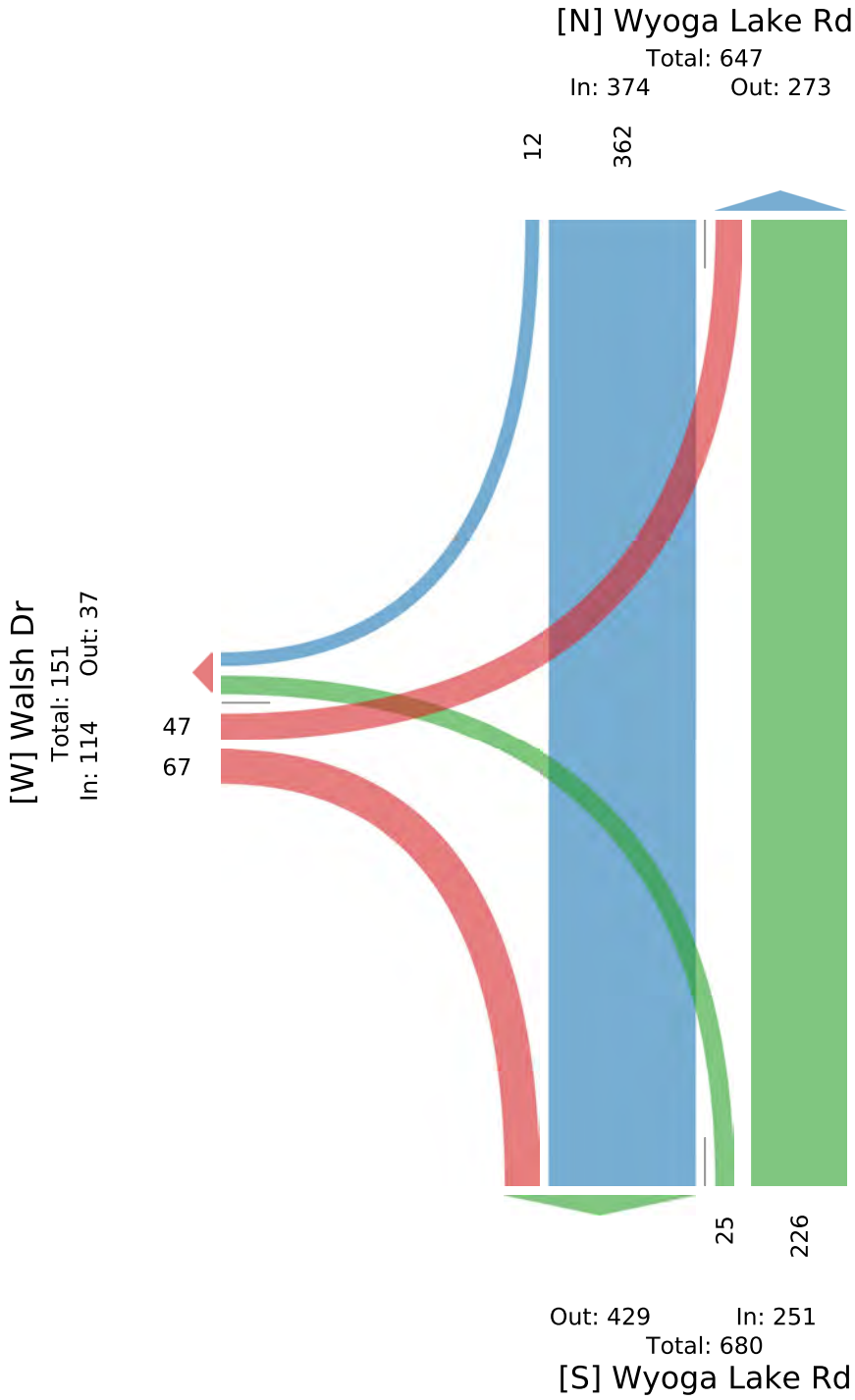
PM Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829913, Location: 41.193528, -81.49444

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Walsh North - TMC

Tue Apr 20, 2021

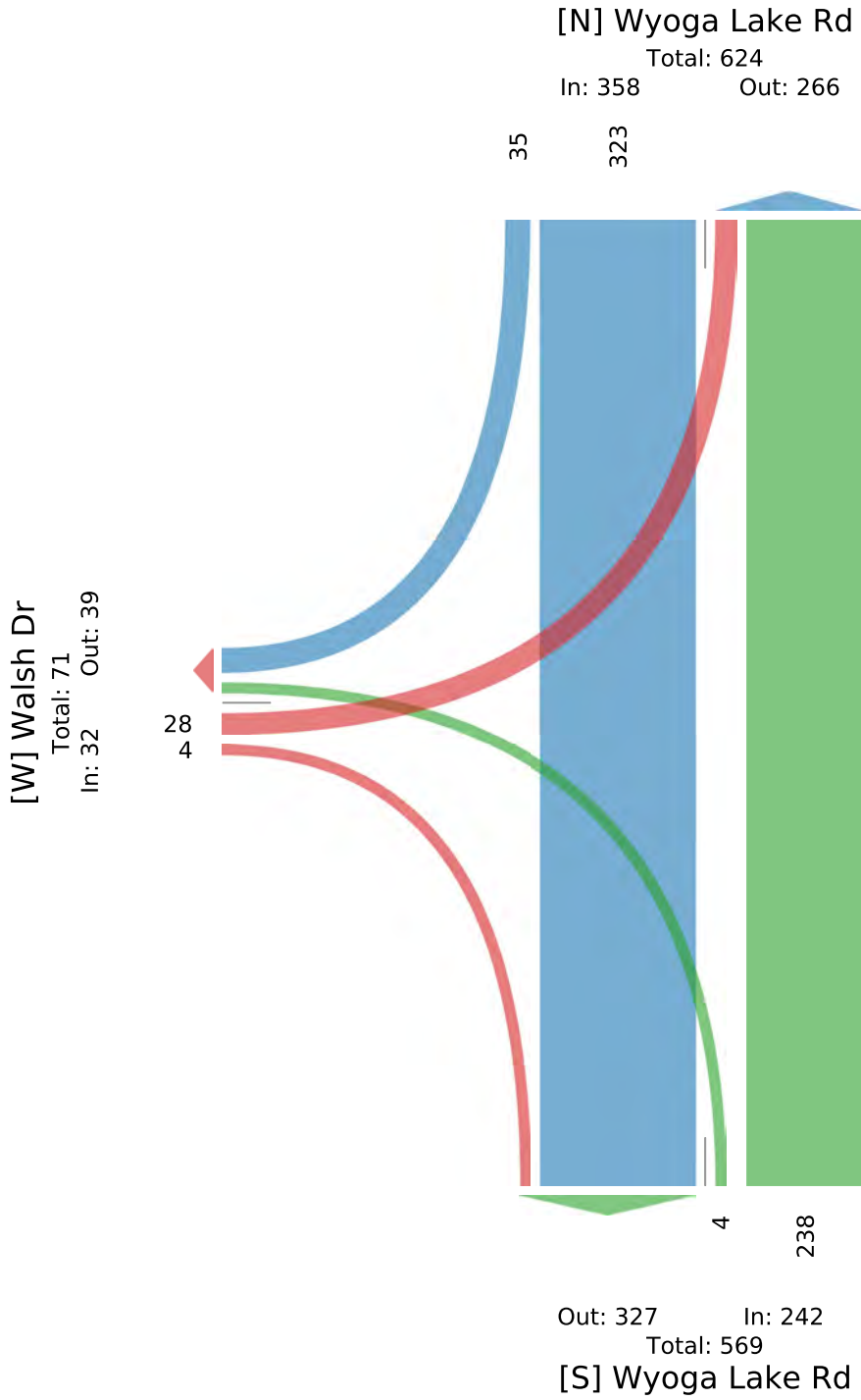
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829913, Location: 41.193528, -81.49444

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga & Walsh Center - TMC

Tue Apr 20, 2021

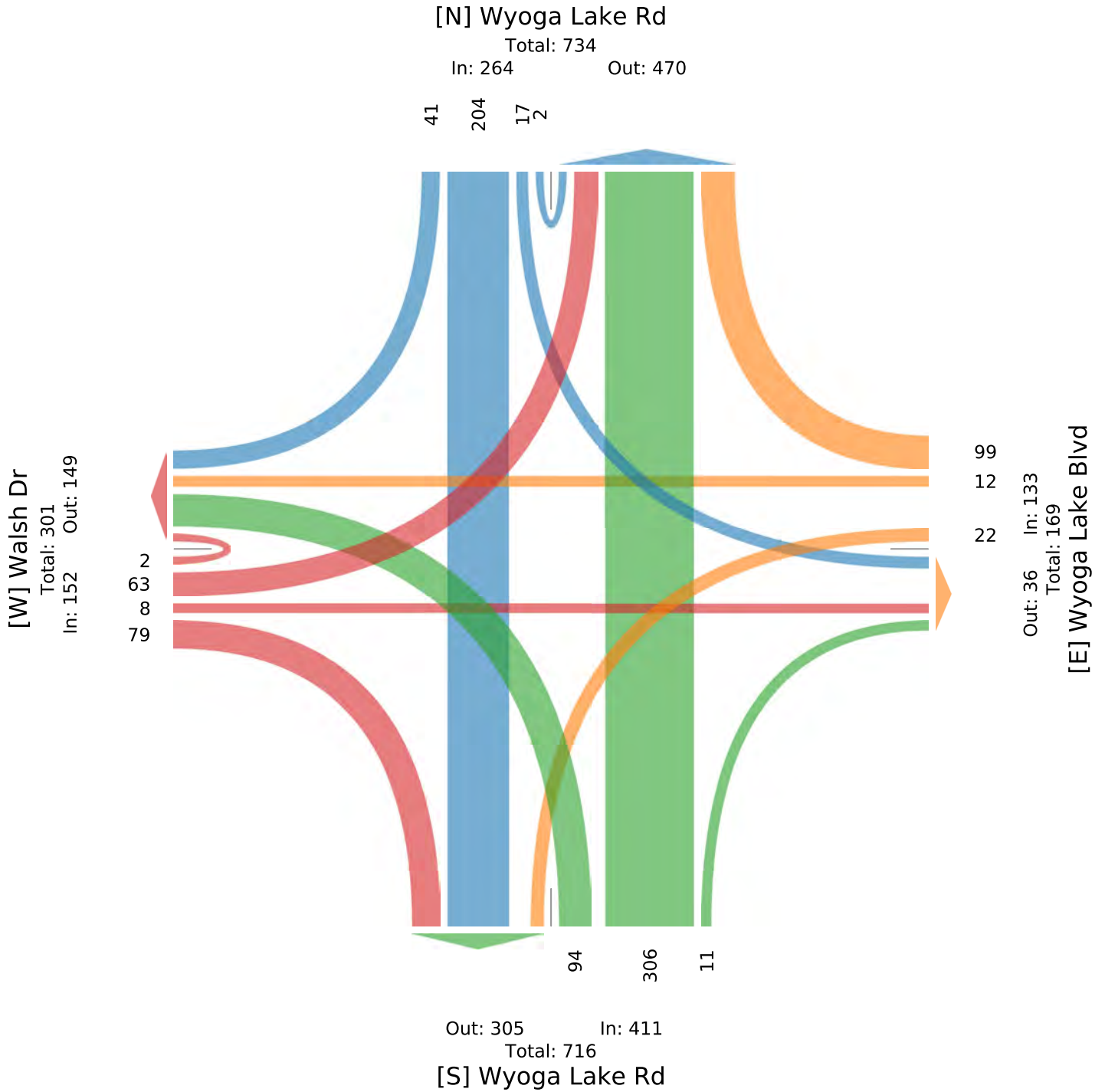
7:15 AM - 8:15 AM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829910, Location: 41.192773, -81.494432

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga & Walsh Center - TMC

Tue Apr 20, 2021

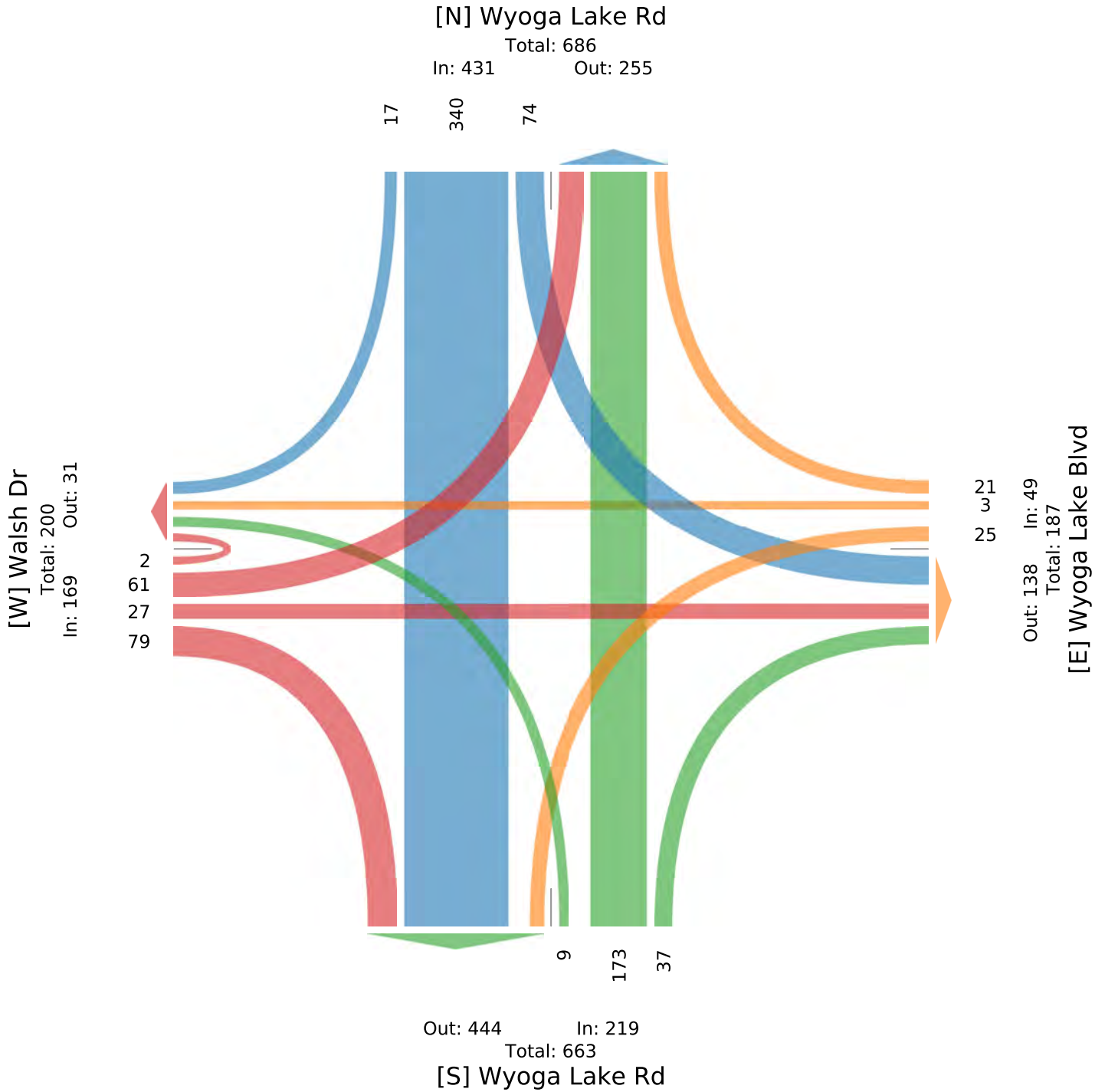
PM Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829910, Location: 41.192773, -81.494432

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga & Walsh Center - TMC

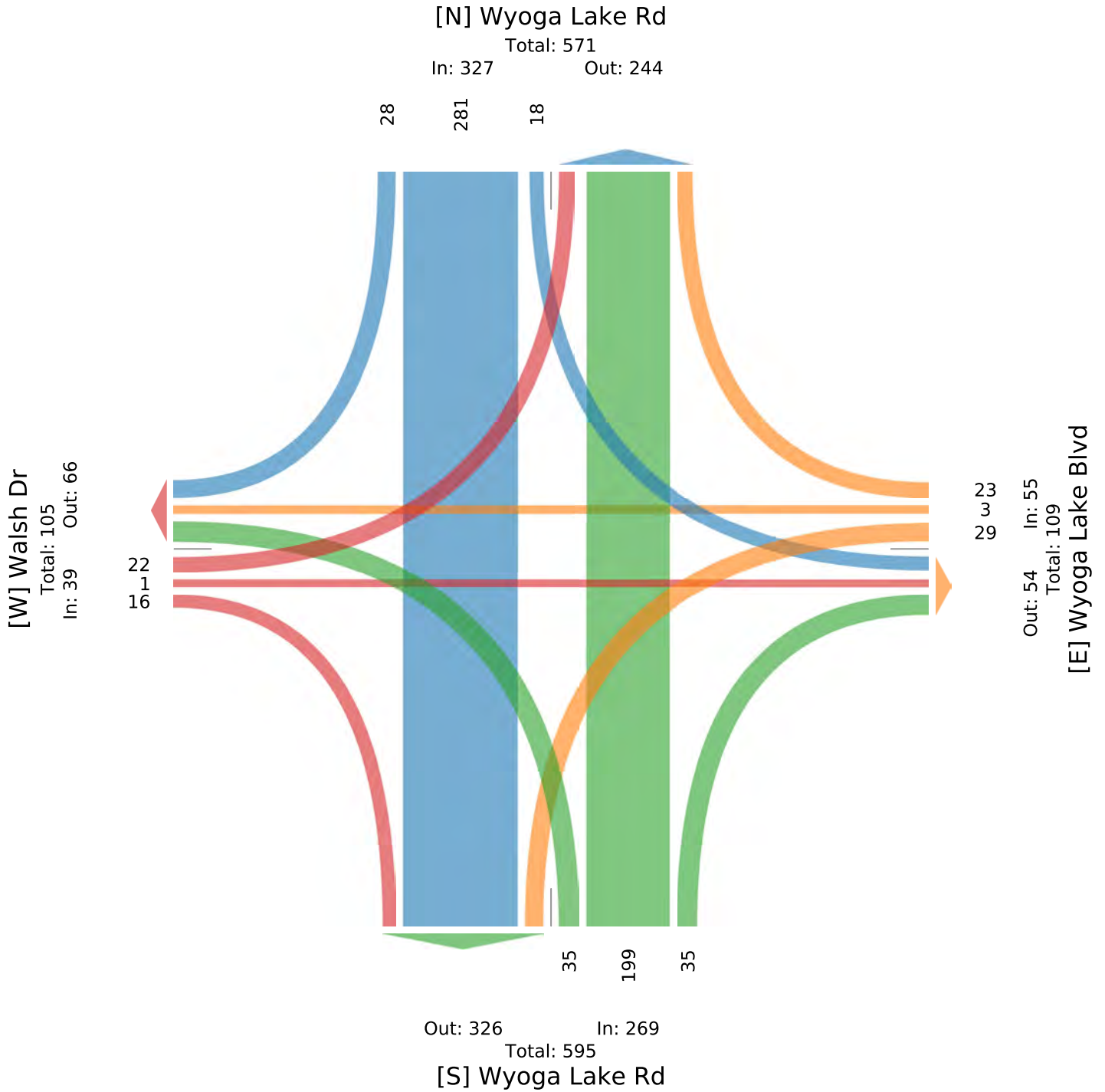
Tue Apr 20, 2021
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829910, Location: 41.192773, -81.494432

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Walsh South - TMC

Thur Sep 9, 2021

AM Peak (7:15 AM - 8:15 AM)

	Southbound				Westbound				Northbound				Eastbound			
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total
7:15	1	50	10	61	8	0	10	18	14	151	3	168	2	0	10	12
7:30	2	90	10	102	8	0	14	22	18	174	4	196	9	0	12	21
7:45	2	88	23	113	6	0	5	11	35	99	4	138	12	0	39	51
8:00	5	20	2	27	10	0	2	12	4	26	5	35	4	0	2	6
TOTAL	10	248	45	303	32	0	31	63	71	450	16	537	27	0	63	90
PHF	0.67				0.72				0.68				0.44			

Wyoga Lake Rd. & Walsh South - TMC

Thu Apr 22, 2021

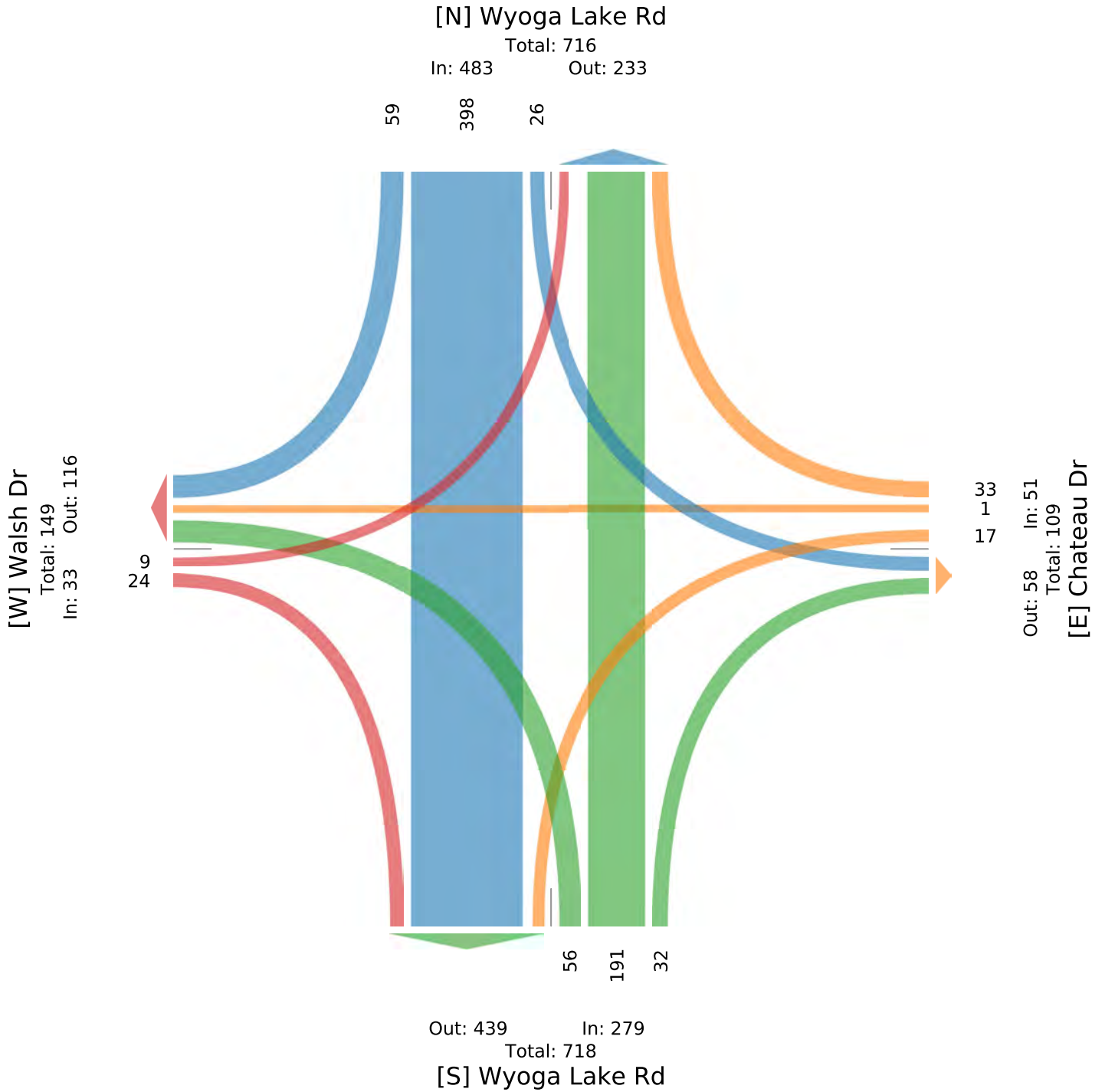
School Peak (2:30 PM - 3:30 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829911, Location: 41.189791, -81.494464

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Walsh South - TMC

Thu Apr 22, 2021

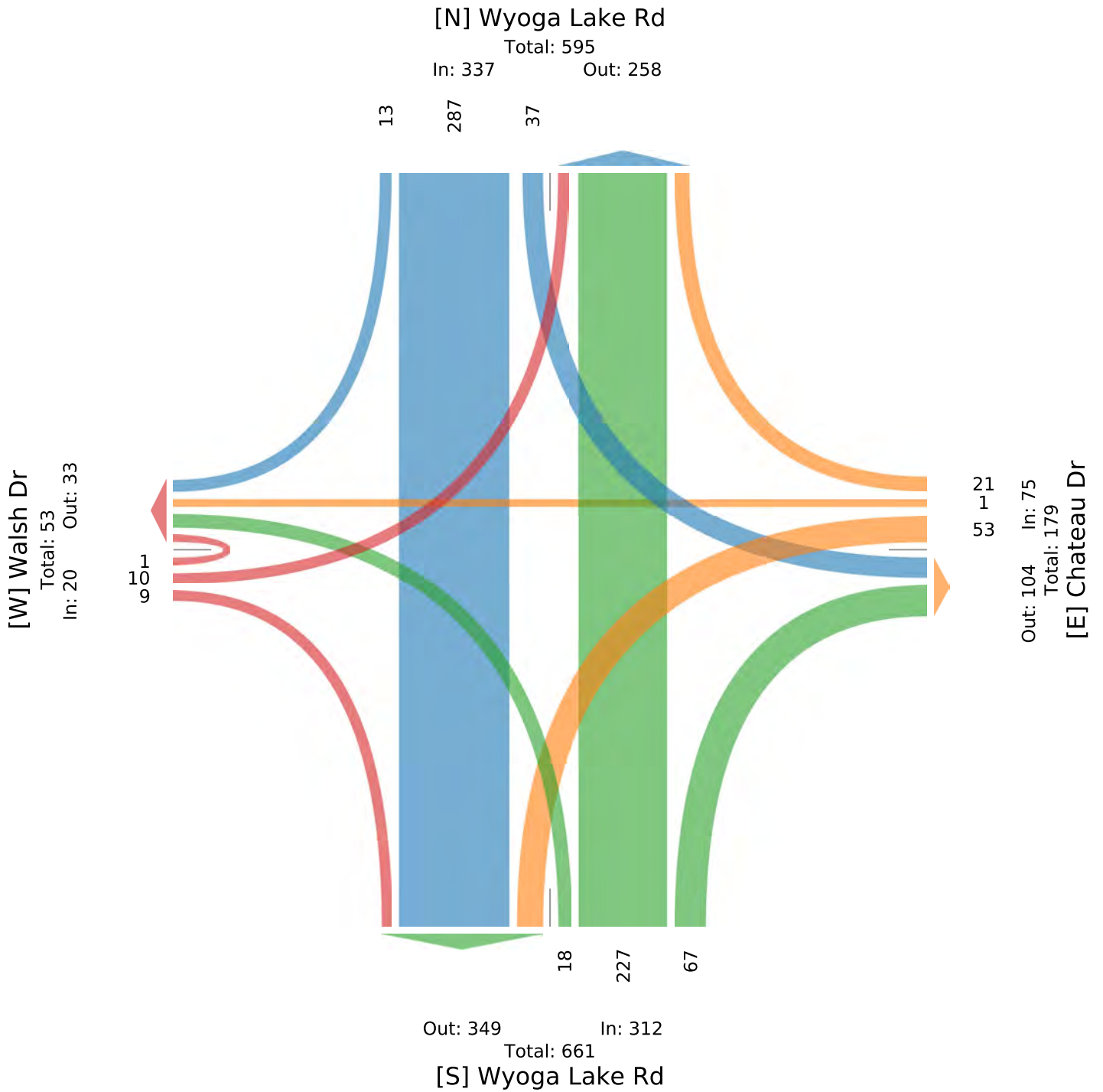
PM Peak (4:45 PM - 5:45 PM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829911, Location: 41.189791, -81.494464

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Wyoga Lake Townhomes Dr - TMC

Thu Apr 22, 2021

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829919, Location: 41.188453, -81.494355

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US

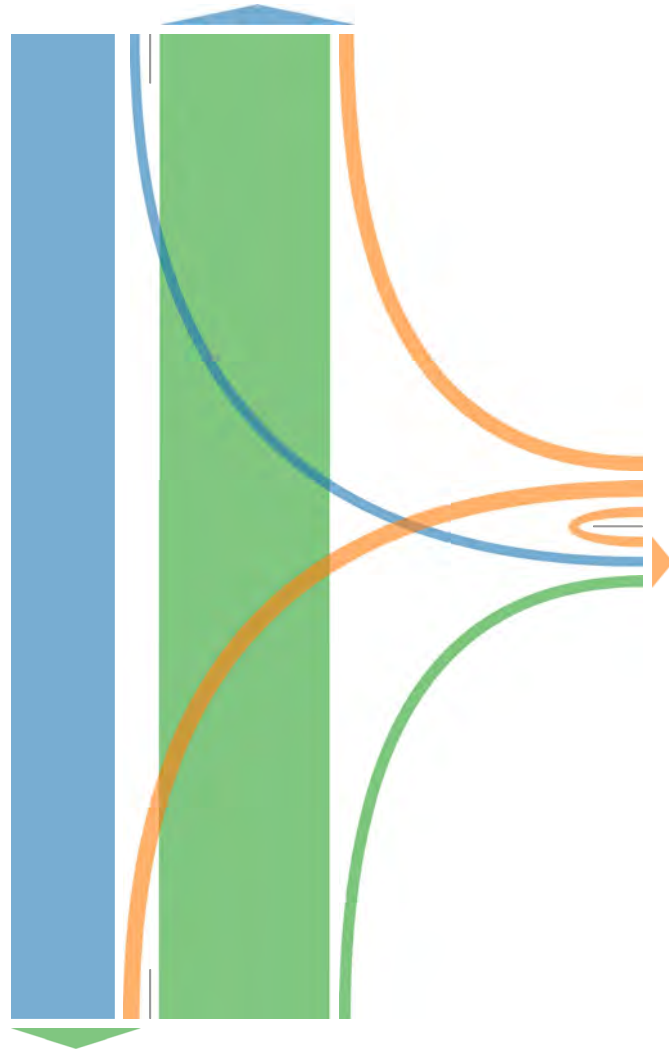
[N] Wyoga Lake Rd

Total: 677

In: 244 Out: 433

243

1



14
18
2

Out: 8 In: 34
Total: 42

[E] Townhomes Dr

419

5

Out: 261 In: 424
Total: 685

[S] Wyoga Lake Rd

Wyoga Lake Rd. & Wyoga Lake Townhomes Dr - TMC

Thu Apr 22, 2021

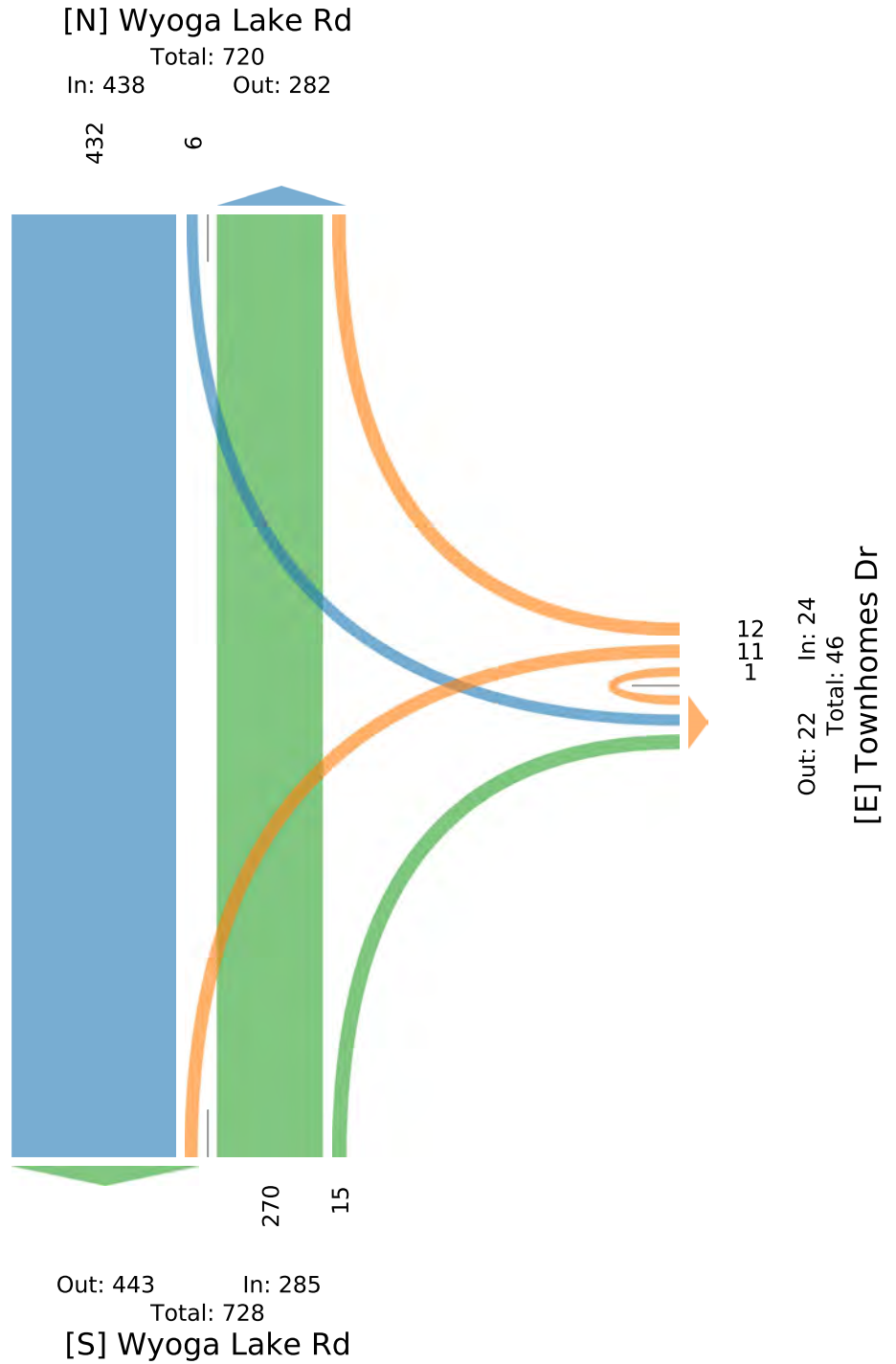
PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829919, Location: 41.188453, -81.494355

Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US



Wyoga Lake Rd. & Wyoga Lake Townhomes Dr - TMC

Thu Apr 22, 2021

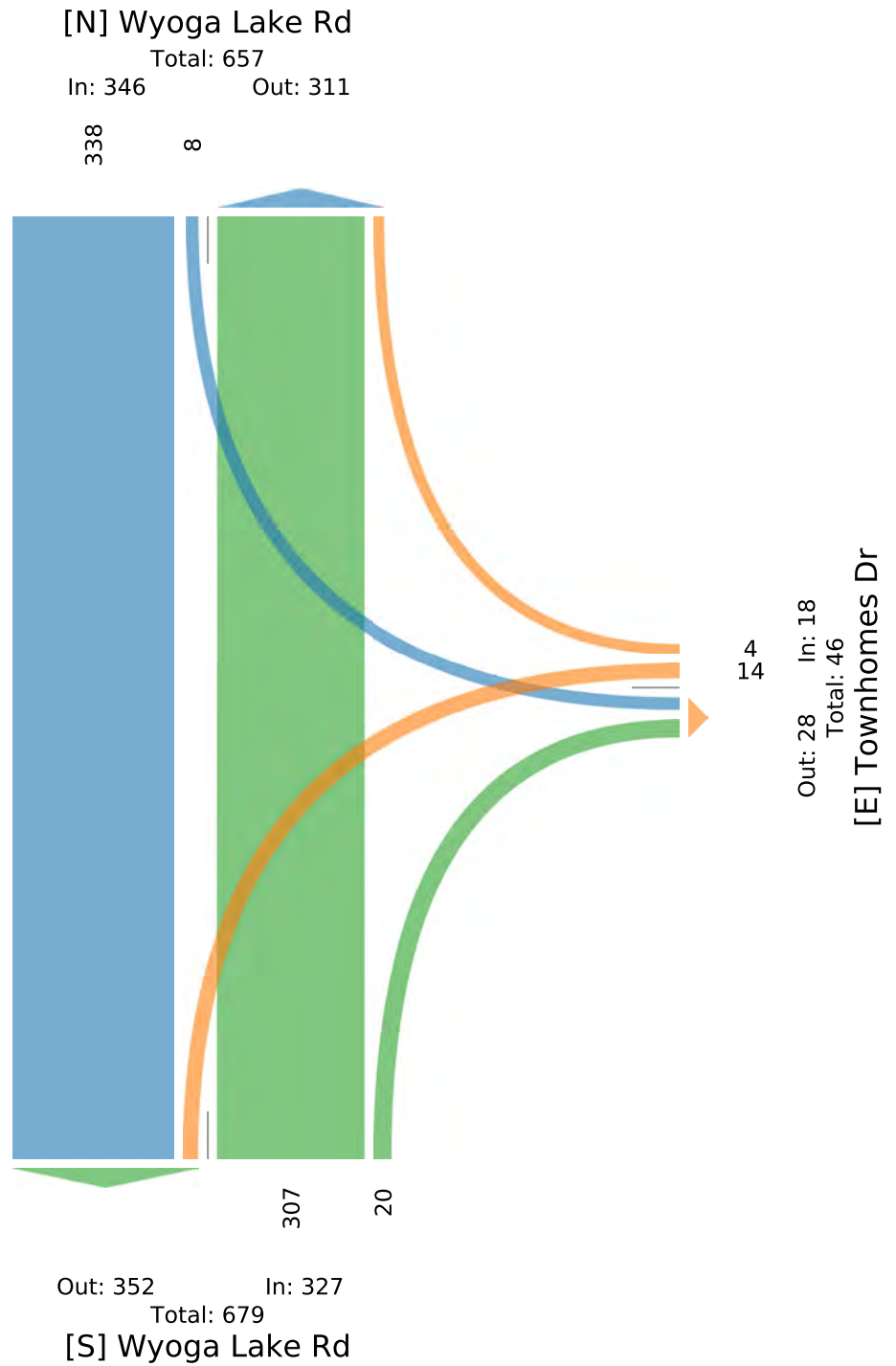
4:45 PM - 5:45 PM

All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)

All Movements

ID: 829919, Location: 41.188453, -81.494355

Provided by: Prime AE Group
540 White Pond Drive, Suite E, Akron, OH, 44320, US



PEAK HOUR to DESIGN HOUR FACTORS

FUNCTIONAL CLASSIFICATION = 03, 04, 05u

(Urban Principal Arterial, Urban Minor Arterial, & Urban Minor Collector)

Day Month	Monthly Average by Day-of-Week							
	WEEKDAY MON- THUR	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	1.20	1.72	1.22	1.21	1.20	1.17	1.15	1.56
February	1.17	1.63	1.19	1.16	1.17	1.16	1.11	1.48
March	1.15	1.57	1.16	1.16	1.16	1.13	1.11	1.45
April	1.11	1.52	1.13	1.12	1.09	1.09	1.06	1.41
May	1.08	1.44	1.10	1.09	1.08	1.06	1.04	1.35
June	1.14	1.51	1.16	1.15	1.14	1.11	1.09	1.39
July	1.16	1.54	1.19	1.17	1.15	1.15	1.13	1.44
August	1.13	1.51	1.15	1.14	1.13	1.11	1.08	1.40
September	1.12	1.53	1.15	1.11	1.12	1.09	1.04	1.40
October	1.10	1.53	1.13	1.10	1.10	1.08	1.05	1.40
November	1.13	1.56	1.16	1.12	1.13	1.11	1.06	1.48
December	1.13	1.58	1.14	1.13	1.12	1.12	1.09	1.44

peak hour volume * factor = design hour volume

source: year 2016, 2017, & 2018 Automatic Traffic Recorders (ATR) Data

ATR Stations:

2018: 21, 28, 123, 131, 134, 166, 169, 517, 523, 543, 544, 550,
565, 605, 765

2017: 21, 123, 523, 538, 543, 544, 550, 565, 605, 725, 765, 28,
134, 169, 517, 131, 166

Ohio Department of Transportation
Modeling & Forecasting Section
June 2019

NOTE: These are NOT seasonal adjustment factors!!!

Note: Insufficient data exists to produce factors for functional classes 06 and 07 Urban.

Volume Adjustment Calculations

State Rd. & Boulder Blvd.																	
State Rd.										State Rd.				Boulder Blvd			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak*	2021	Raw	0	360	5	365	0	0	0	0	3	594	0	597	38	0	2	40
	DHV	Factor	1.11	1.11	1.11		1.11	1.11	1.11		1.11	1.11	1.11		1.11	1.11	1.11	
	2021	No Build	0	400	6	405	0	0	0	0	3	659	0	663	42	0	2	44
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	400	6	405	0	0	0	0	3	659	0	663	42	0	2	44
	Opening Year	Rounded	0	400	10	410	0	0	0	0	10	660	0	670	40	0	10	50
	2041	Total	0	440	6	446	0	0	0	0	4	725	0	729	46	0	2	49
	Design Year	Rounded	0	440	10	450	0	0	0	0	10	730	0	740	50	0	10	60
School Peak	2021	Raw	0	449	26	475	0	0	0	0	5	413	0	418	21	0	5	26
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	489	28	518	0	0	0	0	5	450	0	456	23	0	5	28
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	489	28	518	0	0	0	0	5	450	0	456	23	0	5	28
	Opening Year	Rounded	0	490	30	520	0	0	0	0	10	450	0	460	20	0	10	30
	2041	Total	0	538	31	570	0	0	0	0	6	495	0	501	25	0	6	31
	Design Year	Rounded	0	540	30	570	0	0	0	0	10	500	0	510	30	0	10	40
PM Peak	2021	Raw	0	483	32	515	0	0	0	0	12	454	0	466	20	0	10	30
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	526	35	561	0	0	0	0	13	495	0	508	22	0	11	33
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	526	35	561	0	0	0	0	13	495	0	508	22	0	11	33
	Opening Year	Rounded	0	530	40	570	0	0	0	0	10	490	0	500	20	0	10	30
	2041	Total	0	579	38	617	0	0	0	0	14	544	0	559	24	0	12	36
	Design Year	Rounded	0	580	40	620	0	0	0	0	10	540	0	550	20	0	10	30

Volume Adjustment Calculations

State Rd. & Falls Commerce Pkwy

		State Rd.				Falls Commerce Pkwy				State Rd								
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021			Raw	4	345	0	349	7	0	8	15	0	462	9	471	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	4	376	0	380	8	0	9	16	0	504	10	513	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	4	376	0	380	8	0	9	16	0	504	10	513	0	0	0	0
	Opening Year	Rounded	10	380	0	390	10	0	10	20	0	500	10	510	0	0	0	0
	2041	Total	5	414	0	418	8	0	10	18	0	554	11	565	0	0	0	0
	Design Year	Rounded	10	420	0	430	10	0	10	20	0	550	10	560	0	0	0	0
School Peak	2021	Raw	7	449	0	456	5	0	17	22	0	400	3	403	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	8	489	0	497	5	0	19	24	0	436	3	439	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	8	489	0	497	5	0	19	24	0	436	3	439	0	0	0	0
	Opening Year	Rounded	10	490	0	500	10	0	20	30	0	440	10	450	0	0	0	0
	2041	Total	8	538	0	547	6	0	20	26	0	480	4	483	0	0	0	0
	Design Year	Rounded	10	540	0	550	10	0	20	30	0	480	10	490	0	0	0	0
PM Peak	2021	Raw	4	483	0	487	3	0	8	11	0	450	3	453	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	4	526	0	531	3	0	9	12	0	491	3	494	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	4	526	0	531	3	0	9	12	0	491	3	494	0	0	0	0
	Opening Year	Rounded	10	530	0	540	10	0	10	20	0	490	10	500	0	0	0	0
	2041	Total	5	579	0	584	4	0	10	13	0	540	4	543	0	0	0	0
	Design Year	Rounded	10	580	0	590	10	0	10	20	0	540	0	540	0	0	0	0

Volume Adjustment Calculations

State Rd & Buckeye Sports

		State Rd & Buckeye Sports																
		State Rd				Industrial Dr				State Rd				Buckeye Sports Complex Dr				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak*	2021	Raw	0	360	5	365	4	0	4	8	5	594	4	603	0	0	2	2
	DHV	Factor	1.11	1.11	1.11		1.11	1.11	1.11		1.11	1.11	1.11		1.11	1.11	1.11	
	2021	No Build	0	400	6	405	4	0	4	9	6	659	4	669	0	0	2	2
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	400	6	405	4	0	4	9	6	659	4	669	0	0	2	2
	Opening Year	Rounded	0	400	10	410	10	0	10	20	10	660	10	680	0	0	10	10
	2041	Total	0	440	6	446	5	0	5	10	6	725	5	736	0	0	2	2
	Design Year	Rounded	0	440	10	450	10	0	10	20	10	730	10	750	0	0	10	10
School Peak	2021	Raw	7	496	4	507	2	2	5	9	5	433	2	440	5	0	5	10
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	8	541	4	553	2	2	5	10	5	472	2	480	5	0	5	11
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	8	541	4	553	2	2	5	10	5	472	2	480	5	0	5	11
	Opening Year	Rounded	10	540	10	560	10	10	10	30	10	470	10	490	10	0	10	20
	2041	Total	8	595	5	608	2	2	6	11	6	519	2	528	6	0	6	12
	Design Year	Rounded	10	600	10	620	10	10	10	30	10	520	10	540	10	0	10	20
PM Peak	2021	Raw	2	555	3	560	2	0	2	4	1	472	2	475	4	0	2	6
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	2	605	3	610	2	0	2	4	1	514	2	518	4	0	2	7
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	2	605	3	610	2	0	2	4	1	514	2	518	4	0	2	7
	Opening Year	Rounded	10	610	10	630	10	0	10	20	10	510	10	530	10	0	10	20
	2041	Total	2	665	4	671	2	0	2	5	1	566	2	570	5	0	2	7
	Design Year	Rounded	10	670	10	690	10	0	10	20	10	570	10	590	10	0	10	20

Volume Adjustment Calculations

State Rd & Salt Creek Run

		State Rd				Westbound				State Rd				Salt Creek Run				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	0	354	8	362	0	0	0	0	5	494	0	499	29	0	6	35
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	386	9	395	0	0	0	0	5	538	0	544	32	0	7	38
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	386	9	395	0	0	0	0	5	538	0	544	32	0	7	38
	Opening Year	Rounded	0	390	10	400	0	0	0	0	10	540	0	550	30	0	10	40
	2041	Total	0	424	10	434	0	0	0	0	6	592	0	598	35	0	7	42
	Design Year	Rounded	0	420	10	430	0	0	0	0	10	590	0	600	40	0	10	50
School Peak	2021	Raw	0	489	13	502	0	0	0	0	7	433	0	440	11	0	8	19
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	533	14	547	0	0	0	0	8	472	0	480	12	0	9	21
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	533	14	547	0	0	0	0	8	472	0	480	12	0	9	21
	Opening Year	Rounded	0	530	10	540	0	0	0	0	10	470	0	480	10	0	10	20
	2041	Total	0	586	16	602	0	0	0	0	8	519	0	528	13	0	10	23
	Design Year	Rounded	0	590	20	610	0	0	0	0	10	520	0	530	10	0	10	20
PM Peak	2021	Raw	0	535	23	558	0	0	0	0	14	449	0	463	20	0	11	31
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	583	25	608	0	0	0	0	15	489	0	505	22	0	12	34
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	583	25	608	0	0	0	0	15	489	0	505	22	0	12	34
	Opening Year	Rounded	0	580	30	610	0	0	0	0	20	490	0	510	20	0	10	30
	2041	Total	0	641	28	669	0	0	0	0	17	538	0	555	24	0	13	37
	Design Year	Rounded	0	640	30	670	0	0	0	0	20	540	0	560	20	0	10	30

Volume Adjustment Calculations

State Rd & Woodridge North Dr																	
State Rd						Westbound				State Rd				Woodridge North Dr			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak	2021	Raw	0	314	29	343	0	0	0	0	5	508	0	513	9	0	2	11
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	342	32	374	0	0	0	0	5	554	0	559	10	0	2	12
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	342	32	374	0	0	0	0	5	554	0	559	10	0	2	12
	Opening Year	Rounded	0	340	30	370	0	0	0	0	10	550	0	560	10	0	10	20
	2041	Total	0	376	35	411	0	0	0	0	6	609	0	615	11	0	2	13
	Design Year	Rounded	0	380	40	420	0	0	0	0	10	610	0	620	10	0	10	20

School Peak	2021	Raw	0	478	14	492	0	0	0	0	38	424	0	462	24	0	0	24
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	521	15	536	0	0	0	0	41	462	0	504	26	0	0	26
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	521	15	536	0	0	0	0	41	462	0	504	26	0	0	26
	Opening Year	Rounded	0	520	20	540	0	0	0	0	40	460	0	500	30	0	0	30
	2041	Total	0	573	17	590	0	0	0	0	46	508	0	554	29	0	0	29
	Design Year	Rounded	0	570	20	590	0	0	0	0	50	510	0	560	30	0	0	30

PM Peak	2021	Raw	0	547	3	550	0	0	0	0	1	461	0	462	10	0	1	11
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	596	3	600	0	0	0	0	1	502	0	504	11	0	1	12
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	596	3	600	0	0	0	0	1	502	0	504	11	0	1	12
	Opening Year	Rounded	0	600	10	610	0	0	0	0	10	500	0	510	10	0	10	20
	2041	Total	0	656	4	659	0	0	0	0	1	553	0	554	12	0	1	13
	Design Year	Rounded	0	660	10	670	0	0	0	0	10	550	0	560	10	0	10	20

Volume Adjustment Calculations

State Rd & Woodridge South Dr																	
State Rd						Westbound				State Rd				Woodridge South Dr			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak	2021	Raw	0	311	3	314	0	0	0	0	19	521	0	540	2	0	5	7
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	0	330	3	333	0	0	0	0	20	552	0	572	2	0	5	7
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	330	3	333	0	0	0	0	20	552	0	572	2	0	5	7
	Opening Year	Rounded	0	330	10	340	0	0	0	0	20	550	0	570	10	0	10	20
	2041	Total	0	363	3	366	0	0	0	0	22	607	0	630	2	0	6	8
	Design Year	Rounded	0	360	10	370	0	0	0	0	20	610	0	630	10	0	10	20

School Peak	2021	Raw	0	419	2	421	0	0	0	0	1	412	0	413	15	0	87	102
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	0	444	2	446	0	0	0	0	1	437	0	438	16	0	92	108
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	444	2	446	0	0	0	0	1	437	0	438	16	0	92	108
	Opening Year	Rounded	0	440	10	450	0	0	0	0	10	440	0	450	20	0	90	110
	2041	Total	0	489	2	491	0	0	0	0	1	480	0	482	17	0	101	119
	Design Year	Rounded	0	490	10	500	0	0	0	0	10	480	0	490	20	0	100	120

PM Peak	2021	Raw	0	579	0	579	0	0	0	0	0	474	0	474	3	0	9	12
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	0	614	0	614	0	0	0	0	0	502	0	502	3	0	10	13
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	614	0	614	0	0	0	0	0	502	0	502	3	0	10	13
	Opening Year	Rounded	0	610	0	610	0	0	0	0	0	500	0	500	10	0	10	20
	2041	Total	0	675	0	675	0	0	0	0	0	553	0	553	3	0	10	14
	Design Year	Rounded	0	680	0	680	0	0	0	0	0	550	0	550	10	0	10	20

Volume Adjustment Calculations

State Rd & Cuyahoga Falls Industrial Pkwy

		State Rd				Cuyahoga Falls Industrial Pkwy				State Rd				Eastbound				
		Southbound				Westbound				Northbound								
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak*	2021	Raw	15	321	0	336	29	0	8	37	0	610	50	660	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	16	350	0	366	32	0	9	40	0	665	55	719	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	16	350	0	366	32	0	9	40	0	665	55	719	0	0	0	0
	Opening Year	Rounded	20	350	0	370	30	0	10	40	0	660	50	710	0	0	0	0
	2041	Total	18	385	0	403	35	0	10	44	0	731	60	791	0	0	0	0
	Design Year	Rounded	20	380	0	400	30	0	10	40	0	730	60	790	0	0	0	0
School Peak	2021	Raw	17	489	0	506	31	0	18	49	0	393	32	425	0	0	0	0
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	18	518	0	536	33	0	19	52	0	417	34	451	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	18	518	0	536	33	0	19	52	0	417	34	451	0	0	0	0
	Opening Year	Rounded	20	520	0	540	30	0	20	50	0	420	30	450	0	0	0	0
	2041	Total	20	570	0	590	36	0	21	57	0	458	37	496	0	0	0	0
	Design Year	Rounded	20	570	0	590	40	0	30	70	0	460	40	500	0	0	0	0
PM Peak	2021	Raw	9	577	0	586	25	0	36	61	0	437	17	454	0	0	0	0
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	10	612	0	621	27	0	38	65	0	463	18	481	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	10	612	0	621	27	0	38	65	0	463	18	481	0	0	0	0
	Opening Year	Rounded	10	610	0	620	30	0	40	70	0	460	20	480	0	0	0	0
	2041	Total	10	673	0	683	29	0	42	71	0	510	20	529	0	0	0	0
	Design Year	Rounded	10	670	0	680	30	0	40	70	0	510	20	530	0	0	0	0

Volume Adjustment Calculations

State Rd & Audi Dr/Quick Rd																					
State Rd						Audi Dr						State Rd				Quick Rd					
Southbound						Westbound						Northbound				Eastbound					
Left	Thru	Right	Total			Left	Thru	Right	Total			Left	Thru	Right	Total			Left	Thru	Right	Total

AM Peak	2021	Raw	1	298	6	305	1	0	3	4	0	554	1	555	20	0	0	20
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	1	316	6	323	1	0	3	4	0	587	1	588	21	0	0	21
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	1	316	6	323	1	0	3	4	0	587	1	588	21	0	0	21
	Opening Year	Rounded	10	320	10	340	10	0	10	20	0	590	10	600	20	0	0	20
	2041	Total	1	347	7	356	1	0	3	5	0	646	1	647	23	0	0	23
	Design Year	Rounded	10	350	10	370	10	0	10	20	0	650	10	660	20	0	0	20

School Peak	2021	Raw	2	491	24	517	0	0	1	1	0	395	0	395	24	1	0	25
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	2	520	25	548	0	0	1	1	0	419	0	419	25	1	0	27
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	2	520	25	548	0	0	1	1	0	419	0	419	25	1	0	27
	Opening Year	Rounded	10	520	30	560	0	0	10	10	0	420	0	420	30	10	0	40
	2041	Total	2	573	28	603	0	0	1	1	0	461	0	461	28	1	0	29
	Design Year	Rounded	10	570	30	610	0	0	10	10	0	460	0	460	30	10	0	40

PM Peak	2021	Raw	2	585	13	600	4	1	4	9	0	438	1	439	6	1	0	7
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	2	620	14	636	4	1	4	10	0	464	1	465	6	1	0	7
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	2	620	14	636	4	1	4	10	0	464	1	465	6	1	0	7
	Opening Year	Rounded	10	620	10	640	10	10	10	30	0	460	10	470	10	10	0	20
	2041	Total	2	682	15	700	5	1	5	10	0	511	1	512	7	1	0	8
	Design Year	Rounded	10	680	20	710	10	10	10	30	0	510	10	520	10	10	0	20

Volume Adjustment Calculations

State Rd & Quick Rd/Audi South Dr

		State Rd				Audi South Dr				State Rd				Quick Rd					
		Southbound				Westbound				Northbound				Eastbound					
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total		
AM Peak	2021	Raw	3	289	0	292	2	0	2	4	142	589	12	743	0	0	78	78	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		
	2021	No Build	3	315	0	318	2	0	2	4	155	642	13	810	0	0	85	85	
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		
	2021	Total	3	315	0	318	2	0	2	4	155	642	13	810	0	0	85	85	
	Opening Year	Rounded	10	320	0	330	10	0	10	20	160	640	10	810	0	0	90	90	
	2041	Total	4	347	0	350	2	0	2	5	170	706	14	891	0	0	94	94	
	Design Year	Rounded	10	350	0	360	10	0	10	20	170	710	10	890	0	0	90	90	
School Peak	2021	Raw	4	542	0	546	4	1	8	13	113	408	10	531	1	1	129	131	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		
	2021	No Build	4	591	0	595	4	1	9	14	123	445	11	579	1	1	141	143	
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		
	2021	Total	4	591	0	595	4	1	9	14	123	445	11	579	1	1	141	143	
	Opening Year	Rounded	10	590	0	600	10	10	10	30	120	450	10	580	10	10	140	160	
	2041	Total	5	650	0	655	5	1	10	16	135	489	12	637	1	1	155	157	
	Design Year	Rounded	10	650	0	660	10	10	10	30	140	490	10	640	10	10	160	180	
PM Peak	2021	Raw	5	523	0	528	7	0	14	21	49	415	9	473	1	3	45	49	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		
	2021	No Build	5	570	0	576	8	0	15	23	53	452	10	516	1	3	49	53	
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		
	2021	Total	5	570	0	576	8	0	15	23	53	452	10	516	1	3	49	53	
	Opening Year	Rounded	10	570	0	580	10	0	20	30	50	450	10	510	10	10	50	70	
	2041	Total	6	627	0	633	8	0	17	25	59	498	11	567	1	4	54	59	
	Design Year	Rounded	10	630	0	640	10	0	20	30	60	500	10	570	10	10	50	70	

Volume Adjustment Calculations

State Rd & Kimberlyn Dr

		State Rd Southbound				Access Dr Westbound				State Rd Northbound				Kimberlyn Dr Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak*	2021	Raw	0	490	4	494	0	0	0	0	14	884	0	898	8	0	7	15
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	534	4	538	0	0	0	0	15	964	0	979	9	0	8	16
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	534	4	538	0	0	0	0	15	964	0	979	9	0	8	16
	Opening Year	Rounded	0	530	10	540	0	0	0	0	20	960	0	980	10	0	10	20
	2041	Total	0	588	5	592	0	0	0	0	17	1060	0	1077	10	0	8	18
	Design Year	Rounded	0	590	10	600	0	0	0	0	20	1060	0	1080	10	0	10	20
School Peak	2021	Raw	0	682	7	689	3	0	1	4	11	535	0	546	5	0	11	16
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	743	8	751	3	0	1	4	12	583	0	595	5	0	12	17
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	743	8	751	3	0	1	4	12	583	0	595	5	0	12	17
	Opening Year	Rounded	0	740	10	750	10	0	10	20	10	580	0	590	10	0	10	20
	2041	Total	0	818	8	826	4	0	1	5	13	641	0	655	6	0	13	19
	Design Year	Rounded	0	820	10	830	10	0	10	20	10	640	0	650	10	0	10	20
PM Peak	2021	Raw	0	588	2	590	1	0	1	2	9	462	0	471	3	0	29	32
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	641	2	643	1	0	1	2	10	504	0	513	3	0	32	35
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	641	2	643	1	0	1	2	10	504	0	513	3	0	32	35
	Opening Year	Rounded	0	640	10	650	10	0	10	20	10	500	0	510	10	0	30	40
	2041	Total	0	705	2	707	1	0	1	2	11	554	0	565	4	0	35	38
	Design Year	Rounded	0	710	10	720	10	0	10	20	10	550	0	560	10	0	40	50

Volume Adjustment Calculations

State Rd & Steels Corners Rd

		State Rd				Steels Corners Rd				State Rd				Steels Corners Rd				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
		2021		2041		2021		2041		2021		2041		2021		2041		
AM Peak*	2021	Raw	87	299	115	501	115	200	197	512	36	402	94	532	264	276	218	758
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	97	335	129	561	129	224	221	573	40	450	105	596	296	309	244	849
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	97	335	129	561	129	224	221	573	40	450	105	596	296	309	244	849
	Opening Year	Rounded	100	330	130	560	130	220	220	570	40	450	110	600	300	310	240	850
	2041	Total	107	368	142	617	142	246	243	631	44	495	116	655	325	340	269	934
	Design Year	Rounded	110	370	140	620	140	250	250	640	50	500	120	670	330	340	270	940
School Peak	2021	Raw	126	384	175	685	157	242	109	508	51	342	179	572	132	159	57	348
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	134	407	186	726	166	257	116	538	54	363	190	606	140	169	60	369
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	134	407	186	726	166	257	116	538	54	363	190	606	140	169	60	369
	Opening Year	Rounded	130	410	190	730	170	260	120	550	50	360	190	600	140	170	60	370
	2041	Total	147	448	204	799	183	282	127	592	59	399	209	667	154	185	66	406
	Design Year	Rounded	150	450	200	800	180	280	130	590	60	400	210	670	150	190	70	410
PM Peak	2021	Raw	116	408	182	706	166	231	99	496	87	324	159	570	127	211	75	413
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	123	432	193	748	176	245	105	526	92	343	169	604	135	224	80	438
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	123	432	193	748	176	245	105	526	92	343	169	604	135	224	80	438
	Opening Year	Rounded	120	430	190	740	180	250	110	540	90	340	170	600	140	220	80	440
	2041	Total	135	476	212	823	194	269	115	578	101	378	185	665	148	246	87	482
	Design Year	Rounded	140	480	210	830	190	270	120	580	100	380	190	670	150	250	90	490

Volume Adjustment Calculations

Steels Corners Rd & Koir Dr

		AmeriChem Dr				Steels Corners Rd				Koir Dr				Steels Corners Rd				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
		2021		2041		2021		2041		2021		2041		2021		2041		
AM Peak	2021	Raw	2	0	2	4	1	482	5	488	1	0	0	1	1	383	1	385
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	2	0	2	4	1	511	5	517	1	0	0	1	1	406	1	408
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	2	0	2	4	1	511	5	517	1	0	0	1	1	406	1	408
	Opening Year	Rounded	10	0	10	20	10	510	10	530	10	0	0	10	10	410	10	430
	2041	Total	2	0	2	5	1	562	6	569	1	0	0	1	1	447	1	449
	Design Year	Rounded	10	0	10	20	10	560	10	580	10	0	0	10	10	450	10	470
School Peak	2021	Raw	6	0	6	12	0	490	2	492	1	0	0	1	0	471	2	473
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	6	0	6	13	0	519	2	522	1	0	0	1	0	499	2	501
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	6	0	6	13	0	519	2	522	1	0	0	1	0	499	2	501
	Opening Year	Rounded	10	0	10	20	0	520	10	530	10	0	0	10	0	500	10	510
	2041	Total	7	0	7	14	0	571	2	574	1	0	0	1	0	549	2	552
	Design Year	Rounded	10	0	10	20	0	570	10	580	10	0	0	10	0	550	10	560
PM Peak	2021	Raw	4	0	2	6	1	474	0	475	0	0	2	2	3	481	0	484
	DHV	Factor	1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06		1.06	1.06	1.06	
	2021	No Build	4	0	2	6	1	502	0	504	0	0	2	2	3	510	0	513
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	4	0	2	6	1	502	0	504	0	0	2	2	3	510	0	513
	Opening Year	Rounded	10	0	10	20	10	500	0	510	0	0	10	10	10	510	0	520
	2041	Total	5	0	2	7	1	553	0	554	0	0	2	2	3	561	0	564
	Design Year	Rounded	10	0	10	20	10	550	0	560	0	0	10	10	10	560	0	570

Volume Adjustment Calculations

Steels Corners Rd & Lippman Pkwy

		North Dr				Steels Corners Rd				Lippman Pkwy				Steels Corners Rd				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
		2021		2041		2021		2041		2021		2041		2021		2041		
AM Peak	2021	Raw	0	0	0	0	12	493	0	505	4	0	10	14	1	420	5	426
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	0	0	0	13	552	0	566	4	0	11	16	1	470	6	477
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	0	0	0	13	552	0	566	4	0	11	16	1	470	6	477
	Opening Year	Rounded	0	0	0	0	10	550	0	560	10	0	10	20	10	470	10	490
	2041	Total	0	0	0	0	15	607	0	622	5	0	12	17	1	517	6	525
	Design Year	Rounded	0	0	0	0	20	610	0	630	10	0	10	20	10	520	10	540
School Peak	2021	Raw	0	0	1	1	15	530	0	545	8	0	46	54	0	428	6	434
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	0	1	1	17	594	0	610	9	0	52	60	0	479	7	486
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	0	1	1	17	594	0	610	9	0	52	60	0	479	7	486
	Opening Year	Rounded	0	0	10	10	20	590	0	610	10	0	50	60	0	480	10	490
	2041	Total	0	0	1	1	18	653	0	671	10	0	57	67	0	527	7	535
	Design Year	Rounded	0	0	10	10	20	650	0	670	10	0	60	70	0	530	10	540
PM Peak	2021	Raw	4	0	1	5	9	466	0	475	3	0	10	13	0	439	2	441
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	4	0	1	6	10	522	0	532	3	0	11	15	0	492	2	494
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	4	0	1	6	10	522	0	532	3	0	11	15	0	492	2	494
	Opening Year	Rounded	10	0	10	20	10	520	0	530	10	0	10	20	0	490	10	500
	2041	Total	5	0	1	6	11	574	0	585	4	0	12	16	0	541	2	543
	Design Year	Rounded	10	0	10	20	10	570	0	580	10	0	10	20	0	540	10	550

Volume Adjustment Calculations

Steels Corners Rd & Struktol Dr

		Struktol Dr				Steels Corners Rd				Business Dr				Steels Corners Rd				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	4	0	2	6	1	504	13	518	2	1	4	7	5	425	4	434
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	4	0	2	7	1	564	15	580	2	1	4	8	6	476	4	486
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	4	0	2	7	1	564	15	580	2	1	4	8	6	476	4	486
	Opening Year	Rounded	10	0	10	20	10	560	20	590	10	10	10	30	10	480	10	500
	2041	Total	5	0	2	7	1	621	16	638	2	1	5	9	6	524	5	535
Design Year	Rounded	10	0	10	20	10	620	20	650	10	10	10	30	10	520	10	540	
School Peak	2021	Raw	6	1	0	7	1	535	7	543	1	0	1	2	0	472	0	472
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	7	1	0	8	1	599	8	608	1	0	1	2	0	529	0	529
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	7	1	0	8	1	599	8	608	1	0	1	2	0	529	0	529
	Opening Year	Rounded	10	10	0	20	10	600	10	620	10	0	10	20	0	530	0	530
	2041	Total	7	1	0	9	1	659	9	669	1	0	1	2	0	582	0	582
Design Year	Rounded	10	10	0	20	10	660	10	680	10	0	10	20	0	580	0	580	
PM Peak	2021	Raw	5	0	0	5	4	475	0	479	1	0	5	6	1	455	1	457
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	6	0	0	6	4	532	0	536	1	0	6	7	1	510	1	512
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	6	0	0	6	4	532	0	536	1	0	6	7	1	510	1	512
	Opening Year	Rounded	10	0	0	10	10	530	0	540	10	0	10	20	10	510	10	530
	2041	Total	6	0	0	6	5	585	0	590	1	0	6	7	1	561	1	563
Design Year	Rounded	10	0	0	10	10	590	0	600	10	0	10	20	10	560	10	580	

Volume Adjustment Calculations

Steels Corners Rd & Bonnett Dr																					
Bonnett Dr						Steels Corners Rd						Medina Supply						Steels Corners Rd			
Southbound						Westbound						Northbound						Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total			Left	Thru	Right	Total			Left	Thru	Right	Total

AM Peak	2021	Raw	2	0	4	6	3	518	0	521	2	0	4	6	2	424	0	426
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	2	0	4	7	3	580	0	584	2	0	4	7	2	475	0	477
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	2	0	4	7	3	580	0	584	2	0	4	7	2	475	0	477
	Opening Year	Rounded	10	0	10	20	10	580	0	590	10	0	10	20	10	480	0	490
	2041	Total	2	0	5	7	4	638	0	642	2	0	5	7	2	522	0	525
	Design Year	Rounded	10	0	10	20	10	640	0	650	10	0	10	20	10	520	0	530

School Peak	2021	Raw	1	0	1	2	2	556	0	558	1	0	4	5	2	473	3	478
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	1	0	1	2	2	623	0	625	1	0	4	6	2	530	3	535
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	1	0	1	2	2	623	0	625	1	0	4	6	2	530	3	535
	Opening Year	Rounded	10	0	10	20	10	620	0	630	10	0	10	20	10	530	10	550
	2041	Total	1	0	1	2	2	685	0	687	1	0	5	6	2	583	4	589
	Design Year	Rounded	10	0	10	20	10	690	0	700	10	0	10	20	10	590	10	610

PM Peak	2021	Raw	0	0	1	1	2	485	4	491	0	0	1	1	1	473	1	475
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	0	1	1	2	543	4	550	0	0	1	1	1	530	1	532
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	0	1	1	2	543	4	550	0	0	1	1	1	530	1	532
	Opening Year	Rounded	0	0	10	10	10	540	10	560	0	0	10	10	10	530	10	550
	2041	Total	0	0	1	1	2	598	5	605	0	0	1	1	1	583	1	585
	Design Year	Rounded	0	0	10	10	10	600	10	620	0	0	10	10	10	580	10	600

Volume Adjustment Calculations

Wyoga Lake Rd & Steels Corners Dr																	
Wyoga Lake Rd						Steels Corners Rd				Wyoga Lake Rd				Steels Corners Rd			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak	2021	Raw	82	109	92	283		60	354	134	548		73	127	62	262		168	201	59	428
	DHV	Factor	1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09	
	2021	No Build	89	119	100	308		65	386	146	597		80	138	68	286		183	219	64	467
	Growth	Factor	0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%	
	2021	Total	89	119	100	308		65	386	146	597		80	138	68	286		183	219	64	467
	Opening Year	Rounded	90	120	100	310		70	390	150	610		80	140	70	290		180	220	60	460
	2041	Total	98	131	110	339		72	424	161	657		88	152	74	314		201	241	71	513
	Design Year	Rounded	100	130	110	340		70	420	160	650		90	150	70	310		200	240	70	510

School Peak	2021	Raw	126	175	171	472		106	296	148	550		42	99	95	236		77	247	97	421
	DHV	Factor	1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09	
	2021	No Build	137	191	186	514		116	323	161	600		46	108	104	257		84	269	106	459
	Growth	Factor	0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%	
	2021	Total	137	191	186	514		116	323	161	600		46	108	104	257		84	269	106	459
	Opening Year	Rounded	140	190	190	520		120	320	160	600		50	110	100	260		80	270	110	460
	2041	Total	151	210	205	566		127	355	177	659		50	119	114	283		92	296	116	505
	Design Year	Rounded	150	210	210	570		130	360	180	670		50	120	110	280		90	300	120	510

PM Peak	2021	Raw	105	199	87	391		146	332	151	629		37	103	114	254		112	306	133	551
	DHV	Factor	1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09			1.09	1.09	1.09	
	2021	No Build	114	217	95	426		159	362	165	686		40	112	124	277		122	334	145	601
	Growth	Factor	0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%			0.50%	0.50%	0.50%	
	2021	Total	114	217	95	426		159	362	165	686		40	112	124	277		122	334	145	601
	Opening Year	Rounded	110	220	100	430		160	360	170	690		40	110	120	270		120	330	150	600
	2041	Total	126	239	104	469		175	398	181	754		44	123	137	305		134	367	159	661
	Design Year	Rounded	130	240	100	470		180	400	180	760		40	120	140	300		130	370	160	660

Volume Adjustment Calculations

Wyoga Lake Rd & CVCA North/Falls Commerce Dr																	
Wyoga Lake Rd						CVCA North Dr				Wyoga Lake Rd				Falls Commerce Dr			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak*	2021	Raw	15	411	10	436	0	0	0	0	11	227	3	241	1	0	5	6
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	17	460	11	488	0	0	0	0	12	254	3	270	1	0	6	7
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	17	460	11	488	0	0	0	0	12	254	3	270	1	0	6	7
	Opening Year	Rounded	20	460	10	490	0	0	0	0	10	250	10	270	10	0	10	20
	2041	Total	18	506	12	537	0	0	0	0	14	280	4	297	1	0	6	7
	Design Year	Rounded	20	510	10	540	0	0	0	0	10	280	10	300	10	0	10	20

School Peak	2021	Raw	21	248	15	284	22	4	68	94	13	371	8	392	4	0	9	13
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	24	278	17	318	25	4	76	105	15	416	9	439	4	0	10	15
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	24	278	17	318	25	4	76	105	15	416	9	439	4	0	10	15
	Opening Year	Rounded	20	280	20	320	30	10	80	120	20	420	10	450	10	0	10	20
	2041	Total	26	306	18	350	27	5	84	116	16	457	10	483	5	0	11	16
	Design Year	Rounded	30	310	20	360	30	10	80	120	20	460	10	490	10	0	10	20

PM Peak	2021	Raw	20	366	4	390	6	0	12	18	2	226	7	235	11	1	3	15
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	22	410	4	437	7	0	13	20	2	253	8	263	12	1	3	17
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	22	410	4	437	7	0	13	20	2	253	8	263	12	1	3	17
	Opening Year	Rounded	20	410	10	440	10	0	10	20	10	250	10	270	10	10	10	30
	2041	Total	25	451	5	480	7	0	15	22	2	278	9	290	14	1	4	18
	Design Year	Rounded	30	450	10	490	10	0	20	30	10	280	10	300	10	10	10	30

Volume Adjustment Calculations

Wyoga Lake Rd & CVCA Center Dr

		Wyoga Lake Rd				CVCA Center Dr				Wyoga Lake Rd				Eastbound				
		Southbound				Westbound				Northbound								
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	0	423	0	423	15	0	46	61	0	212	0	212	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	461	0	461	16	0	50	66	0	231	0	231	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	461	0	461	16	0	50	66	0	231	0	231	0	0	0	0
	Opening Year	Rounded	0	460	0	460	20	0	50	70	0	230	0	230	0	0	0	0
	2041	Total	0	507	0	507	18	0	55	73	0	254	0	254	0	0	0	0
	Design Year	Rounded	0	510	0	510	20	0	60	80	0	250	0	250	0	0	0	0
School Peak	2021	Raw	0	287	0	287	109	0	110	219	0	242	0	242	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	313	0	313	119	0	120	239	0	264	0	264	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	313	0	313	119	0	120	239	0	264	0	264	0	0	0	0
	Opening Year	Rounded	0	310	0	310	120	0	120	240	0	260	0	260	0	0	0	0
	2041	Total	0	344	0	344	131	0	132	263	0	290	0	290	0	0	0	0
	Design Year	Rounded	0	340	0	340	130	0	130	260	0	290	0	290	0	0	0	0
PM Peak	2021	Raw	0	366	0	366	29	0	42	71	0	178	1	179	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	0	399	0	399	32	0	46	77	0	194	1	195	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	399	0	399	32	0	46	77	0	194	1	195	0	0	0	0
	Opening Year	Rounded	0	400	0	400	30	0	50	80	0	190	10	200	0	0	0	0
	2041	Total	0	439	0	439	35	0	50	85	0	213	1	215	0	0	0	0
	Design Year	Rounded	0	440	0	440	40	0	50	90	0	210	10	220	0	0	0	0

Volume Adjustment Calculations

Wyoga Lake Rd & CVCA South Dr

		Wyoga Lake Rd Southbound				CVCA South Dr Westbound				Wyoga Lake Rd Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	57	389	0	446	2	0	1	3	0	215	98	313	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	62	424	0	486	2	0	1	3	0	234	107	341	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	62	424	0	486	2	0	1	3	0	234	107	341	0	0	0	0
	Opening Year	Rounded	60	420	0	480	10	0	10	20	0	230	110	340	0	0	0	0
	2041	Total	68	466	0	535	2	0	1	4	0	258	118	375	0	0	0	0
	Design Year	Rounded	70	470	0	540	10	0	10	20	0	260	120	380	0	0	0	0
School Peak	2021	Raw	72	332	0	404	3	0	3	6	0	246	66	312	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	78	362	0	440	3	0	3	7	0	268	72	340	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	78	362	0	440	3	0	3	7	0	268	72	340	0	0	0	0
	Opening Year	Rounded	80	360	0	440	10	0	10	20	0	270	70	340	0	0	0	0
	2041	Total	86	398	0	484	4	0	4	7	0	295	79	374	0	0	0	0
	Design Year	Rounded	90	400	0	490	10	0	10	20	0	300	80	380	0	0	0	0
PM Peak	2021	Raw	50	354	0	404	2	0	0	2	0	181	58	239	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	55	386	0	440	2	0	0	2	0	197	63	261	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	55	386	0	440	2	0	0	2	0	197	63	261	0	0	0	0
	Opening Year	Rounded	60	390	0	450	10	0	0	10	0	200	60	260	0	0	0	0
	2041	Total	60	424	0	484	2	0	0	2	0	217	70	287	0	0	0	0
	Design Year	Rounded	60	420	0	480	10	0	0	10	0	220	70	290	0	0	0	0

Volume Adjustment Calculations

Wyoga Lake Rd & Walsh North Dr

		Wyoga Lake Rd Southbound				Westbound				Wyoga Lake Rd Northbound				Walsh North Dr Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	0	257	129	386	0	0	0	0	63	404	0	467	2	0	3	5
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	288	144	432	0	0	0	0	71	452	0	523	2	0	3	6
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	288	144	432	0	0	0	0	71	452	0	523	2	0	3	6
	Opening Year	Rounded	0	290	140	430	0	0	0	0	70	450	0	520	10	0	10	20
	2041	Total	0	317	159	476	0	0	0	0	78	498	0	575	2	0	4	6
	Design Year	Rounded	0	320	160	480	0	0	0	0	80	500	0	580	10	0	10	20
School Peak	2021	Raw	0	362	12	374				0	25	226	0	251	47	0	67	114
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	405	13	419	0	0	0	0	28	253	0	281	53	0	75	128
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	405	13	419	0	0	0	0	28	253	0	281	53	0	75	128
	Opening Year	Rounded	0	410	10	420	0	0	0	0	30	250	0	280	50	0	80	130
	2041	Total	0	446	15	461	0	0	0	0	31	278	0	309	58	0	83	140
	Design Year	Rounded	0	450	10	460	0	0	0	0	40	280	0	320	60	0	80	140
PM Peak	2021	Raw	0	323	35	358				0	4	238	0	242	28	0	4	32
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	0	362	39	401	0	0	0	0	4	267	0	271	31	0	4	36
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	0	362	39	401	0	0	0	0	4	267	0	271	31	0	4	36
	Opening Year	Rounded	0	360	40	400	0	0	0	0	10	270	0	280	30	0	10	40
	2041	Total	0	398	43	441	0	0	0	0	5	293	0	298	34	0	5	39
	Design Year	Rounded	0	400	40	440	0	0	0	0	10	290	0	300	30	0	10	40

Volume Adjustment Calculations

Wyoga Lake Rd & Walsh Center Dr/Wyoga Lake Blvd																	
Wyoga Lake Rd.						Wyoga Lake Blvd				Wyoga Lake Rd				Walsh Center Dr			
Southbound						Westbound				Northbound				Eastbound			
Left	Thru	Right	Total			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total

AM Peak	2021	Raw	17	204	41	262	22	12	99	133	94	306	11	411	63	8	79	150
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	19	228	46	293	25	13	111	149	105	343	12	460	71	9	88	168
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	19	228	46	293	25	13	111	149	105	343	12	460	71	9	88	168
	Opening Year	Rounded	20	230	50	300	30	10	110	150	110	340	10	460	70	10	90	170
	2041	Total	21	251	51	323	27	15	122	164	116	377	14	506	78	10	97	185
	Design Year	Rounded	20	250	50	320	30	20	120	170	120	380	10	510	80	10	100	190

School Peak	2021	Raw	74	340	17	431	25	3	21	49	9	173	37	219	61	27	79	167
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	83	381	19	483	28	3	24	55	10	194	41	245	68	30	88	187
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	83	381	19	483	28	3	24	55	10	194	41	245	68	30	88	187
	Opening Year	Rounded	80	380	20	480	30	10	20	60	10	190	40	240	70	30	90	190
	2041	Total	91	419	21	531	31	4	26	60	11	213	46	270	75	33	97	206
	Design Year	Rounded	90	420	20	530	30	10	30	70	10	210	50	270	80	30	100	210

PM Peak	2021	Raw	18	281	28	327	29	3	23	55	35	199	35	269	22	1	16	39
	DHV	Factor	1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12		1.12	1.12	1.12	
	2021	No Build	20	315	31	366	32	3	26	62	39	223	39	301	25	1	18	44
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	20	315	31	366	32	3	26	62	39	223	39	301	25	1	18	44
	Opening Year	Rounded	20	320	30	370	30	10	30	70	40	220	40	300	30	10	20	60
	2041	Total	22	346	34	403	36	4	28	68	43	245	43	331	27	1	20	48
	Design Year	Rounded	20	350	30	400	40	10	30	80	40	250	40	330	30	10	20	60

Volume Adjustment Calculations

Wyoga Lake Rd & Walsh South Dr/Chateau Dr

		Wyoga Lake Rd				Chateau Dr				Wyoga Lake Rd				Walsh South Dr				
		Southbound				Westbound				Northbound				Eastbound				
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
		2021		2041		2021		2041		2021		2041		2021		2041		
AM Peak*	Raw	10	248	45	303	32	0	31	63	71	450	16	537	27	0	63	90	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	11	270	49	330	35	0	34	69	77	491	17	585	29	0	69	98
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	11	270	49	330	35	0	34	69	77	491	17	585	29	0	69	98
	Opening Year	Rounded	10	270	50	330	40	0	30	70	80	490	20	590	30	0	70	100
	2041	Total	12	297	54	363	38	0	37	76	85	540	19	644	32	0	76	108
	Design Year	Rounded	10	300	50	360	40	0	40	80	90	540	20	650	30	0	80	110
School Peak	Raw	26	398	59	483	17	1	33	51	56	191	32	279	9	0	24	33	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	28	434	64	526	19	1	36	56	61	208	35	304	10	0	26	36
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	28	434	64	526	19	1	36	56	61	208	35	304	10	0	26	36
	Opening Year	Rounded	30	430	60	520	20	10	40	70	60	210	40	310	10	0	30	40
	2041	Total	31	477	71	579	20	1	40	61	67	229	38	335	11	0	29	40
	Design Year	Rounded	30	480	70	580	20	10	40	70	70	230	40	340	10	0	30	40
PM Peak	Raw	37	287	13	337	53	1	21	75	18	227	67	312	10	0	9	19	
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	40	313	14	367	58	1	23	82	20	247	73	340	11	0	10	21
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	40	313	14	367	58	1	23	82	20	247	73	340	11	0	10	21
	Opening Year	Rounded	40	310	10	360	60	10	20	90	20	250	70	340	10	0	10	20
	2041	Total	44	344	16	404	64	1	25	90	22	272	80	374	12	0	11	23
	Design Year	Rounded	40	340	20	400	60	10	30	100	20	270	80	370	10	0	10	20

Volume Adjustment Calculations

Wyoga Lake Rd & Wyoga Lake Townhomes Dr
























		Wyoga Lake Rd				Wyoga Lake Townhomes Dr				Wyoga Lake Rd				Eastbound				
		Southbound				Westbound				Northbound								
		Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
AM Peak	2021	Raw	1	243	0	244	18	0	14	32	0	419	5	424	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	1	265	0	266	20	0	15	35	0	457	5	462	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	1	265	0	266	20	0	15	35	0	457	5	462	0	0	0	0
	Opening Year	Rounded	10	270	0	280	20	0	20	40	0	460	10	470	0	0	0	0
	2041	Total	1	291	0	293	22	0	17	38	0	502	6	508	0	0	0	0
	Design Year	Rounded	10	290	0	300	20	0	20	40	0	500	10	510	0	0	0	0
School Peak	2021	Raw	6	432	0	438	11	0	12	23	0	270	15	285	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	7	471	0	477	12	0	13	25	0	294	16	311	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	7	471	0	477	12	0	13	25	0	294	16	311	0	0	0	0
	Opening Year	Rounded	10	470	0	480	10	0	10	20	0	290	20	310	0	0	0	0
	2041	Total	7	518	0	525	13	0	14	28	0	324	18	342	0	0	0	0
	Design Year	Rounded	10	520	0	530	10	0	10	20	0	320	20	340	0	0	0	0
PM Peak	2021	Raw	8	338	0	346	14	0	4	18	0	307	20	327	0	0	0	0
	DHV	Factor	1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09		1.09	1.09	1.09	
	2021	No Build	9	368	0	377	15	0	4	20	0	335	22	356	0	0	0	0
	Growth	Factor	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
	2021	Total	9	368	0	377	15	0	4	20	0	335	22	356	0	0	0	0
	Opening Year	Rounded	10	370	0	380	20	0	10	30	0	340	20	360	0	0	0	0
	2041	Total	10	405	0	415	17	0	5	22	0	368	24	392	0	0	0	0
	Design Year	Rounded	10	410	0	420	20	0	10	30	0	370	20	390	0	0	0	0



APPENDIX D EXISTING CONDITIONS CAPACITY ANALYSIS

HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

1_2021 AM Peak
 Existing Year - No Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	330	230	130	250	210	40	360	100	90	290	120
Future Volume (veh/h)	280	330	230	130	250	210	40	360	100	90	290	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	350	412	288	160	309	259	45	409	114	112	362	150
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.88	0.88	0.88	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	415	290	192	671	668	203	459	490	197	476	593
Arrive On Green	0.12	0.41	0.41	0.07	0.36	0.36	0.04	0.24	0.24	0.06	0.25	0.25
Sat Flow, veh/h	1781	1025	716	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	350	0	700	160	309	259	45	409	114	112	362	150
Grp Sat Flow(s),veh/h/ln	1781	0	1741	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	15.0	0.0	50.1	7.0	15.9	14.2	2.3	25.5	6.7	5.9	22.4	8.2
Cycle Q Clear(g_c), s	15.0	0.0	50.1	7.0	15.9	14.2	2.3	25.5	6.7	5.9	22.4	8.2
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	466	0	706	192	671	668	203	459	490	197	476	593
V/C Ratio(X)	0.75	0.00	0.99	0.84	0.46	0.39	0.22	0.89	0.23	0.57	0.76	0.25
Avail Cap(c_a), veh/h	466	0	706	275	671	668	337	698	684	299	671	758
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	37.1	30.3	30.9	25.1	35.0	46.4	32.3	35.9	43.2	27.2
Incr Delay (d2), s/veh	6.4	0.0	31.9	12.2	2.3	1.7	0.4	8.3	0.2	1.9	2.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	26.9	3.6	7.5	5.6	1.0	13.2	2.6	2.6	10.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	0.0	69.0	42.6	33.2	26.8	35.5	54.7	32.5	37.8	45.9	27.3
LnGrp LOS	C	A	E	D	C	C	D	D	C	D	D	C
Approach Vol, veh/h		1050			728			568			624	
Approach Delay, s/veh		55.9			33.0			48.7			40.0	
Approach LOS		E			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	57.9	12.5	38.9	22.0	52.0	14.8	36.6				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	9.0	52.1	4.3	24.4	17.0	17.9	7.9	27.5				
Green Ext Time (p_c), s	0.1	0.0	0.0	2.0	0.0	2.1	0.1	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			45.6									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

1_2021 AM Peak
Existing Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	270	60	70	410	150	80	140	70	90	120	100
Future Volume (veh/h)	180	270	60	70	410	150	80	140	70	90	120	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	338	75	83	488	179	100	175	88	112	150	125
Peak Hour Factor	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	676	150	438	540	198	255	258	130	271	213	177
Arrive On Green	0.09	0.46	0.46	0.05	0.41	0.41	0.06	0.22	0.22	0.06	0.23	0.23
Sat Flow, veh/h	1781	1482	329	1781	1305	479	1781	1174	590	1781	943	786
Grp Volume(v), veh/h	225	0	413	83	0	667	100	0	263	112	0	275
Grp Sat Flow(s),veh/h/ln	1781	0	1811	1781	0	1784	1781	0	1764	1781	0	1729
Q Serve(g_s), s	8.0	0.0	18.3	3.0	0.0	39.8	4.9	0.0	15.6	5.5	0.0	16.7
Cycle Q Clear(g_c), s	8.0	0.0	18.3	3.0	0.0	39.8	4.9	0.0	15.6	5.5	0.0	16.7
Prop In Lane	1.00		0.18	1.00		0.27	1.00		0.33	1.00		0.45
Lane Grp Cap(c), veh/h	275	0	826	438	0	739	255	0	387	271	0	390
V/C Ratio(X)	0.82	0.00	0.50	0.19	0.00	0.90	0.39	0.00	0.68	0.41	0.00	0.71
Avail Cap(c_a), veh/h	425	0	954	663	0	940	463	0	387	468	0	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	21.8	18.1	0.0	31.2	32.7	0.0	40.8	32.3	0.0	40.6
Incr Delay (d2), s/veh	5.8	0.0	1.0	0.2	0.0	12.2	0.7	0.0	9.3	0.7	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	7.8	1.2	0.0	18.9	2.1	0.0	7.7	2.4	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	22.8	18.3	0.0	43.4	33.4	0.0	50.0	33.1	0.0	50.9
LnGrp LOS	C	A	C	B	A	D	C	A	D	C	A	D
Approach Vol, veh/h		638			750			363				387
Approach Delay, s/veh		25.6			40.6			45.4				45.7
Approach LOS		C			D			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	58.0	12.7	31.7	16.4	53.2	13.4	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	5.0	20.3	6.9	18.7	10.0	41.8	7.5	17.6				
Green Ext Time (p_c), s	0.1	3.5	0.1	0.7	0.3	5.3	0.1	0.7				
Intersection Summary												
HCM 6th Ctrl Delay												37.9
HCM 6th LOS												D

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	10	20	830	490	10
Future Vol, veh/h	10	10	20	830	490	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	25	1038	613	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1708	620	626	0	-	0
Stage 1	620	-	-	-	-	-
Stage 2	1088	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	100	488	956	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	97	488	956	-	-	-
Mov Cap-2 Maneuver	97	-	-	-	-	-
Stage 1	522	-	-	-	-	-
Stage 2	323	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.2	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	162	-	-
HCM Lane V/C Ratio	0.026	-	0.154	-	-
HCM Control Delay (s)	8.9	-	31.2	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection										
Int Delay, s/veh	3									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations	↔		↔	↔		↔	↔		↔	
Traffic Vol, veh/h	10	10	160	670	10	10	400	0	0	90
Future Vol, veh/h	10	10	160	670	10	10	400	0	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	84	84	84	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	190	798	12	13	500	0	0	113

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1767	804	500	0
Stage 1	1184	-	-	-
Stage 2	583	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	65	383	1064	-
Stage 1	231	-	-	-
Stage 2	498	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	45	383	1064	-
Mov Cap-2 Maneuver	45	-	-	-
Stage 1	190	-	-	-
Stage 2	394	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	68.2	1.7	0.2	12.8
HCM LOS	F			B

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	1064	-	-	81	571	816
HCM Lane V/C Ratio	0.179	-	-	0.309	0.197	0.015
HCM Control Delay (s)	9.1	-	-	68.2	12.8	9.5
HCM Lane LOS	A	-	-	F	B	A
HCM 95th %tile Q(veh)	0.7	-	-	1.1	0.7	0

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	20	0	0	10	0	10	0	670	10	10	400	10
Future Vol, veh/h	20	0	0	10	0	10	0	670	10	10	400	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	81	81	81	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	0	0	13	0	13	0	827	12	12	482	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1352	1351	488	1345	1351	833	494	0	0	839	0	0
Stage 1	512	512	-	833	833	-	-	-	-	-	-	-
Stage 2	840	839	-	512	518	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	127	150	580	129	150	369	1070	-	-	796	-	-
Stage 1	545	536	-	363	384	-	-	-	-	-	-	-
Stage 2	360	381	-	545	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	121	148	580	127	148	369	1070	-	-	796	-	-
Mov Cap-2 Maneuver	121	148	-	127	148	-	-	-	-	-	-	-
Stage 1	545	528	-	363	384	-	-	-	-	-	-	-
Stage 2	348	381	-	537	525	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	42.3		26.9		0		0.2	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1070	-	-	121	189	796	-	-
HCM Lane V/C Ratio	-	-	-	0.207	0.132	0.015	-	-
HCM Control Delay (s)	0	-	-	42.3	26.9	9.6	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0	-	-

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	10	650	50	20	380
Future Vol, veh/h	30	10	650	50	20	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	813	63	25	475

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1370	845	0	0	876
Stage 1	845	-	-	-	-
Stage 2	525	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	161	363	-	-	771
Stage 1	421	-	-	-	-
Stage 2	593	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	154	363	-	-	771
Mov Cap-2 Maneuver	154	-	-	-	-
Stage 1	421	-	-	-	-
Stage 2	567	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.5	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	180	771
HCM Lane V/C Ratio	-	-	0.278	0.032
HCM Control Delay (s)	-	-	32.5	9.8
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	20	650	390	10
Future Vol, veh/h	10	10	20	650	390	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	81	81	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	25	802	488	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1347	495	501	0	-	0
Stage 1	495	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	167	575	1063	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	575	1063	-	-	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1063	-	250	-	-
HCM Lane V/C Ratio	0.023	-	0.1	-	-
HCM Control Delay (s)	8.5	0	21	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	650	390	30
Future Vol, veh/h	10	10	10	650	390	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	13	813	488	38

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1346	507	526	0	-	0
Stage 1	507	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	167	566	1041	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	566	1041	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1041	-	253	-	-
HCM Lane V/C Ratio	0.012	-	0.099	-	-
HCM Control Delay (s)	8.5	0	20.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	30	10	10	650	410	10
Future Vol, veh/h	30	10	10	650	410	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	13	813	513	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1359	520	526	0	-	0
Stage 1	520	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	164	556	1041	-	-	-
Stage 1	597	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	160	556	1041	-	-	-
Mov Cap-2 Maneuver	160	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	29.7	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	1041	-	195	-	-
HCM Lane V/C Ratio	0.012	-	0.256	-	-
HCM Control Delay (s)	8.5	0	29.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection												
Int Delay, s/veh	0.7											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	10	10	0	10	10	660	10	0	400	10
Future Vol, veh/h	0	0	10	10	0	10	10	660	10	0	400	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	13	13	0	13	13	825	13	0	500	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1371	1371	507	1371	1371	832	513	0	0	-	-	0
Stage 1	507	507	-	858	858	-	-	-	-	-	-	-
Stage 2	864	864	-	513	513	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	123	146	566	123	146	369	1052	-	-	0	-	-
Stage 1	548	539	-	352	374	-	-	-	-	0	-	-
Stage 2	349	371	-	544	536	-	-	-	-	0	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	117	143	566	118	143	369	1052	-	-	-	-	-
Mov Cap-2 Maneuver	117	143	-	118	143	-	-	-	-	-	-	-
Stage 1	535	539	-	344	365	-	-	-	-	-	-	-
Stage 2	329	362	-	532	536	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW				
HCM Control Delay, s	11.5		28.4		0.1		0				
HCM LOS	B		D								

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWT	SWR
Capacity (veh/h)	1052	-	-	179	566	-
HCM Lane V/C Ratio	0.012	-	-	0.14	0.022	-
HCM Control Delay (s)	8.5	0	-	28.4	11.5	-
HCM Lane LOS	A	A	-	D	B	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	10	660	10	10	400
Future Vol, veh/h	10	10	660	10	10	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	825	13	12	471

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1327	832	0	0	838	0
Stage 1	832	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	171	369	-	-	796	-
Stage 1	427	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	168	369	-	-	796	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	601	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.5	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	231	796
HCM Lane V/C Ratio	-	-	0.108	0.015
HCM Control Delay (s)	-	-	22.5	9.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	10	10	660	400	10
Future Vol, veh/h	40	10	10	660	400	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	13	11	750	500	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1279	507	513	0	-	0
Stage 1	507	-	-	-	-	-
Stage 2	772	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	183	566	1052	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	566	1052	-	-	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	456	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.6	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1052	-	208	-	-
HCM Lane V/C Ratio	0.011	-	0.3	-	-
HCM Control Delay (s)	8.5	0	29.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	1.2	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	500	10	10	570	10	0
Future Vol, veh/h	500	10	10	570	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	625	13	11	633	13	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	638	0	1287
Stage 1	-	-	-	-	632
Stage 2	-	-	-	-	655
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	946	-	181
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	517
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	946	-	178
Mov Cap-2 Maneuver	-	-	-	-	178
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	508

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	26.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	178	-	-	946	-
HCM Lane V/C Ratio	0.07	-	-	0.012	-
HCM Control Delay (s)	26.7	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	500	570	10	10	10
Future Vol, veh/h	10	500	570	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	625	633	11	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	644	0	-	0	1290 639
Stage 1	-	-	-	-	639 -
Stage 2	-	-	-	-	651 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	941	-	-	-	180 476
Stage 1	-	-	-	-	526 -
Stage 2	-	-	-	-	519 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	941	-	-	-	176 476
Mov Cap-2 Maneuver	-	-	-	-	176 -
Stage 1	-	-	-	-	515 -
Stage 2	-	-	-	-	519 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	941	-	-	-	257
HCM Lane V/C Ratio	0.013	-	-	-	0.097
HCM Control Delay (s)	8.9	0	-	-	20.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	490	10	10	580	10	10
Future Vol, veh/h	490	10	10	580	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	598	12	11	659	13	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	610	0	1285 604
Stage 1	-	-	-	-	604 -
Stage 2	-	-	-	-	681 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	969	-	182 498
Stage 1	-	-	-	-	546 -
Stage 2	-	-	-	-	503 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	969	-	179 498
Mov Cap-2 Maneuver	-	-	-	-	179 -
Stage 1	-	-	-	-	546 -
Stage 2	-	-	-	-	494 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	263	-	-	969	-
HCM Lane V/C Ratio	0.095	-	-	0.012	-
HCM Control Delay (s)	20.1	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	490	580	0	0	0
Future Vol, veh/h	10	490	580	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	598	659	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	659	0	-	0	1281 659
Stage 1	-	-	-	-	659 -
Stage 2	-	-	-	-	622 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	929	-	-	-	183 464
Stage 1	-	-	-	-	515 -
Stage 2	-	-	-	-	535 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	929	-	-	-	180 464
Mov Cap-2 Maneuver	-	-	-	-	180 -
Stage 1	-	-	-	-	505 -
Stage 2	-	-	-	-	535 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	929	-	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	8.9	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	480	570	20	10	10
Future Vol, veh/h	10	480	570	20	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	585	663	23	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	686	0	-	0	1284 675
Stage 1	-	-	-	-	675 -
Stage 2	-	-	-	-	609 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	908	-	-	-	182 454
Stage 1	-	-	-	-	506 -
Stage 2	-	-	-	-	543 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	908	-	-	-	178 454
Mov Cap-2 Maneuver	-	-	-	-	178 -
Stage 1	-	-	-	-	496 -
Stage 2	-	-	-	-	543 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	908	-	-	-	256
HCM Lane V/C Ratio	0.013	-	-	-	0.098
HCM Control Delay (s)	9	0	-	-	20.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	470	10	10	570	10	10
Future Vol, veh/h	470	10	10	570	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	573	12	12	663	13	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	585	0	1266 579
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	687 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	990	-	187 515
Stage 1	-	-	-	-	560 -
Stage 2	-	-	-	-	499 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	990	-	183 515
Mov Cap-2 Maneuver	-	-	-	-	183 -
Stage 1	-	-	-	-	560 -
Stage 2	-	-	-	-	490 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	990	-
HCM Lane V/C Ratio	0.093	-	-	0.012	-
HCM Control Delay (s)	19.7	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	490	0	10	580	0	10	0	10	10	0	10
Future Vol, veh/h	10	490	0	10	580	0	10	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	81	81	81	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	613	0	12	716	0	13	0	13	13	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	716	0	0	613	0	0	1386	1379	613	1386	1379	716
Stage 1	-	-	-	-	-	-	639	639	-	740	740	-
Stage 2	-	-	-	-	-	-	747	740	-	646	639	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	885	-	-	966	-	-	120	144	492	120	144	430
Stage 1	-	-	-	-	-	-	464	470	-	409	423	-
Stage 2	-	-	-	-	-	-	405	423	-	460	470	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	885	-	-	966	-	-	113	138	492	113	138	430
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	138	-	113	138	-
Stage 1	-	-	-	-	-	-	454	460	-	400	414	-
Stage 2	-	-	-	-	-	-	385	414	-	438	460	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			27.6			28.4		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	184	885	-	-	966	-	-	179
HCM Lane V/C Ratio	0.136	0.014	-	-	0.013	-	-	0.14
HCM Control Delay (s)	27.6	9.1	0	-	8.8	0	-	28.4
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.5

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	596	10	10	421
Future Vol, veh/h	20	20	596	10	10	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	25	745	13	13	526

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1304	752	0	0	758
Stage 1	752	-	-	-	-
Stage 2	552	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	177	410	-	-	853
Stage 1	466	-	-	-	-
Stage 2	577	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	173	410	-	-	853
Mov Cap-2 Maneuver	173	-	-	-	-
Stage 1	466	-	-	-	-
Stage 2	564	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	243	853
HCM Lane V/C Ratio	-	-	0.206	0.015
HCM Control Delay (s)	-	-	23.6	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	30	0	70	40	0	30	80	516	20	10	321	50
Future Vol, veh/h	30	0	70	40	0	30	80	516	20	10	321	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	0	88	50	0	38	100	645	25	13	401	63

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1336	1329	433	1348	1335	645	464	0	0	670	0	0
Stage 1	459	459	-	845	845	-	-	-	-	-	-	-
Stage 2	877	870	-	503	490	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	130	155	623	128	154	472	1097	-	-	920	-	-
Stage 1	582	566	-	357	379	-	-	-	-	-	-	-
Stage 2	343	369	-	551	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	105	130	623	96	129	472	1097	-	-	920	-	-
Mov Cap-2 Maneuver	105	130	-	96	129	-	-	-	-	-	-	-
Stage 1	497	555	-	305	324	-	-	-	-	-	-	-
Stage 2	270	315	-	465	539	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	32.8		61.1		1.1		0.2	
HCM LOS	D		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	251	146	920	-
HCM Lane V/C Ratio	0.091	-	-	0.498	0.599	0.014	-
HCM Control Delay (s)	8.6	0	-	32.8	61.1	9	0
HCM Lane LOS	A	A	-	D	F	A	A
HCM 95th %tile Q(veh)	0.3	-	-	2.6	3.1	0	-

Intersection												
Int Delay, s/veh	33.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	70	10	90	30	20	110	110	456	10	20	261	50
Future Vol, veh/h	70	10	90	30	20	110	110	456	10	20	261	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	13	113	38	25	138	138	570	13	25	326	63

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1342	1267	358	1324	1292	577	389	0	0	583	0	0
Stage 1	408	408	-	853	853	-	-	-	-	-	-	-
Stage 2	934	859	-	471	439	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	129	169	686	133	163	516	1170	-	-	991	-	-
Stage 1	620	597	-	354	376	-	-	-	-	-	-	-
Stage 2	319	373	-	573	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 68	135	686	88	130	516	1170	-	-	991	-	-
Mov Cap-2 Maneuver	~ 68	135	-	88	130	-	-	-	-	-	-	-
Stage 1	512	578	-	292	310	-	-	-	-	-	-	-
Stage 2	177	308	-	454	560	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	165.8		78.8		1.6		0.5	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1170	-	-	72	686	226	991	-	-
HCM Lane V/C Ratio	0.118	-	-	1.389	0.164	0.885	0.025	-	-
HCM Control Delay (s)	8.5	0	-	\$ 339.7	11.3	78.8	8.7	0	-
HCM Lane LOS	A	A	-	F	B	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	8.1	0.6	7.2	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	70	566	321	140
Future Vol, veh/h	10	10	70	566	321	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	88	708	401	175

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1373	489	576	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	161	579	997	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	579	997	-	-	-
Mov Cap-2 Maneuver	138	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.2	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	997	-	223	-	-
HCM Lane V/C Ratio	0.088	-	0.112	-	-
HCM Control Delay (s)	9	0	23.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	466	110	60	451
Future Vol, veh/h	10	10	466	110	60	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	583	138	75	564

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1366	652	0	0	721	0
Stage 1	652	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	162	468	-	-	881	-
Stage 1	518	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	142	468	-	-	881	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	518	-	-	-	-	-
Stage 2	425	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.6	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	218	881
HCM Lane V/C Ratio	-	-	0.115	0.085
HCM Control Delay (s)	-	-	23.6	9.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	50	476	0	0	491
Future Vol, veh/h	20	50	476	0	0	491
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	63	595	0	0	592

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1187	595	0	0	595
Stage 1	595	-	-	-	-
Stage 2	592	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	208	504	-	-	981
Stage 1	551	-	-	-	-
Stage 2	553	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	208	504	-	-	981
Mov Cap-2 Maneuver	208	-	-	-	-
Stage 1	551	-	-	-	-
Stage 2	553	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	981
HCM Lane V/C Ratio	-	-	0.244	-
HCM Control Delay (s)	-	-	18.3	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	0	0	0	10	506	10	20	481	10
Future Vol, veh/h	10	0	10	0	0	0	10	506	10	20	481	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	0	0	0	13	633	13	25	601	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1324	1330	608	1330	1330	640	614	0	0	646	0	0
Stage 1	658	658	-	666	666	-	-	-	-	-	-	-
Stage 2	666	672	-	664	664	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	133	155	496	132	155	475	965	-	-	939	-	-
Stage 1	453	461	-	449	457	-	-	-	-	-	-	-
Stage 2	449	454	-	450	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	127	146	496	123	146	475	965	-	-	939	-	-
Mov Cap-2 Maneuver	127	146	-	123	146	-	-	-	-	-	-	-
Stage 1	443	443	-	440	447	-	-	-	-	-	-	-
Stage 2	440	444	-	421	440	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.3		0		0.2		0.3	
HCM LOS	D		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	965	-	-	202	-	939	-
HCM Lane V/C Ratio	0.013	-	-	0.124	-	0.027	-
HCM Control Delay (s)	8.8	0	-	25.3	0	8.9	0
HCM Lane LOS	A	A	-	D	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0.1	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	24	43	580	410	28
Future Vol, veh/h	16	24	43	580	410	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	26	47	630	446	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1185	461	476	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	209	600	1086	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	600	1086	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	592	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.6	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	328	-	-
HCM Lane V/C Ratio	0.043	-	0.133	-	-
HCM Control Delay (s)	8.5	0	17.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	10	14	4	580	410	3
Future Vol, veh/h	10	14	4	580	410	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	15	4	630	446	3
























Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1086	448	449	0	0
Stage 1	448	-	-	-	-
Stage 2	638	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	239	611	1111	-	-
Stage 1	644	-	-	-	-
Stage 2	526	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	238	611	1111	-	-
Mov Cap-2 Maneuver	238	-	-	-	-
Stage 1	640	-	-	-	-
Stage 2	526	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1111	-	370	-	-
HCM Lane V/C Ratio	0.004	-	0.071	-	-
HCM Control Delay (s)	8.3	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

2_2021 School Peak
 Existing Year - No Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	190	60	170	350	120	50	310	190	130	440	190
Future Volume (veh/h)	140	190	60	170	350	120	50	310	190	130	440	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	165	224	71	193	398	136	61	378	232	162	550	238
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.82	0.82	0.82	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	464	147	436	657	683	158	548	582	284	587	617
Arrive On Green	0.08	0.34	0.34	0.09	0.35	0.35	0.05	0.28	0.28	0.08	0.31	0.31
Sat Flow, veh/h	1781	1361	431	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	165	0	295	193	398	136	61	378	232	162	550	238
Grp Sat Flow(s),veh/h/ln	1781	0	1793	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	7.9	0.0	17.1	9.2	23.2	7.1	3.1	22.9	14.3	8.4	37.7	14.2
Cycle Q Clear(g_c), s	7.9	0.0	17.1	9.2	23.2	7.1	3.1	22.9	14.3	8.4	37.7	14.2
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	0	611	436	657	683	158	548	582	284	587	617
V/C Ratio(X)	0.48	0.00	0.48	0.44	0.61	0.20	0.39	0.69	0.40	0.57	0.94	0.39
Avail Cap(c_a), veh/h	410	0	611	486	657	683	276	663	676	345	637	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	34.3	25.7	35.3	23.4	35.4	42.3	31.0	32.1	44.0	28.9
Incr Delay (d2), s/veh	0.8	0.0	2.7	0.5	4.1	0.7	1.1	2.0	0.3	1.3	20.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	7.9	3.9	11.2	2.8	1.4	11.2	5.5	3.7	20.5	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	0.0	37.1	26.2	39.4	24.1	36.6	44.3	31.3	33.4	64.3	29.2
LnGrp LOS	C	A	D	C	D	C	D	D	C	C	E	C
Approach Vol, veh/h		460			727			671			950	
Approach Delay, s/veh		33.7			33.1			39.1			50.3	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.3	52.0	13.3	48.5	17.0	53.3	17.5	44.2				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	11.2	19.1	5.1	39.7	9.9	25.2	10.4	24.9				
Green Ext Time (p_c), s	0.1	1.4	0.0	1.7	0.1	2.2	0.1	2.3				
Intersection Summary												
HCM 6th Ctrl Delay			40.4									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

2_2021 School Peak
Existing Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	80	380	110	120	320	160	50	110	100	140	190	190
Future Volume (veh/h)	80	380	110	120	320	160	50	110	100	140	190	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	422	122	122	327	163	61	134	122	175	238	238
Peak Hour Factor	0.90	0.90	0.90	0.98	0.98	0.98	0.82	0.82	0.82	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	272	489	141	243	421	210	184	227	207	375	254	254
Arrive On Green	0.06	0.35	0.35	0.06	0.36	0.36	0.05	0.25	0.25	0.09	0.30	0.30
Sat Flow, veh/h	1781	1395	403	1781	1178	587	1781	902	821	1781	858	858
Grp Volume(v), veh/h	89	0	544	122	0	490	61	0	256	175	0	476
Grp Sat Flow(s),veh/h/ln	1781	0	1798	1781	0	1765	1781	0	1723	1781	0	1716
Q Serve(g_s), s	3.1	0.0	28.0	4.3	0.0	24.5	2.5	0.0	12.9	7.0	0.0	26.8
Cycle Q Clear(g_c), s	3.1	0.0	28.0	4.3	0.0	24.5	2.5	0.0	12.9	7.0	0.0	26.8
Prop In Lane	1.00		0.22	1.00		0.33	1.00		0.48	1.00		0.50
Lane Grp Cap(c), veh/h	272	0	630	243	0	631	184	0	434	375	0	507
V/C Ratio(X)	0.33	0.00	0.86	0.50	0.00	0.78	0.33	0.00	0.59	0.47	0.00	0.94
Avail Cap(c_a), veh/h	532	0	1088	491	0	1068	455	0	434	568	0	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	30.0	22.9	0.0	28.3	27.8	0.0	32.6	24.4	0.0	34.0
Incr Delay (d2), s/veh	0.5	0.0	7.5	1.2	0.0	4.4	0.8	0.0	5.8	0.7	0.0	27.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	12.9	1.8	0.0	10.6	1.1	0.0	6.0	2.9	0.0	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.1	0.0	37.5	24.1	0.0	32.7	28.6	0.0	38.4	25.1	0.0	61.2
LnGrp LOS	C	A	D	C	A	C	C	A	D	C	A	E
Approach Vol, veh/h		633			612			317			651	
Approach Delay, s/veh		35.3			31.0			36.5			51.5	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	40.7	10.9	35.3	11.5	41.5	15.2	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	6.3	30.0	4.5	28.8	5.1	26.5	9.0	14.9				
Green Ext Time (p_c), s	0.2	4.8	0.1	0.0	0.1	4.3	0.2	0.8				

Intersection Summary

HCM 6th Ctrl Delay			39.1									
HCM 6th LOS			D									

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	10	10	560	740	10
Future Vol, veh/h	10	10	10	560	740	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	12	651	851	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1532	857	862	0	-	0
Stage 1	857	-	-	-	-	-
Stage 2	675	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	128	357	780	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	357	780	-	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	506	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.3	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	780	-	186	-	-
HCM Lane V/C Ratio	0.015	-	0.134	-	-
HCM Control Delay (s)	9.7	-	27.3	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection										
Int Delay, s/veh	9.1									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	10	10	120	450	10	10	600	0	10	140
Future Vol, veh/h	10	10	120	450	10	10	600	0	10	140
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	87	87	87	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	138	517	11	13	750	0	13	175

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1669	523	750	0
Stage 1	799	-	-	-
Stage 2	870	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	76	554	859	-
Stage 1	379	-	-	-
Stage 2	346	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	34	554	859	-
Mov Cap-2 Maneuver	34	-	-	-
Stage 1	318	-	-	-
Stage 2	190	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	93.5	2.1	0.1	50.9
HCM LOS	F			F

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	859	-	-	64	265	1039
HCM Lane V/C Ratio	0.161	-	-	0.391	0.755	0.012
HCM Control Delay (s)	10	-	-	93.5	50.9	8.5
HCM Lane LOS	A	-	-	F	F	A
HCM 95th %tile Q(veh)	0.6	-	-	1.5	5.5	0

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	30	10	0	0	0	10	0	470	0	10	610	30
Future Vol, veh/h	30	10	0	0	0	10	0	470	0	10	610	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	82	82	82	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	13	0	0	0	13	0	573	0	13	763	38

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1388	1381	782	1388	1400	573	801	0	0	573	0	0
Stage 1	808	808	-	573	573	-	-	-	-	-	-	-
Stage 2	580	573	-	815	827	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	120	144	394	120	140	519	822	-	-	1000	-	-
Stage 1	375	394	-	505	504	-	-	-	-	-	-	-
Stage 2	500	504	-	371	386	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	116	142	394	111	138	519	822	-	-	1000	-	-
Mov Cap-2 Maneuver	116	142	-	111	138	-	-	-	-	-	-	-
Stage 1	375	389	-	505	504	-	-	-	-	-	-	-
Stage 2	488	504	-	354	381	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	53.6		12.1		0		0.1	
HCM LOS	F		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	822	-	-	122	519	1000	-
HCM Lane V/C Ratio	-	-	-	0.41	0.024	0.013	-
HCM Control Delay (s)	0	-	-	53.6	12.1	8.6	-
HCM Lane LOS	A	-	-	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.1	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	20	480	30	20	620
Future Vol, veh/h	30	20	480	30	20	620
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	24	545	34	25	775

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1387	562	0	0	579
Stage 1	562	-	-	-	-
Stage 2	825	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	158	526	-	-	995
Stage 1	571	-	-	-	-
Stage 2	430	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	151	526	-	-	995
Mov Cap-2 Maneuver	151	-	-	-	-
Stage 1	571	-	-	-	-
Stage 2	411	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.9	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	211	995
HCM Lane V/C Ratio	-	-	0.289	0.025
HCM Control Delay (s)	-	-	28.9	8.7
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	20	90	10	490	550	10
Future Vol, veh/h	20	90	10	490	550	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	94	94	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	113	11	521	598	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1147	604	609	0	-	0
Stage 1	604	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	220	498	970	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	216	498	970	-	-	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	970	-	402	-	-
HCM Lane V/C Ratio	0.011	-	0.342	-	-
HCM Control Delay (s)	8.8	0	18.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	30	0	40	470	560	20
Future Vol, veh/h	30	0	40	470	560	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	96	96	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	42	490	659	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1245	671	683	0	-	0
Stage 1	671	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	192	456	910	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	563	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	456	910	-	-	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.2	0.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	910	-	180	-	-
HCM Lane V/C Ratio	0.046	-	0.208	-	-
HCM Control Delay (s)	9.1	0	30.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	490	570	10
Future Vol, veh/h	10	10	10	490	570	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	87	87	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	11	563	687	12

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1278	693	699	0	-	0
Stage 1	693	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	183	443	898	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	443	898	-	-	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	20.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	898	-	256	-	-
HCM Lane V/C Ratio	0.013	-	0.098	-	-
HCM Control Delay (s)	9.1	0	20.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection												
Int Delay, s/veh	1.4											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	10	10	10	10	480	10	10	560	10
Future Vol, veh/h	10	0	10	10	10	10	10	480	10	10	560	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	87	87	87	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	13	13	13	11	552	11	12	667	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1290	1282	673	1284	1283	558	679	0	0	563	0	0
Stage 1	697	697	-	580	580	-	-	-	-	-	-	-
Stage 2	593	585	-	704	703	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	165	455	142	165	529	913	-	-	1008	-	-
Stage 1	431	443	-	500	500	-	-	-	-	-	-	-
Stage 2	492	498	-	428	440	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	125	159	455	134	159	529	913	-	-	1008	-	-
Mov Cap-2 Maneuver	125	159	-	134	159	-	-	-	-	-	-	-
Stage 1	423	435	-	491	491	-	-	-	-	-	-	-
Stage 2	460	489	-	408	432	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	26	28.2	0.2	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	913	-	-	192	196	1008	-
HCM Lane V/C Ratio	0.013	-	-	0.195	0.128	0.012	-
HCM Control Delay (s)	9	0	-	28.2	26	8.6	-
HCM Lane LOS	A	A	-	D	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	20	490	10	10	570
Future Vol, veh/h	10	20	490	10	10	570
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	25	557	11	11	626

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1211	563	0	0	568	0
Stage 1	563	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	201	526	-	-	1004	-
Stage 1	570	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	198	526	-	-	1004	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	16.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	339	1004
HCM Lane V/C Ratio	-	-	0.111	0.011
HCM Control Delay (s)	-	-	16.9	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	20	10	10	500	570	30
Future Vol, veh/h	20	10	10	500	570	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	11	549	633	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1221	650	666	0	-	0
Stage 1	650	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	199	469	923	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	196	469	923	-	-	-
Mov Cap-2 Maneuver	196	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	565	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.5	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	923	-	243	-	-
HCM Lane V/C Ratio	0.012	-	0.154	-	-
HCM Control Delay (s)	8.9	0	22.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	500	10	0	620	10	0
Future Vol, veh/h	500	10	0	620	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	556	11	0	705	13	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	567	0	1267
Stage 1	-	-	-	-	562
Stage 2	-	-	-	-	705
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1005	-	186
Stage 1	-	-	-	-	571
Stage 2	-	-	-	-	490
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1005	-	186
Mov Cap-2 Maneuver	-	-	-	-	186
Stage 1	-	-	-	-	571
Stage 2	-	-	-	-	490

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	186	-	-	1005	-
HCM Lane V/C Ratio	0.067	-	-	-	-
HCM Control Delay (s)	25.7	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	0	500	620	10	10	10
Future Vol, veh/h	0	500	620	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	556	705	11	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	716	0	-	0	1267 711
Stage 1	-	-	-	-	711 -
Stage 2	-	-	-	-	556 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	885	-	-	-	186 433
Stage 1	-	-	-	-	487 -
Stage 2	-	-	-	-	574 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	885	-	-	-	186 433
Mov Cap-2 Maneuver	-	-	-	-	186 -
Stage 1	-	-	-	-	487 -
Stage 2	-	-	-	-	574 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	885	-	-	-	260
HCM Lane V/C Ratio	-	-	-	-	0.096
HCM Control Delay (s)	0	-	-	-	20.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	500	10	20	610	10	50
Future Vol, veh/h	500	10	20	610	10	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	91	91	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	568	11	22	670	13	63

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	579	0	1288
Stage 1	-	-	-	-	574
Stage 2	-	-	-	-	714
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	995	-	181
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	485
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	995	-	175
Mov Cap-2 Maneuver	-	-	-	-	175
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	468

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	995	-
HCM Lane V/C Ratio	0.192	-	-	0.022	-
HCM Control Delay (s)	16.4	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	500	610	0	0	10
Future Vol, veh/h	0	500	610	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	91	91	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	568	670	0	0	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	670	0	-	0	1238 670
Stage 1	-	-	-	-	670 -
Stage 2	-	-	-	-	568 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	920	-	-	-	194 457
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	567 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	920	-	-	-	194 457
Mov Cap-2 Maneuver	-	-	-	-	194 -
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	567 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	920	-	-	-	457
HCM Lane V/C Ratio	-	-	-	-	0.027
HCM Control Delay (s)	0	-	-	-	13.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	550	620	10	10	0
Future Vol, veh/h	0	550	620	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	647	689	11	13	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	700	0	-	0	1342	695
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	647	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	897	-	-	-	168	442
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	897	-	-	-	168	442
Mov Cap-2 Maneuver	-	-	-	-	168	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	521	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	28.1			
HCM LOS	D					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	897	-	-	-	168	
HCM Lane V/C Ratio	-	-	-	-	0.074	
HCM Control Delay (s)	0	-	-	-	28.1	
HCM Lane LOS	A	-	-	-	D	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	0	10	620	10	10
Future Vol, veh/h	550	0	10	620	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	647	0	11	689	13	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	647	0	1358 647
Stage 1	-	-	-	-	647 -
Stage 2	-	-	-	-	711 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	939	-	164 471
Stage 1	-	-	-	-	521 -
Stage 2	-	-	-	-	487 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	939	-	161 471
Mov Cap-2 Maneuver	-	-	-	-	161 -
Stage 1	-	-	-	-	521 -
Stage 2	-	-	-	-	478 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	240	-	-	939	-
HCM Lane V/C Ratio	0.104	-	-	0.012	-
HCM Control Delay (s)	21.7	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	550	10	10	620	0	10	0	10	10	0	10
Future Vol, veh/h	10	550	10	10	620	0	10	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	90	90	90	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	604	11	11	689	0	13	0	13	13	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	689	0	0	615	0	0	1350	1343	610	1349	1348	689
Stage 1	-	-	-	-	-	-	632	632	-	711	711	-
Stage 2	-	-	-	-	-	-	718	711	-	638	637	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	905	-	-	965	-	-	128	152	494	128	151	446
Stage 1	-	-	-	-	-	-	468	474	-	424	436	-
Stage 2	-	-	-	-	-	-	420	436	-	465	471	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	905	-	-	965	-	-	121	146	494	121	145	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	146	-	121	145	-
Stage 1	-	-	-	-	-	-	459	465	-	416	428	-
Stage 2	-	-	-	-	-	-	401	428	-	445	462	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			26.3			26.8		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	194	905	-	-	965	-	-	190
HCM Lane V/C Ratio	0.129	0.012	-	-	0.012	-	-	0.132
HCM Control Delay (s)	26.3	9	0	-	8.8	0	-	26.8
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T			T
Traffic Vol, veh/h	10	10	380	20	10	470
Future Vol, veh/h	10	10	380	20	10	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	475	25	13	588

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1102	488	0	0	500
Stage 1	488	-	-	-	-
Stage 2	614	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	234	580	-	-	1064
Stage 1	617	-	-	-	-
Stage 2	540	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	230	580	-	-	1064
Mov Cap-2 Maneuver	230	-	-	-	-
Stage 1	617	-	-	-	-
Stage 2	530	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.8	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	329	1064
HCM Lane V/C Ratio	-	-	0.076	0.012
HCM Control Delay (s)	-	-	16.8	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	10	0	30	20	10	40	60	290	40	30	430	60
Future Vol, veh/h	10	0	30	20	10	40	60	290	40	30	430	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	38	25	13	50	75	363	50	38	538	75

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1222	1215	576	1184	1202	363	613	0	0	413	0	0
Stage 1	652	652	-	513	513	-	-	-	-	-	-	-
Stage 2	570	563	-	671	689	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	156	181	517	166	185	682	966	-	-	1146	-	-
Stage 1	457	464	-	544	536	-	-	-	-	-	-	-
Stage 2	506	509	-	446	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	121	154	517	137	158	682	966	-	-	1146	-	-
Mov Cap-2 Maneuver	121	154	-	137	158	-	-	-	-	-	-	-
Stage 1	411	440	-	489	482	-	-	-	-	-	-	-
Stage 2	411	458	-	393	423	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.4		25.6		1.4		0.5	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	966	-	-	284	261	1146	-
HCM Lane V/C Ratio	0.078	-	-	0.176	0.335	0.033	-
HCM Control Delay (s)	9	0	-	20.4	25.6	8.2	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1.4	0.1	-

Intersection												
Int Delay, s/veh	11											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	70	30	90	30	10	20	10	290	40	80	400	20
Future Vol, veh/h	70	30	90	30	10	20	10	290	40	80	400	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	88	88	88	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	38	113	34	11	23	11	322	44	100	500	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1096	1101	513	1154	1091	344	525	0	0	366	0	0
Stage 1	713	713	-	366	366	-	-	-	-	-	-	-
Stage 2	383	388	-	788	725	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	191	212	561	174	215	699	1042	-	-	1193	-	-
Stage 1	423	435	-	653	623	-	-	-	-	-	-	-
Stage 2	640	609	-	384	430	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	159	184	561	106	187	699	1042	-	-	1193	-	-
Mov Cap-2 Maneuver	159	184	-	106	187	-	-	-	-	-	-	-
Stage 1	418	383	-	645	615	-	-	-	-	-	-	-
Stage 2	600	601	-	244	379	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	44.7		41.7		0.2		1.3	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1042	-	-	166	561	164	1193	-	-
HCM Lane V/C Ratio	0.011	-	-	0.753	0.201	0.416	0.084	-	-
HCM Control Delay (s)	8.5	0	-	73.3	13	41.7	8.3	0	-
HCM Lane LOS	A	A	-	F	B	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.7	0.7	1.8	0.3	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	50	80	30	350	420	10
Future Vol, veh/h	50	80	30	350	420	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	100	35	407	525	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1009	532	538	0	-	0
Stage 1	532	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	266	547	1030	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	547	1030	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.4	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1030	-	379	-	-
HCM Lane V/C Ratio	0.034	-	0.429	-	-
HCM Control Delay (s)	8.6	0	21.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.1	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	330	70	80	420
Future Vol, veh/h	10	10	330	70	80	420
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	413	88	100	525

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1182	457	0	0	501
Stage 1	457	-	-	-	-
Stage 2	725	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	210	604	-	-	1063
Stage 1	638	-	-	-	-
Stage 2	479	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	182	604	-	-	1063
Mov Cap-2 Maneuver	182	-	-	-	-
Stage 1	638	-	-	-	-
Stage 2	415	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	280	1063
HCM Lane V/C Ratio	-	-	0.089	0.094
HCM Control Delay (s)	-	-	19.1	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3

Intersection						
Int Delay, s/veh	8.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	120	120	340	0	0	380
Future Vol, veh/h	120	120	340	0	0	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	150	425	0	0	475

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	900	425	0	0	425	0
Stage 1	425	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	309	629	-	-	1134	-
Stage 1	659	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	309	629	-	-	1134	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	414	1134
HCM Lane V/C Ratio	-	-	0.725	-
HCM Control Delay (s)	-	-	33.4	0
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	5.7	0

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	30	10	80	20	430	10	20	340	20
Future Vol, veh/h	10	0	10	30	10	80	20	430	10	20	340	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	38	13	100	25	538	13	25	425	25
























Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1139	1089	438	1089	1095	545	450	0	0	551	0	0
Stage 1	488	488	-	595	595	-	-	-	-	-	-	-
Stage 2	651	601	-	494	500	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	178	215	619	193	214	538	1110	-	-	1019	-	-
Stage 1	561	550	-	491	492	-	-	-	-	-	-	-
Stage 2	457	489	-	557	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	131	201	619	180	200	538	1110	-	-	1019	-	-
Mov Cap-2 Maneuver	131	201	-	180	200	-	-	-	-	-	-	-
Stage 1	543	532	-	475	476	-	-	-	-	-	-	-
Stage 2	351	473	-	528	525	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	23.8		24.9		0.4		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	216	328	1019	-
HCM Lane V/C Ratio	0.023	-	-	0.116	0.457	0.025	-
HCM Control Delay (s)	8.3	0	-	23.8	24.9	8.6	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.3	0.1	-

HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

3_2021 PM Peak
 Existing Year - No Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	300	80	180	270	110	90	340	170	120	430	190
Future Volume (veh/h)	140	300	80	180	270	110	90	340	170	120	430	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	161	345	92	220	329	134	100	378	189	128	457	202
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	508	136	369	707	707	183	502	558	245	506	545
Arrive On Green	0.07	0.36	0.36	0.09	0.38	0.38	0.06	0.26	0.26	0.07	0.27	0.27
Sat Flow, veh/h	1781	1423	379	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	161	0	437	220	329	134	100	378	189	128	457	202
Grp Sat Flow(s),veh/h/ln	1781	0	1802	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	7.1	0.0	25.9	9.7	16.7	6.4	5.1	22.5	11.0	6.6	29.7	12.1
Cycle Q Clear(g_c), s	7.1	0.0	25.9	9.7	16.7	6.4	5.1	22.5	11.0	6.6	29.7	12.1
Prop In Lane	1.00		0.21	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	416	0	644	369	707	707	183	502	558	245	506	545
V/C Ratio(X)	0.39	0.00	0.68	0.60	0.47	0.19	0.55	0.75	0.34	0.52	0.90	0.37
Avail Cap(c_a), veh/h	497	0	644	414	707	707	296	695	716	336	668	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	34.3	25.1	29.5	21.1	35.0	43.0	30.0	33.2	44.4	31.1
Incr Delay (d2), s/veh	0.4	0.0	5.7	1.5	2.2	0.6	1.9	2.5	0.3	1.3	12.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	12.2	4.2	7.9	2.5	2.3	11.1	4.2	2.9	15.3	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.8	0.0	40.0	26.6	31.7	21.7	36.9	45.5	30.3	34.5	56.5	31.4
LnGrp LOS	C	A	D	C	C	C	D	D	C	C	E	C
Approach Vol, veh/h		598			683			667			787	
Approach Delay, s/veh		35.7			28.1			39.9			46.5	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.9	52.0	14.0	41.1	16.2	54.6	15.6	39.5				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	11.7	27.9	7.1	31.7	9.1	18.7	8.6	24.5				
Green Ext Time (p_c), s	0.1	2.0	0.1	2.4	0.1	1.9	0.1	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			37.9									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

3_2021 PM Peak
Existing Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	120	330	150	160	420	170	40	110	120	110	220	100
Future Volume (veh/h)	120	330	150	160	420	170	40	110	120	110	220	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	402	183	165	433	175	43	117	128	131	262	119
Peak Hour Factor	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	464	211	267	491	199	215	195	214	327	331	150
Arrive On Green	0.07	0.38	0.38	0.08	0.39	0.39	0.04	0.24	0.24	0.07	0.27	0.27
Sat Flow, veh/h	1781	1217	554	1781	1266	512	1781	816	893	1781	1218	553
Grp Volume(v), veh/h	146	0	585	165	0	608	43	0	245	131	0	381
Grp Sat Flow(s),veh/h/ln	1781	0	1771	1781	0	1778	1781	0	1710	1781	0	1771
Q Serve(g_s), s	5.1	0.0	31.9	5.8	0.0	33.2	1.9	0.0	13.3	5.7	0.0	20.8
Cycle Q Clear(g_c), s	5.1	0.0	31.9	5.8	0.0	33.2	1.9	0.0	13.3	5.7	0.0	20.8
Prop In Lane	1.00		0.31	1.00		0.29	1.00		0.52	1.00		0.31
Lane Grp Cap(c), veh/h	249	0	675	267	0	690	215	0	409	327	0	482
V/C Ratio(X)	0.59	0.00	0.87	0.62	0.00	0.88	0.20	0.00	0.60	0.40	0.00	0.79
Avail Cap(c_a), veh/h	467	0	1017	473	0	1021	483	0	409	537	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	29.9	23.0	0.0	29.7	29.2	0.0	35.3	27.6	0.0	35.3
Incr Delay (d2), s/veh	1.6	0.0	8.3	1.7	0.0	9.3	0.3	0.0	6.3	0.6	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	14.5	2.4	0.0	15.3	0.8	0.0	6.1	2.4	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.0	0.0	38.2	24.8	0.0	39.0	29.6	0.0	41.6	28.1	0.0	47.7
LnGrp LOS	C	A	D	C	A	D	C	A	D	C	A	D
Approach Vol, veh/h		731			773			288			512	
Approach Delay, s/veh		35.5			36.0			39.8			42.7	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	45.8	10.3	34.4	13.2	46.5	13.7	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	7.8	33.9	3.9	22.8	7.1	35.2	7.7	15.3				
Green Ext Time (p_c), s	0.2	5.1	0.0	0.4	0.2	5.3	0.2	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				37.8								
HCM 6th LOS				D								

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	30	10	500	670	10
Future Vol, veh/h	10	30	10	500	670	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	38	11	562	713	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1303	719	724	0	-	0
Stage 1	719	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	177	428	879	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	175	428	879	-	-	-
Mov Cap-2 Maneuver	175	-	-	-	-	-
Stage 1	477	-	-	-	-	-
Stage 2	557	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	879	-	314	-	-
HCM Lane V/C Ratio	0.013	-	0.159	-	-
HCM Control Delay (s)	9.1	-	18.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection										
Int Delay, s/veh	2.7									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	10	20	50	460	10	10	620	0	10	50
Future Vol, veh/h	10	20	50	460	10	10	620	0	10	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	88	88	88	92	92	92	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	25	57	523	11	11	674	0	13	63

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1377	529	674	0
Stage 1	643	-	-	-
Stage 2	734	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	122	550	917	-
Stage 1	462	-	-	-
Stage 2	412	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	93	550	917	-
Mov Cap-2 Maneuver	93	-	-	-
Stage 1	433	-	-	-
Stage 2	342	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	26.1	0.9	0.1	25.6
HCM LOS	D			D

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	917	-	-	208	261	1034
HCM Lane V/C Ratio	0.062	-	-	0.18	0.335	0.011
HCM Control Delay (s)	9.2	-	-	26.1	25.6	8.5
HCM Lane LOS	A	-	-	D	D	A
HCM 95th %tile Q(veh)	0.2	-	-	0.6	1.4	0

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	10	0	10	10	10	0	480	10	10	620	10
Future Vol, veh/h	10	10	0	10	10	10	0	480	10	10	620	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	84	84	84	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	0	13	13	13	0	571	12	11	674	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1292	1285	680	1285	1284	577	685	0	0	583	0	0
Stage 1	702	702	-	577	577	-	-	-	-	-	-	-
Stage 2	590	583	-	708	707	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	140	165	451	142	165	516	908	-	-	991	-	-
Stage 1	429	440	-	502	502	-	-	-	-	-	-	-
Stage 2	494	499	-	426	438	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	128	163	451	132	163	516	908	-	-	991	-	-
Mov Cap-2 Maneuver	128	163	-	132	163	-	-	-	-	-	-	-
Stage 1	429	435	-	502	502	-	-	-	-	-	-	-
Stage 2	470	499	-	409	433	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	35.4		28.2		0		0.1	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	908	-	-	143	192	991	-	-
HCM Lane V/C Ratio	-	-	-	0.175	0.195	0.011	-	-
HCM Control Delay (s)	0	-	-	35.4	28.2	8.7	-	-
HCM Lane LOS	A	-	-	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.7	0	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	40	480	20	10	610
Future Vol, veh/h	30	40	480	20	10	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	87	87	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	50	552	23	11	663

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1249	564	0	0	575
Stage 1	564	-	-	-	-
Stage 2	685	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	191	525	-	-	998
Stage 1	569	-	-	-	-
Stage 2	500	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	188	525	-	-	998
Mov Cap-2 Maneuver	188	-	-	-	-
Stage 1	569	-	-	-	-
Stage 2	492	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	998
HCM Lane V/C Ratio	-	-	0.295	0.011
HCM Control Delay (s)	-	-	22.1	8.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.2	0

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	10	10	0	520	610	0
Future Vol, veh/h	10	10	0	520	610	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	93	93	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	0	559	649	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1208	649	649	0	-	0
Stage 1	649	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	202	470	937	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	470	937	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	937	-	283	-	-
HCM Lane V/C Ratio	-	-	0.088	-	-
HCM Control Delay (s)	0	-	19	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	520	600	10
Future Vol, veh/h	10	10	10	520	600	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	13	650	690	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1372	696	701	0	-	0
Stage 1	696	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	161	442	896	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	442	896	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.4	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	896	-	232	-	-
HCM Lane V/C Ratio	0.014	-	0.108	-	-
HCM Control Delay (s)	9.1	0	22.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	20	10	20	510	600	30
Future Vol, veh/h	20	10	20	510	600	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	80	80	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	12	25	638	659	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1364	676	692	0	-	0
Stage 1	676	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	163	453	903	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	156	453	903	-	-	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	26.8	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	903	-	200	-	-
HCM Lane V/C Ratio	0.028	-	0.174	-	-
HCM Control Delay (s)	9.1	0	26.8	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection												
Int Delay, s/veh	1.1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	10	0	10	10	510	10	10	610	10
Future Vol, veh/h	10	0	10	10	0	10	10	510	10	10	610	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	13	0	13	13	638	13	11	678	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1383	1383	684	1383	1382	645	689	0	0	651	0	0
Stage 1	706	706	-	671	671	-	-	-	-	-	-	-
Stage 2	677	677	-	712	711	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	121	144	449	121	144	472	905	-	-	935	-	-
Stage 1	427	439	-	446	455	-	-	-	-	-	-	-
Stage 2	443	452	-	423	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	114	138	449	114	138	472	905	-	-	935	-	-
Mov Cap-2 Maneuver	114	138	-	114	138	-	-	-	-	-	-	-
Stage 1	417	431	-	436	445	-	-	-	-	-	-	-
Stage 2	421	442	-	403	428	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW	
HCM Control Delay, s	27.9		27.6		0.2		0.1	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	905	-	-	184	182	935	-
HCM Lane V/C Ratio	0.014	-	-	0.136	0.137	0.012	-
HCM Control Delay (s)	9	0	-	27.6	27.9	8.9	-
HCM Lane LOS	A	A	-	D	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.5	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	10	520	10	10	620
Future Vol, veh/h	10	10	520	10	10	620
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	650	13	12	729

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1410	657	0	0	663	0
Stage 1	657	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	153	465	-	-	926	-
Stage 1	516	-	-	-	-	-
Stage 2	465	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	150	465	-	-	926	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	455	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.8	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	227	926
HCM Lane V/C Ratio	-	-	0.11	0.013
HCM Control Delay (s)	-	-	22.8	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	20	10	10	520	620	40
Future Vol, veh/h	20	10	10	520	620	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	13	650	705	45

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1404	728	750	0	-	0
Stage 1	728	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	154	423	859	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	150	423	859	-	-	-
Mov Cap-2 Maneuver	150	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.4	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	859	-	191	-	-
HCM Lane V/C Ratio	0.015	-	0.196	-	-
HCM Control Delay (s)	9.3	0	28.4	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	580	0	10	550	0	10
Future Vol, veh/h	580	0	10	550	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	85	85	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	667	0	12	647	0	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	667	0	1338
Stage 1	-	-	-	-	667
Stage 2	-	-	-	-	671
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	923	-	169
Stage 1	-	-	-	-	510
Stage 2	-	-	-	-	508
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	923	-	166
Mov Cap-2 Maneuver	-	-	-	-	166
Stage 1	-	-	-	-	510
Stage 2	-	-	-	-	498

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	459	-	-	923	-
HCM Lane V/C Ratio	0.027	-	-	0.013	-
HCM Control Delay (s)	13.1	-	-	9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	580	550	0	10	10
Future Vol, veh/h	10	580	550	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	85	85	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	667	647	0	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	647	0	-	0	1336 647
Stage 1	-	-	-	-	647 -
Stage 2	-	-	-	-	689 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	939	-	-	-	169 471
Stage 1	-	-	-	-	521 -
Stage 2	-	-	-	-	498 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	939	-	-	-	166 471
Mov Cap-2 Maneuver	-	-	-	-	166 -
Stage 1	-	-	-	-	511 -
Stage 2	-	-	-	-	498 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	21.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	939	-	-	-	245
HCM Lane V/C Ratio	0.012	-	-	-	0.102
HCM Control Delay (s)	8.9	0	-	-	21.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	10	10	540	10	10
Future Vol, veh/h	590	10	10	540	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	83	83	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	738	13	12	651	12	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	751	0	1420
Stage 1	-	-	-	-	745
Stage 2	-	-	-	-	675
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	858	-	150
Stage 1	-	-	-	-	469
Stage 2	-	-	-	-	506
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	858	-	147
Mov Cap-2 Maneuver	-	-	-	-	147
Stage 1	-	-	-	-	469
Stage 2	-	-	-	-	495

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	217	-	-	858	-
HCM Lane V/C Ratio	0.114	-	-	0.014	-
HCM Control Delay (s)	23.7	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	590	540	0	10	10
Future Vol, veh/h	0	590	540	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	83	83	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	738	651	0	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	651	0	-	0	1389 651
Stage 1	-	-	-	-	651 -
Stage 2	-	-	-	-	738 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	935	-	-	-	157 469
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	473 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	935	-	-	-	157 469
Mov Cap-2 Maneuver	-	-	-	-	157 -
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	473 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	935	-	-	-	235
HCM Lane V/C Ratio	-	-	-	-	0.106
HCM Control Delay (s)	0	-	-	-	22.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	590	540	0	10	0
Future Vol, veh/h	10	590	540	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	82	82	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	738	659	0	13	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	659	0	0	1423	659
Stage 1	-	-	-	659	-
Stage 2	-	-	-	764	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	929	-	-	150	464
Stage 1	-	-	-	515	-
Stage 2	-	-	-	460	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	929	-	-	146	464
Mov Cap-2 Maneuver	-	-	-	146	-
Stage 1	-	-	-	503	-
Stage 2	-	-	-	460	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	32
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	929	-	-	-	146
HCM Lane V/C Ratio	0.013	-	-	-	0.086
HCM Control Delay (s)	8.9	0	-	-	32
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	10	10	540	10	10
Future Vol, veh/h	590	10	10	540	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	82	82	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	738	13	12	659	13	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	751	0	1428 745
Stage 1	-	-	-	-	745 -
Stage 2	-	-	-	-	683 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	858	-	149 414
Stage 1	-	-	-	-	469 -
Stage 2	-	-	-	-	502 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	858	-	146 414
Mov Cap-2 Maneuver	-	-	-	-	146 -
Stage 1	-	-	-	-	469 -
Stage 2	-	-	-	-	491 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	23.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	216	-	-	858	-
HCM Lane V/C Ratio	0.116	-	-	0.014	-
HCM Control Delay (s)	23.8	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	590	10	10	540	10	0	0	10	0	0	10
Future Vol, veh/h	10	590	10	10	540	10	0	0	10	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	720	12	12	659	12	0	0	13	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	671	0	0	732	0	0	1446	1445	726	1446	1445	665
Stage 1	-	-	-	-	-	-	750	750	-	689	689	-
Stage 2	-	-	-	-	-	-	696	695	-	757	756	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	919	-	-	873	-	-	109	132	425	109	132	460
Stage 1	-	-	-	-	-	-	403	419	-	436	446	-
Stage 2	-	-	-	-	-	-	432	444	-	400	416	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	919	-	-	873	-	-	102	126	425	102	126	460
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	126	-	102	126	-
Stage 1	-	-	-	-	-	-	394	410	-	426	436	-
Stage 2	-	-	-	-	-	-	411	434	-	380	407	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			13.7			13		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	425	919	-	-	873	-	-	460
HCM Lane V/C Ratio	0.029	0.013	-	-	0.014	-	-	0.027
HCM Control Delay (s)	13.7	9	0	-	9.2	0	-	13
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	383	20	10	415
Future Vol, veh/h	20	10	383	20	10	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	435	23	12	483

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	954	447	0	0	458	0
Stage 1	447	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	287	612	-	-	1103	-
Stage 1	644	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	283	612	-	-	1103	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	596	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	345	1103
HCM Lane V/C Ratio	-	-	0.109	0.011
HCM Control Delay (s)	-	-	16.7	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	10	0	10	60	10	20	20	303	70	40	355	10
Future Vol, veh/h	10	0	10	60	10	20	20	303	70	40	355	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	75	13	25	24	356	82	44	394	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	952	974	400	898	897	356	405	0	0	438	0	0
Stage 1	488	488	-	404	404	-	-	-	-	-	-	-
Stage 2	464	486	-	494	493	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	239	252	650	260	279	688	1154	-	-	1122	-	-
Stage 1	561	550	-	623	599	-	-	-	-	-	-	-
Stage 2	578	551	-	557	547	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	209	232	650	240	257	688	1154	-	-	1122	-	-
Mov Cap-2 Maneuver	209	232	-	240	257	-	-	-	-	-	-	-
Stage 1	545	522	-	606	582	-	-	-	-	-	-	-
Stage 2	530	536	-	518	519	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.4		25.9		0.4		0.8	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1154	-	-	316	283	1122	-	-
HCM Lane V/C Ratio	0.02	-	-	0.079	0.398	0.04	-	-
HCM Control Delay (s)	8.2	0	-	17.4	25.9	8.3	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	1.8	0.1	-	-

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	30	10	20	30	10	30	40	253	40	20	355	30
Future Vol, veh/h	30	10	20	30	10	30	40	253	40	20	355	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	13	25	38	13	38	50	316	50	22	390	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	918	917	407	911	908	341	423	0	0	366	0	0
Stage 1	451	451	-	441	441	-	-	-	-	-	-	-
Stage 2	467	466	-	470	467	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	252	272	644	255	275	701	1136	-	-	1193	-	-
Stage 1	588	571	-	595	577	-	-	-	-	-	-	-
Stage 2	576	562	-	574	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	216	251	644	222	253	701	1136	-	-	1193	-	-
Mov Cap-2 Maneuver	216	251	-	222	253	-	-	-	-	-	-	-
Stage 1	555	557	-	562	545	-	-	-	-	-	-	-
Stage 2	503	531	-	526	549	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.7		20.3		1		0.4	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1136	-	-	224	644	322	1193	-	-
HCM Lane V/C Ratio	0.044	-	-	0.223	0.039	0.272	0.018	-	-
HCM Control Delay (s)	8.3	0	-	25.6	10.8	20.3	8.1	0	-
HCM Lane LOS	A	A	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.1	1.1	0.1	-	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	10	10	303	395	40
Future Vol, veh/h	30	10	10	303	395	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	11	340	416	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	799	437	458	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	620	1103	-	-	-
Stage 1	651	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	351	620	1103	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	643	-	-	-	-	-
Stage 2	704	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1103	-	394	-	-
HCM Lane V/C Ratio	0.01	-	0.127	-	-
HCM Control Delay (s)	8.3	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	10	0	273	60	60	425
Future Vol, veh/h	10	0	273	60	60	425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	83	83	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	329	72	64	452

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	945	365	0	0	401
Stage 1	365	-	-	-	-
Stage 2	580	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	291	680	-	-	1158
Stage 1	702	-	-	-	-
Stage 2	560	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	269	680	-	-	1158
Mov Cap-2 Maneuver	269	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	519	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	269	1158
HCM Lane V/C Ratio	-	-	0.046	0.055
HCM Control Delay (s)	-	-	19	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	50	263	10	0	455
Future Vol, veh/h	30	50	263	10	0	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	90	90	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	63	292	11	0	495

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	793	298	0	0	303
Stage 1	298	-	-	-	-
Stage 2	495	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	358	741	-	-	1258
Stage 1	753	-	-	-	-
Stage 2	613	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	358	741	-	-	1258
Mov Cap-2 Maneuver	358	-	-	-	-
Stage 1	753	-	-	-	-
Stage 2	613	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	1258
HCM Lane V/C Ratio	-	-	0.189	-
HCM Control Delay (s)	-	-	13.4	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	10	10	0	10	10	293	10	20	435	10
Future Vol, veh/h	10	10	10	10	0	10	10	293	10	20	435	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	13	13	0	13	12	345	12	22	473	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	905	904	479	911	903	351	484	0	0	357	0	0
Stage 1	523	523	-	375	375	-	-	-	-	-	-	-
Stage 2	382	381	-	536	528	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	257	277	587	255	277	692	1079	-	-	1202	-	-
Stage 1	537	530	-	646	617	-	-	-	-	-	-	-
Stage 2	640	613	-	529	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	245	266	587	234	266	692	1079	-	-	1202	-	-
Mov Cap-2 Maneuver	245	266	-	234	266	-	-	-	-	-	-	-
Stage 1	529	517	-	637	608	-	-	-	-	-	-	-
Stage 2	620	604	-	493	515	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18		16.1		0.3		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	314	350	1202	-
HCM Lane V/C Ratio	0.011	-	-	0.119	0.071	0.018	-
HCM Control Delay (s)	8.4	0	-	18	16.1	8.1	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.1	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	40	23	370	410	15
Future Vol, veh/h	27	40	23	370	410	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	43	25	402	446	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	906	454	462	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	307	606	1099	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	298	606	1099	-	-	-
Mov Cap-2 Maneuver	298	-	-	-	-	-
Stage 1	621	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	428	-	-
HCM Lane V/C Ratio	0.023	-	0.17	-	-
HCM Control Delay (s)	8.4	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	6	8	14	370	410	10
Future Vol, veh/h	6	8	14	370	410	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	9	15	402	446	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	884	452	457	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	608	1104	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	311	608	1104	-	-	-
Mov Cap-2 Maneuver	311	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1104	-	431	-	-
HCM Lane V/C Ratio	0.014	-	0.035	-	-
HCM Control Delay (s)	8.3	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



APPENDIX E TRAFFIC SIGNAL WARRANT DATA

STUDY AND ANALYSIS INFORMATION

Municipality:	City of Cuyahoga Falls	Traffic Volumes Obtained By:	PRIME AE Group
County:	Summit	Analysis Date:	9/21/2021
ODOT Engineering District:	4	Agency/ Company Name Performing Warrant Analysis:	PRIME AE Group

Analysis Information

Data Collection Date: 5/6/2021
Day of the Week: Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: State Rd.

Major Street Approach Direction: N-Bound
S-Bound

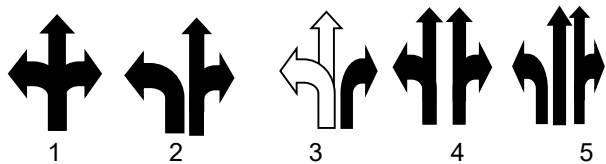
Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Audi North Dr. / Quick Rd. Ext

Minor Street Approach Configuration: 1 E-Bound
1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant		Notes and Comments:			
	Applicable?	Satisfied?				
Warrant 1, Eight-Hour Vehicular Volume	Yes	No				
Warrant 2, Four-Hour Vehicular Volume	Yes	No				
Warrant 3, Peak Hour	Yes	No	Signals installed under Warrant 3 should be traffic actuated. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">4:30 PM</td></tr> <tr><td style="text-align: center;">5:30 PM</td></tr> </table>	Peak Hour	4:30 PM	5:30 PM
Peak Hour						
4:30 PM						
5:30 PM						
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)						
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">3:15 PM</td></tr> <tr><td style="text-align: center;">4:15 PM</td></tr> </table>	Peak Hour	3:15 PM	4:15 PM
Peak Hour						
3:15 PM						
4:15 PM						
Warrant 5, School Crossing	No		N/A			
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.			
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9			
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.			

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The Modeling and Forecasting Section should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. Please fill inputs on PHB Score Sheet and submit to ODOT.

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
			100%		70%		100%		70%		80%		80%		56%		56%	
	Major	Minor	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
1:30 AM	0	0																
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5:30 AM	0	0																
5:45 AM	0	0																
6:00 AM	0	0																
6:15 AM	177	1																
6:30 AM	387	10			1									1				
6:45 AM	607	17	1						1		1		1				1	
7:00 AM	840	19						1										
7:15 AM	860	20																
7:30 AM	832	13			1										1			
7:45 AM	890	8	1						1		1		1				1	
8:00 AM	853	8						1										
8:15 AM	800	9																
8:30 AM	766	11			1										1			
8:45 AM	638	9	1						1		1		1				1	

2_Signal Warrant Spreadsheet_State & Audi North-Quick Rd Ext

9:00 AM	572	11																		
9:15 AM	541	10																		
9:30 AM	525	8			1								1							
9:45 AM	528	12	1					1		1						1		1		
10:00 AM	531	11																		
10:15 AM	553	12																		
10:30 AM	566	11			1										1					
10:45 AM	586	11	1					1		1							1			
11:00 AM	626	10										1								
11:15 AM	645	12																		
11:30 AM	693	13			1										1					
11:45 AM	663	12	1					1		1								1		
12:00 PM	682	17										1								
12:15 PM	705	18																		
12:30 PM	688	18			1										1					
12:45 PM	724	21	1					1		1								1		
1:00 PM	700	16										1								
1:15 PM	708	16																		
1:30 PM	706	17			1										1					
1:45 PM	730	28	1					1		1								1		
2:00 PM	794	31					1					1								
2:15 PM	809	29																		
2:30 PM	912	25			1										1					
2:45 PM	994	11	1					1		1								1		
3:00 PM	987	7					1					1								
3:15 PM	1056	9																		
3:30 PM	1034	13			1										1					
3:45 PM	1005	17	1					1		1								1		
4:00 PM	1032	18					1					1								
4:15 PM	1016	16																		
4:30 PM	1055	14			1										1					
4:45 PM	1039	8	1					1		1								1		
5:00 PM	993	8					1					1								
5:15 PM	912	7																		
5:30 PM	790	9			1										1					
5:45 PM	728	11	1					1		1								1		
6:00 PM	652	10										1								
6:15 PM	480	8																		
6:30 PM	308	4													1					
6:45 PM	130	2																		
7:00 PM	0	0																		
7:15 PM	0	0																		
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8:45 PM	0	0																		
9:00 PM	0	0																		
9:15 PM	0	0																		
9:30 PM	0	0																		
9:45 PM	0	0																		
HOURS MET					12	0	12	0	6	0	12	0	12	0	11	0	13	0	12	0
WARRANT SATISFIED?					NO		N/A		NO		N/A		NO				NO			

Warrant Met: **No**

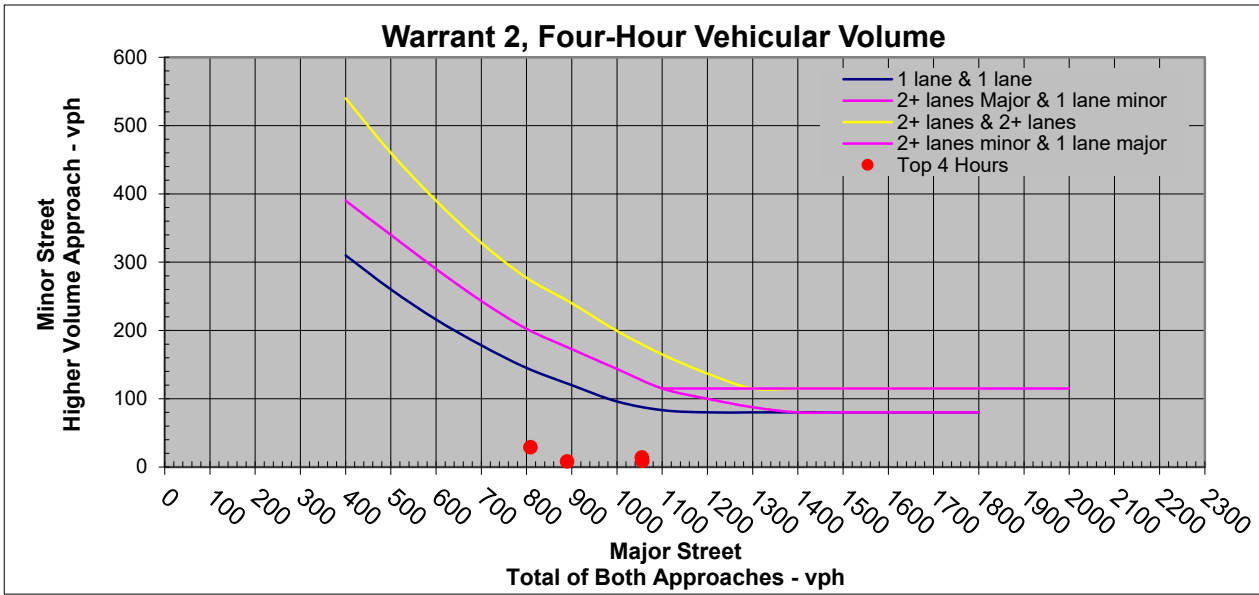
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	Total Number of Unique Hours Met on Figure 4C-1	0
Major street: 1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street: 1 Lane		

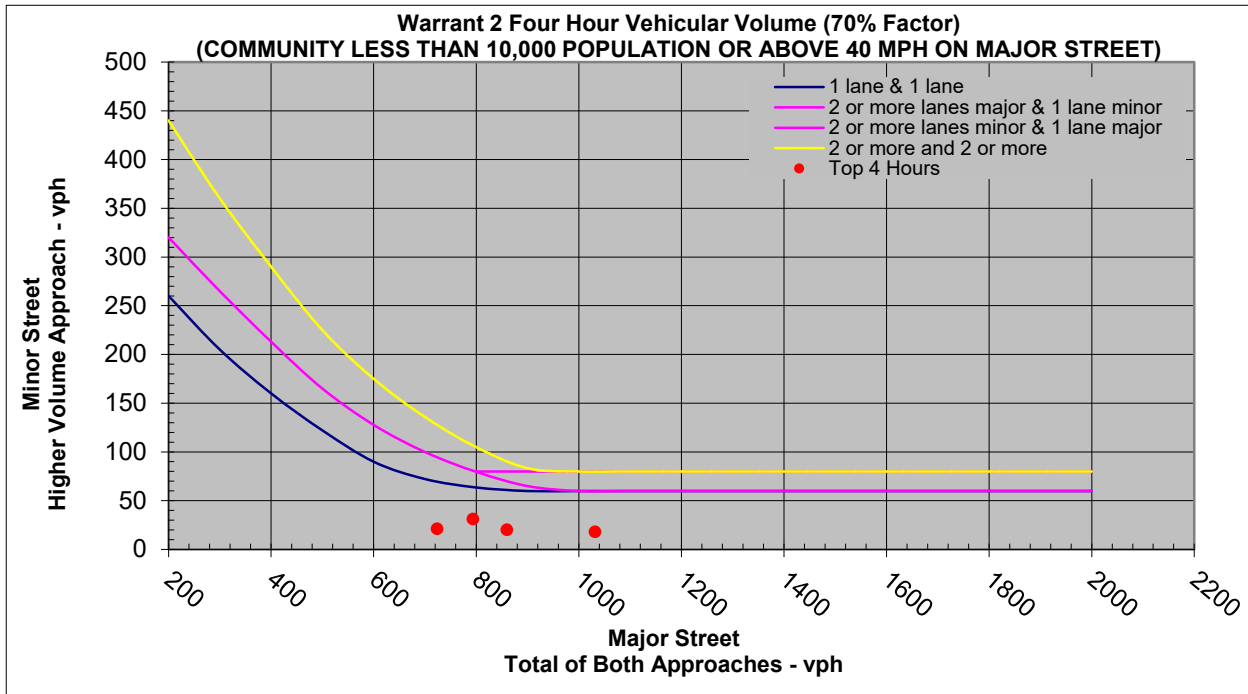
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? **No**

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - State Rd.		Inor - Audi North Dr. / Quick Rd. E					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	0	0	0	0	0	0		
6:15 AM	117	60	0	1	177	1		
6:30 AM	254	133	0	10	387	10		
6:45 AM	426	181	1	17	607	17		
7:00 AM	567	273	2	19	840	19		
7:15 AM	555	305	3	20	860	20		
7:30 AM	538	294	5	13	832	13		
7:45 AM	484	406	5	8	890	8		
8:00 AM	433	420	5	8	853	8		
8:15 AM	401	399	4	9	800	9		
8:30 AM	368	398	3	11	766	11		
8:45 AM	331	307	5	9	638	9		
9:00 AM	307	265	5	11	572	11		
9:15 AM	293	248	5	10	541	10		
9:30 AM	267	258	6	8	525	8		
9:45 AM	261	267	6	12	528	12		
10:00 AM	264	267	9	11	531	11		
10:15 AM	257	296	12	11	553	12		
10:30 AM	267	299	9	11	566	11		
10:45 AM	278	308	9	11	586	11		
11:00 AM	281	345	6	10	626	10		
11:15 AM	293	352	8	12	645	12		
11:30 AM	322	371	7	13	693	13		
11:45 AM	306	357	5	12	663	12		
12:00 PM	330	352	5	17	682	17		
12:15 PM	336	369	4	18	705	18		
12:30 PM	315	373	3	18	688	18		
12:45 PM	332	392	2	21	724	21		
1:00 PM	309	391	3	16	700	16		
1:15 PM	329	379	3	16	708	16		
1:30 PM	339	367	5	17	706	17		
1:45 PM	347	383	4	28	730	28		
2:00 PM	394	400	4	31	794	31		
2:15 PM	392	417	2	29	809	29		
2:30 PM	395	517	1	25	912	25		
2:45 PM	427	567	0	11	994	11		
3:00 PM	410	577	4	7	987	7		
3:15 PM	440	616	6	9	1056	9		
3:30 PM	460	574	7	13	1034	13		
3:45 PM	451	554	7	17	1005	17		
4:00 PM	455	577	7	18	1032	18		
4:15 PM	434	582	7	16	1016	16		
4:30 PM	452	603	8	14	1055	14		
4:45 PM	439	600	8	7	1039	8		
5:00 PM	422	571	6	8	993	8		
5:15 PM	388	524	2	7	912	7		
5:30 PM	319	471	1	9	790	9		
5:45 PM	298	430	1	11	728	11		
6:00 PM	252	400	0	10	652	10		
6:15 PM	189	291	0	8	480	8		
6:30 PM	128	180	0	4	308	4		
6:45 PM	44	86	0	2	130	2		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	4:30 PM	5:30 PM	1055	14
2nd Highest Hour	3:15 PM	4:15 PM	1056	9
3rd Highest Hour	7:45 AM	8:45 AM	890	8
4th Highest Hour	2:15 PM	3:15 PM	809	29

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	2:00 PM	3:00 PM	794	31
2nd Highest Hour	12:45 PM	1:45 PM	724	21
3rd Highest Hour	7:15 AM	8:15 AM	860	20
4th Highest Hour	4:00 PM	5:00 PM	1032	18



Are the requirements for Warrant 2 met?:

OMUTCD WARRANT 3, PEAK HOUR		
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time
Major Street:	1 Lane	4:30 PM
Minor Street:	1 Lane	Peak Hour End Time
		5:30 PM

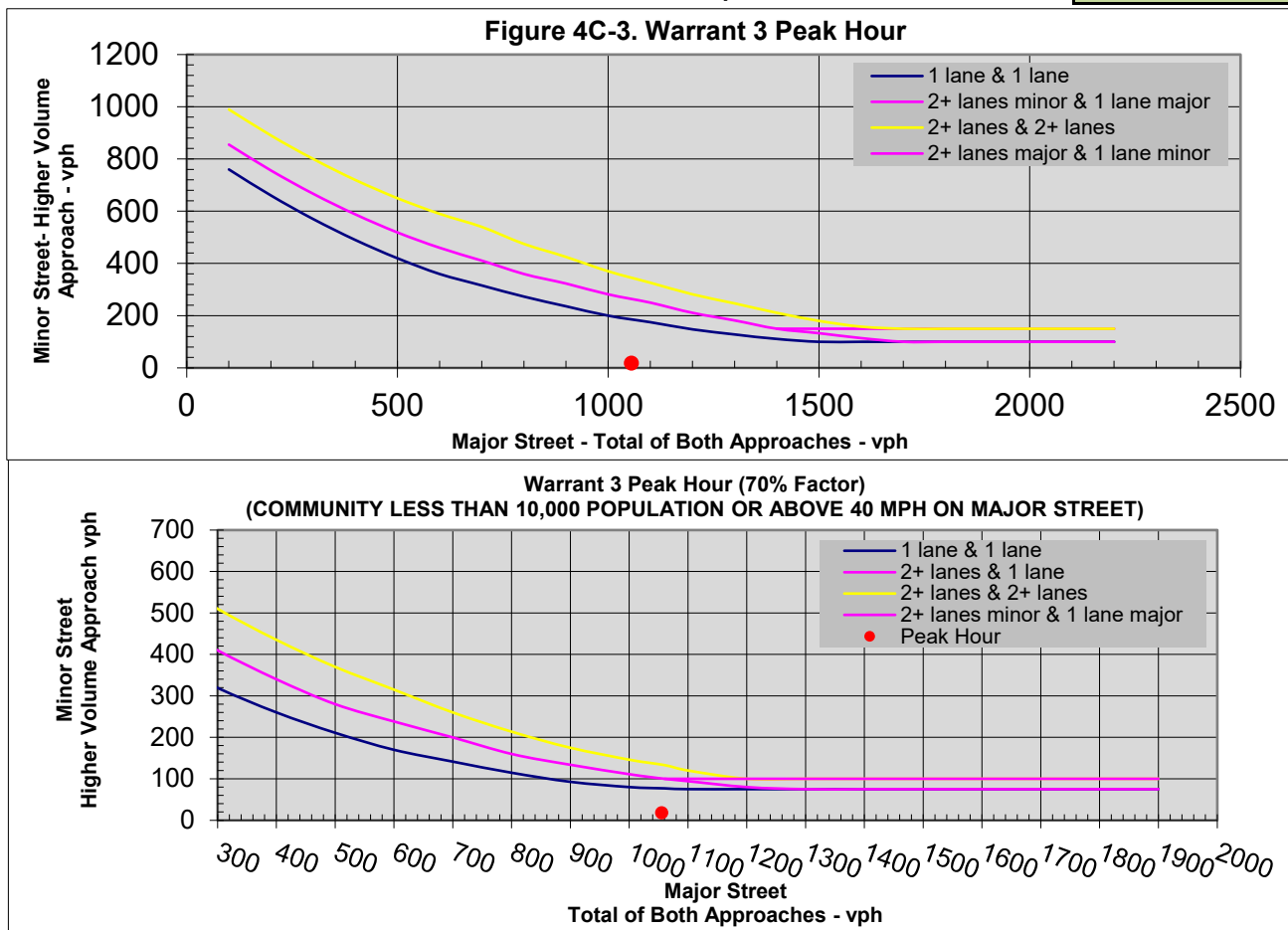
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
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Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No
---	----

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

*If applicable, attach all supporting calculations and documentation.

Are the requirements for Warrant 3 met?: **No**



2_Signal Warrant Spreadsheet_State & Audi North-Quick Rd Ext

Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	0	0	0	0
6:15 AM	177	1	178	178
6:30 AM	387	10	397	397
6:45 AM	607	17	624	625
7:00 AM	840	19	859	861
7:15 AM	860	20	880	883
7:30 AM	832	13	845	850
7:45 AM	890	8	898	903
8:00 AM	853	8	861	866
8:15 AM	800	9	809	813
8:30 AM	766	11	777	780
8:45 AM	638	9	647	652
9:00 AM	572	11	583	588
9:15 AM	541	10	551	556
9:30 AM	525	8	533	539
9:45 AM	528	12	540	546
10:00 AM	531	11	542	551
10:15 AM	553	12	565	576
10:30 AM	566	11	577	586
10:45 AM	586	11	597	606
11:00 AM	626	10	636	642
11:15 AM	645	12	657	665
11:30 AM	693	13	706	713
11:45 AM	663	12	675	680
12:00 PM	682	17	699	704
12:15 PM	705	18	723	727
12:30 PM	688	18	706	709
12:45 PM	724	21	745	747
1:00 PM	700	16	716	719
1:15 PM	708	16	724	727
1:30 PM	706	17	723	728
1:45 PM	730	28	758	762
2:00 PM	794	31	825	829
2:15 PM	809	29	838	840
2:30 PM	912	25	937	938
2:45 PM	994	11	1005	1005
3:00 PM	987	7	994	998
3:15 PM	1056	9	1065	1071
3:30 PM	1034	13	1047	1054
3:45 PM	1005	17	1022	1029
4:00 PM	1032	18	1050	1057
4:15 PM	1016	16	1032	1039
4:30 PM	1055	14	1069	1077
4:45 PM	1039	8	1047	1054
5:00 PM	993	8	1001	1007
5:15 PM	912	7	919	921
5:30 PM	790	9	799	800
5:45 PM	728	11	739	740
6:00 PM	652	10	662	662
6:15 PM	480	8	488	488
6:30 PM	308	4	312	312
6:45 PM	130	2	132	132
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1055	18	148.30586	83.365362

STUDY AND ANALYSIS INFORMATION

Municipality:	City of Cuyahoga Falls	Traffic Volumes Obtained By:	PRIME AE Group
County:	Summit	Analysis Date:	9/21/2021
ODOT Engineering District:	4	Agency/ Company Name Performing Warrant Analysis:	PRIME AE Group

Analysis Information

Data Collection Date: 5/11/2021
 Day of the Week: Tuesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: State Rd.

Major Street Approach Direction: N-Bound / S-Bound

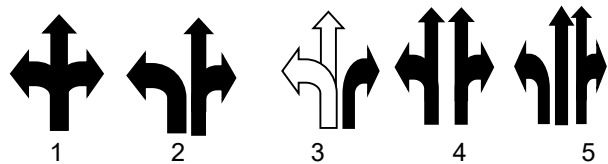
Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
 *Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Audi South Dr. / Quick Rd.

Minor Street Approach Configuration: 1 E-Bound / 1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant					
	Applicable?	Satisfied?				
Warrant 1, Eight-Hour Vehicular Volume	Yes	No				
Warrant 2, Four-Hour Vehicular Volume	Yes	No				
Warrant 3, Peak Hour	Yes	No	Signals installed under Warrant 3 should be traffic actuated. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">2:30 PM</td></tr> <tr><td style="text-align: center;">3:30 PM</td></tr> </table>	Peak Hour	2:30 PM	3:30 PM
Peak Hour						
2:30 PM						
3:30 PM						
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)						
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">2:45 PM</td></tr> <tr><td style="text-align: center;">3:45 PM</td></tr> </table>	Peak Hour	2:45 PM	3:45 PM
Peak Hour						
2:45 PM						
3:45 PM						
Warrant 5, School Crossing	No		N/A			
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.			
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9			
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.			

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The Modeling and Forecasting Section should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. Please fill inputs on PHB Score Sheet and submit to ODOT.

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
			100%		70%		100%		70%		80%		80%		56%		56%	
	Major	Minor	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
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5:15 AM	0	0																
5:30 AM	0	0																
5:45 AM	0	0																
6:00 AM	0	0																
6:15 AM	209	7																
6:30 AM	501	16	1		1					1				1			1	
6:45 AM	776	27						1		1			1					
7:00 AM	1016	34																
7:15 AM	1035	32																
7:30 AM	972	26	1		1					1				1			1	
7:45 AM	1005	27						1		1			1					
8:00 AM	965	26																
8:15 AM	902	19																
8:30 AM	850	22	1		1					1				1			1	
8:45 AM	693	16							1				1					

1_Signal Warrant Spreadsheet_State & Audi South-Quick Rd

9:00 AM	656	18																
9:15 AM	630	23																
9:30 AM	617	21	1		1				1			1		1		1		1
9:45 AM	611	24						1				1						
10:00 AM	623	23																
10:15 AM	660	21																
10:30 AM	670	25	1		1				1			1		1		1		1
10:45 AM	686	26						1				1						
11:00 AM	675	24																
11:15 AM	695	29																
11:30 AM	718	30	1		1				1			1		1		1		1
11:45 AM	743	29						1				1						
12:00 PM	784	33					1											
12:15 PM	756	31																
12:30 PM	758	27	1		1				1			1		1		1		1
12:45 PM	793	25						1				1						
1:00 PM	796	26					1											
1:15 PM	849	28																
1:30 PM	866	30	1		1					1				1		1		1
1:45 PM	877	57						1	1			1						
2:00 PM	931	60					1											
2:15 PM	992	61																
2:30 PM	1077	67	1		1					1				1		1		1
2:45 PM	1103	45						1				1						
3:00 PM	1092	37					1											
3:15 PM	1088	39																
3:30 PM	1030	40	1		1					1				1		1		1
3:45 PM	1043	40						1				1						
4:00 PM	1038	42					1											
4:15 PM	1018	38																
4:30 PM	1032	34	1		1					1				1		1		1
4:45 PM	1001	27						1				1						
5:00 PM	967	23					1											
5:15 PM	916	23																
5:30 PM	851	19	1		1					1				1		1		1
5:45 PM	775	15						1				1						
6:00 PM	719	16																
6:15 PM	512	12																
6:30 PM	320	9												1				
6:45 PM	156	7																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
7:45 PM	0	0																
8:00 PM	0	0																
8:15 PM	0	0																
8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			12	0	12	0	8	0	12	1	12	0	12	0	13	0	12	1
WARRANT SATISFIED?			NO		N/A		NO		N/A		NO		NO		NO		NO	

Warrant Met: **No**

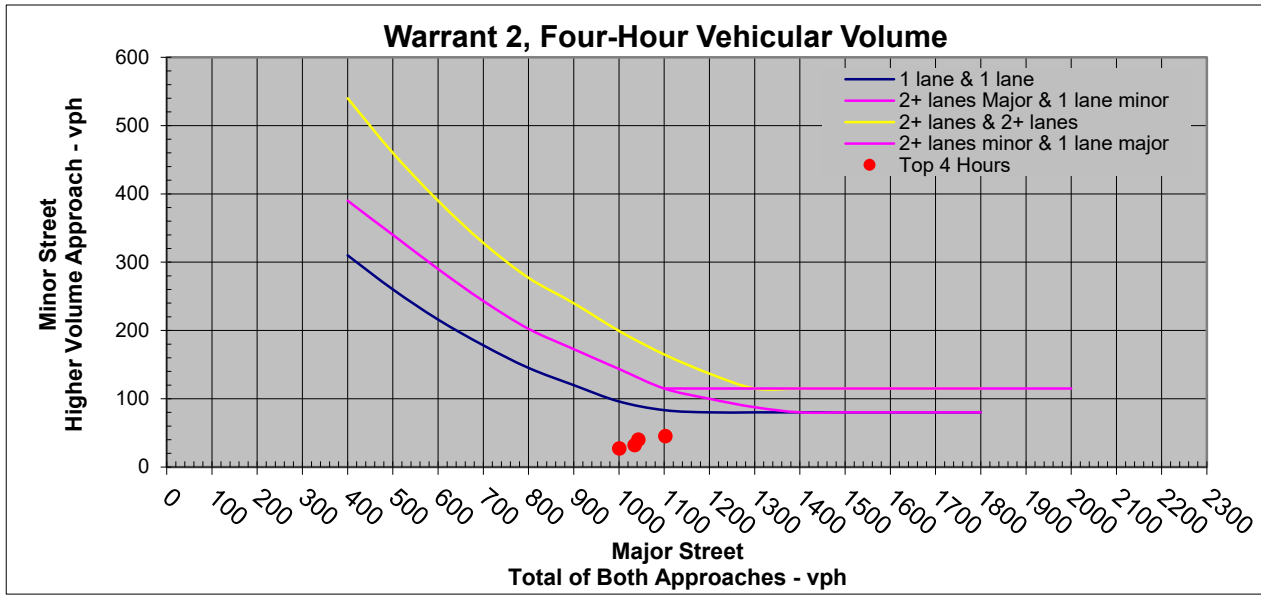
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	Total Number of Unique Hours Met on Figure 4C-1	0
Major street: 1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	1
Minor Street: 1 Lane		

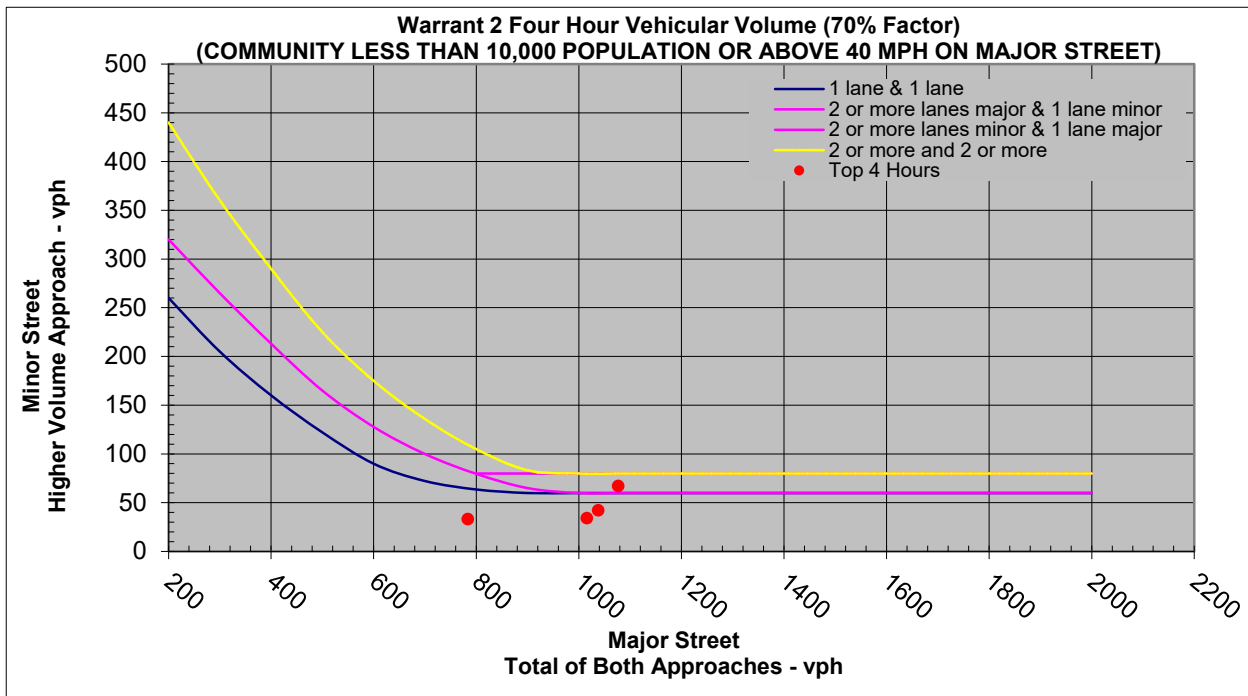
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? **No**

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - State Rd.		Minor - Audi South Dr. / Quick Rd.					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	0	0	0	0	0	0		
6:15 AM	151	58	1	7	209	7		
6:30 AM	373	128	1	16	501	16		
6:45 AM	594	182	2	27	776	27		
7:00 AM	758	258	2	34	1016	34		
7:15 AM	743	292	4	32	1035	32		
7:30 AM	676	296	4	26	972	26		
7:45 AM	604	401	3	27	1005	27		
8:00 AM	557	408	3	26	965	26		
8:15 AM	507	395	4	19	902	19		
8:30 AM	453	397	7	22	850	22		
8:45 AM	385	308	7	16	693	16		
9:00 AM	372	284	8	18	656	18		
9:15 AM	363	267	6	23	630	23		
9:30 AM	359	258	5	21	617	21		
9:45 AM	357	254	6	24	611	24		
10:00 AM	355	268	7	23	623	23		
10:15 AM	367	293	10	21	660	21		
10:30 AM	367	303	9	25	670	25		
10:45 AM	389	297	9	26	686	26		
11:00 AM	379	296	8	24	675	24		
11:15 AM	405	290	10	29	695	29		
11:30 AM	421	297	14	30	718	30		
11:45 AM	427	316	15	29	743	29		
12:00 PM	440	344	19	33	784	33		
12:15 PM	418	338	12	31	756	31		
12:30 PM	399	359	12	27	758	27		
12:45 PM	402	391	11	25	793	25		
1:00 PM	405	391	9	26	796	26		
1:15 PM	432	417	12	28	849	28		
1:30 PM	459	407	10	30	866	30		
1:45 PM	475	402	9	57	877	57		
2:00 PM	519	412	10	60	931	60		
2:15 PM	533	459	9	61	992	61		Met
2:30 PM	531	546	11	67	1077	67		
2:45 PM	528	575	13	45	1103	45		
3:00 PM	497	595	11	37	1092	37		
3:15 PM	492	596	14	39	1088	39		
3:30 PM	490	540	13	40	1030	40		
3:45 PM	496	547	5	40	1043	40		
4:00 PM	478	560	8	42	1038	42		
4:15 PM	484	534	8	38	1018	38		
4:30 PM	494	538	11	34	1032	34		
4:45 PM	473	528	17	27	1001	27		
5:00 PM	458	509	14	23	967	23		
5:15 PM	404	512	19	23	916	23		
5:30 PM	362	489	14	19	851	19		
5:45 PM	342	433	10	15	775	15		
6:00 PM	332	387	9	16	719	16		
6:15 PM	251	261	1	12	512	12		
6:30 PM	166	154	0	9	320	9		
6:45 PM	78	78	0	7	156	7		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	2:45 PM	3:45 PM	1103	45
2nd Highest Hour	3:45 PM	4:45 PM	1043	40
3rd Highest Hour	7:15 AM	8:15 AM	1035	32
4th Highest Hour	4:45 PM	5:45 PM	1001	27

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	2:30 PM	3:30 PM	1077	67
2nd Highest Hour	4:00 PM	5:00 PM	1038	42
3rd Highest Hour	7:00 AM	8:00 AM	1016	34
4th Highest Hour	12:00 PM	1:00 PM	784	33



Are the requirements for Warrant 2 met?:

OMUTCD WARRANT 3, PEAK HOUR		
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time
Major Street:	1 Lane	2:30 PM
Minor Street:	1 Lane	Peak Hour End Time
		3:30 PM

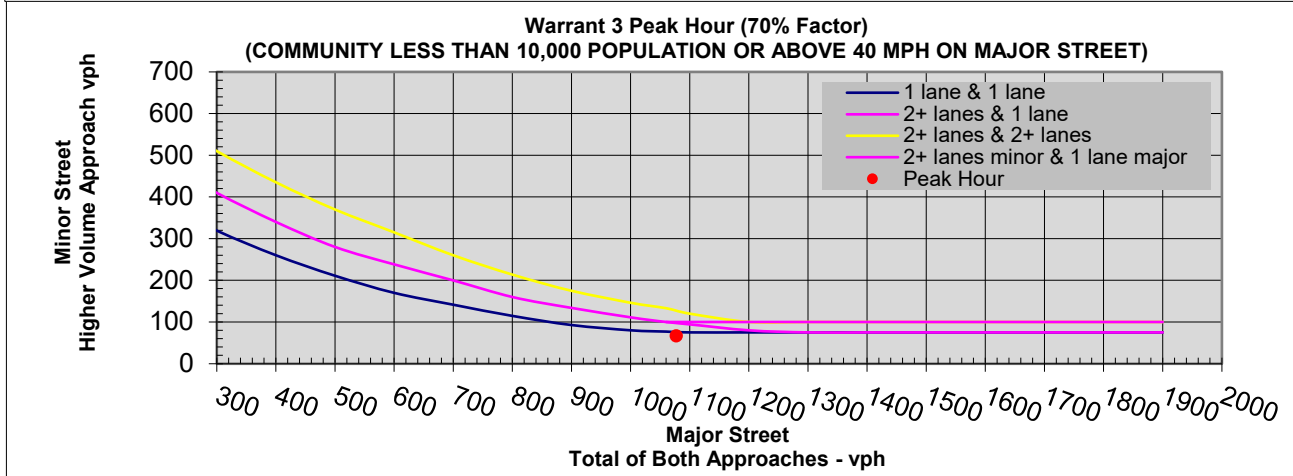
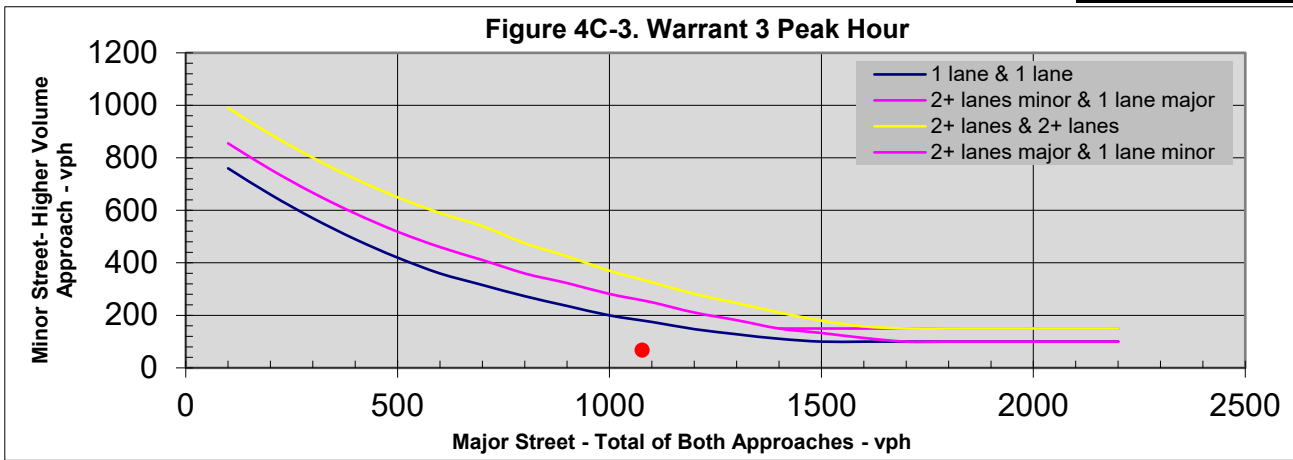
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
---	----

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No
---	----

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

*If applicable, attach all supporting calculations and documentation.

Are the requirements for Warrant 3 met?: **No**



1_Signal Warrant Spreadsheet_State & Audi South-Quick Rd

Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	0	0	0	0
6:15 AM	209	7	216	217
6:30 AM	501	16	517	518
6:45 AM	776	27	803	805
7:00 AM	1016	34	1050	1052
7:15 AM	1035	32	1067	1071
7:30 AM	972	26	998	1002
7:45 AM	1005	27	1032	1035
8:00 AM	965	26	991	994
8:15 AM	902	19	921	925
8:30 AM	850	22	872	879
8:45 AM	693	16	709	716
9:00 AM	656	18	674	682
9:15 AM	630	23	653	659
9:30 AM	617	21	638	643
9:45 AM	611	24	635	641
10:00 AM	623	23	646	653
10:15 AM	660	21	681	691
10:30 AM	670	25	695	704
10:45 AM	686	26	712	721
11:00 AM	675	24	699	707
11:15 AM	695	29	724	734
11:30 AM	718	30	748	762
11:45 AM	743	29	772	787
12:00 PM	784	33	817	836
12:15 PM	756	31	787	799
12:30 PM	758	27	785	797
12:45 PM	793	25	818	829
1:00 PM	796	26	822	831
1:15 PM	849	28	877	889
1:30 PM	866	30	896	906
1:45 PM	877	57	934	943
2:00 PM	931	60	991	1001
2:15 PM	992	61	1053	1062
2:30 PM	1077	67	1144	1155
2:45 PM	1103	45	1148	1161
3:00 PM	1092	37	1129	1140
3:15 PM	1088	39	1127	1141
3:30 PM	1030	40	1070	1083
3:45 PM	1043	40	1083	1088
4:00 PM	1038	42	1080	1088
4:15 PM	1018	38	1056	1064
4:30 PM	1032	34	1066	1077
4:45 PM	1001	27	1028	1045
5:00 PM	967	23	990	1004
5:15 PM	916	23	939	958
5:30 PM	851	19	870	884
5:45 PM	775	15	790	800
6:00 PM	719	16	735	744
6:15 PM	512	12	524	525
6:30 PM	320	9	329	329
6:45 PM	156	7	163	163
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1077	67	140.77265	82.621347

STUDY AND ANALYSIS INFORMATION

Municipality:	City of Cuyahoga Falls	Traffic Volumes Obtained By:	PRIME AE Group
County:	Summit	Analysis Date:	9/21/2021
ODOT Engineering District:	4	Agency/ Company Name Performing Warrant Analysis:	PRIME AE Group

Analysis Information

Data Collection Date: 4/20/2021
Day of the Week: Tuesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: Wyoga Lake Rd.

Major Street Approach Direction: N-Bound
S-Bound

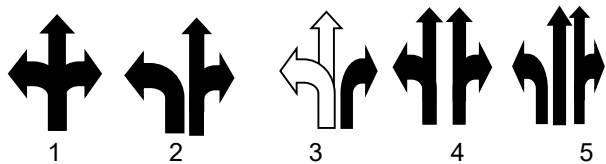
Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Walsh Center Dr. / Wyoga Lake Blvd.

Minor Street Approach Configuration: 1 E-Bound
1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)
 Apply Right Turn Lane Reduction*: No

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant					
	Applicable?	Satisfied?				
Warrant 1, Eight-Hour Vehicular Volume	Yes	No				
Warrant 2, Four-Hour Vehicular Volume	Yes	No				
Warrant 3, Peak Hour	Yes	No	Signals installed under Warrant 3 should be traffic actuated. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">7:00 AM</td></tr> <tr><td style="text-align: center;">8:00 AM</td></tr> </table>	Peak Hour	7:00 AM	8:00 AM
Peak Hour						
7:00 AM						
8:00 AM						
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)						
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">7:00 AM</td></tr> <tr><td style="text-align: center;">8:00 AM</td></tr> </table>	Peak Hour	7:00 AM	8:00 AM
Peak Hour						
7:00 AM						
8:00 AM						
Warrant 5, School Crossing	No		N/A			
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.			
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9			
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.			

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The Modeling and Forecasting Section should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. Please fill inputs on PHB Score Sheet and submit to ODOT.

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Install New Traffic Signal

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
			100%		70%		100%		70%		80%		80%		56%		56%	
	Major	Minor	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
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5:45 AM	0	0																
6:00 AM	0	0																
6:15 AM	93	12																
6:30 AM	254	34																
6:45 AM	518	87	1		1					1				1	1	1	1	
7:00 AM	714	148							1	1			1	1				
7:15 AM	675	152																
7:30 AM	582	127																
7:45 AM	400	97			1						1			1	1			
8:00 AM	383	57																
8:15 AM	423	56															1	1
8:30 AM	396	45																
8:45 AM	363	41			1									1				

3_Signal Warrant Spreadsheet_Wyoga Lake Rd & Walsh Center Dr-Wyoga Lake Blvd

9:00 AM	229	34																
9:15 AM	179	27																
9:30 AM	181	26																
9:45 AM	184	28																
10:00 AM	185	26																
10:15 AM	190	28																
10:30 AM	184	36																
10:45 AM	195	31																
11:00 AM	211	38																
11:15 AM	220	37																
11:30 AM	249	30																
11:45 AM	243	29																
12:00 PM	264	25																
12:15 PM	270	21																
12:30 PM	270	24																
12:45 PM	260	26																
1:00 PM	250	28																
1:15 PM	277	32																
1:30 PM	299	36															1	
1:45 PM	439	65			1					1							1	1
2:00 PM	584	124	1						1	1								
2:15 PM	613	145											1	1				
2:30 PM	650	169													1	1		
2:45 PM	573	158			1	1											1	1
3:00 PM	488	98																
3:15 PM	482	72																
3:30 PM	479	53															1	
3:45 PM	528	51	1		1				1		1							1
4:00 PM	560	59																1
4:15 PM	595	62																
4:30 PM	622	64												1	1	1		
4:45 PM	596	55	1		1				1	1	1							1
5:00 PM	539	50																1
5:15 PM	488	43																
5:30 PM	413	37																
5:45 PM	379	44			1													
6:00 PM	342	43																
6:15 PM	244	35																
6:30 PM	170	25																
6:45 PM	71	11																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
7:45 PM	0	0																
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8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			4	0	8	1	0	0	4	3	6	1	3	3	8	3	6	6
WARRANT SATISFIED?			NO		N/A		NO		N/A		NO				NO			

Warrant Met: **No**

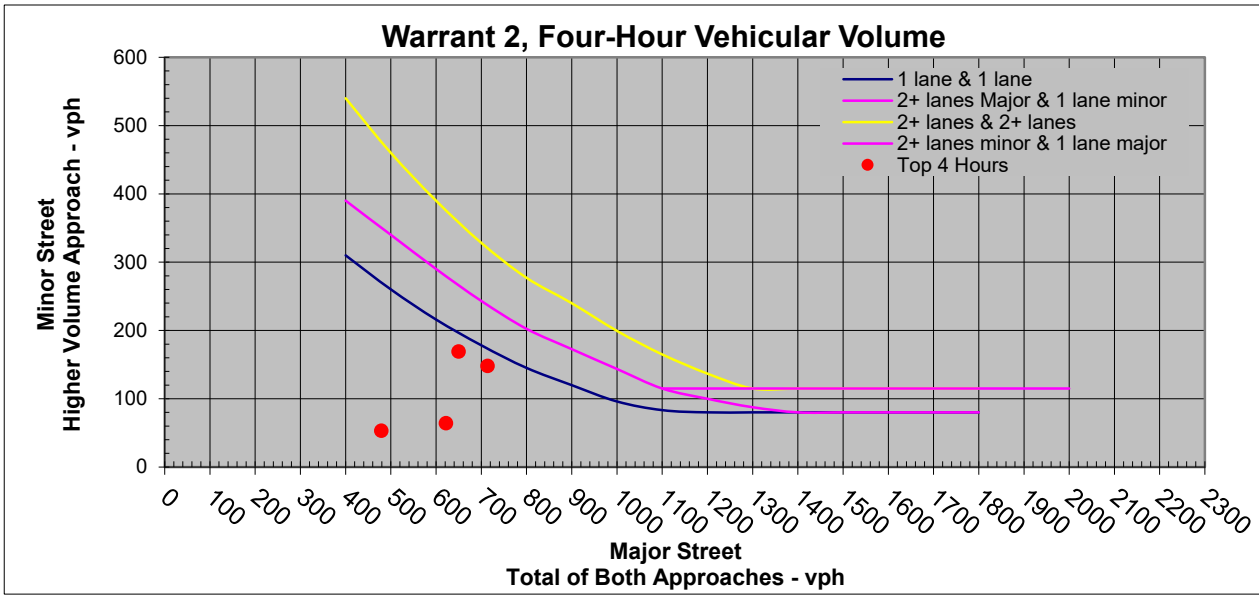
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	Total Number of Unique Hours Met on Figure 4C-1	0
Major street: 1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	2
Minor Street: 1 Lane		

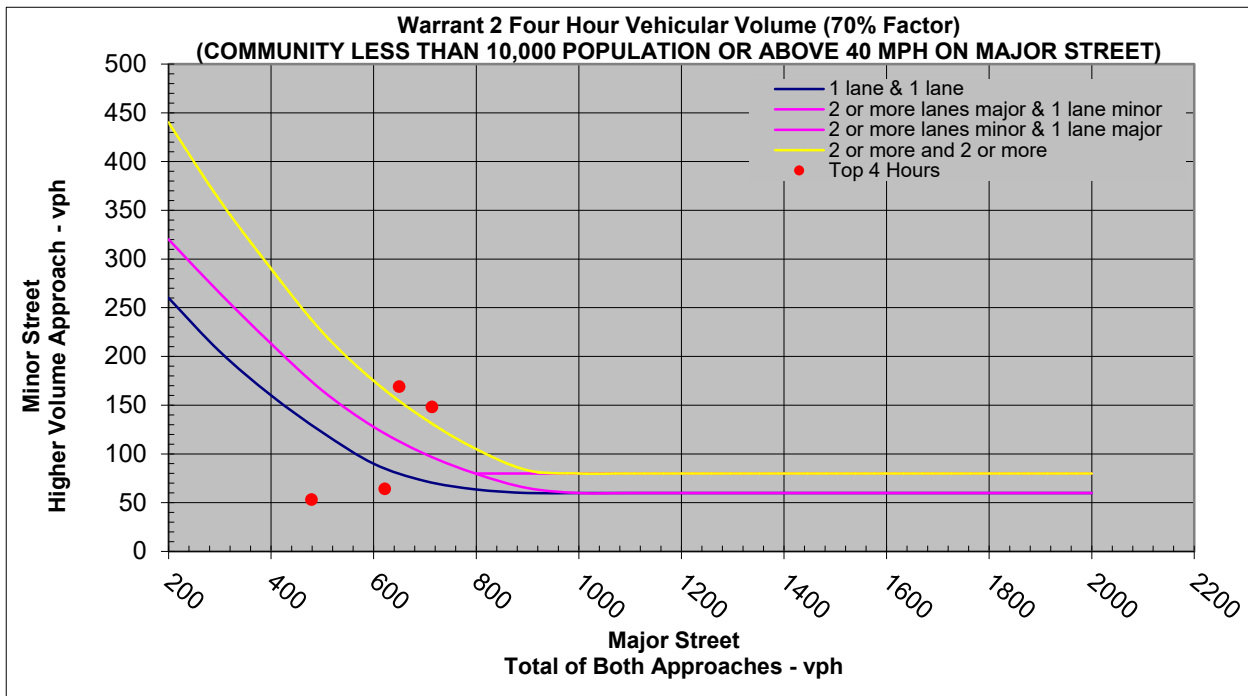
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? **No**

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Wyoga Lake Rd.		- Walsh Center Dr. / Wyoga Lake					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	0	0	0	0	0	0		
6:15 AM	61	32	12	2	93	12		
6:30 AM	156	98	34	34	254	34		
6:45 AM	336	182	78	87	518	87		
7:00 AM	447	267	131	148	714	148		Met
7:15 AM	411	264	133	152	675	152		
7:30 AM	356	226	127	124	582	127		
7:45 AM	227	173	97	74	400	97		
8:00 AM	223	160	57	14	383	57		
8:15 AM	248	175	56	9	423	56		
8:30 AM	225	171	45	6	396	45		
8:45 AM	201	162	41	9	363	41		
9:00 AM	114	115	34	8	229	34		
9:15 AM	87	92	27	10	179	27		
9:30 AM	91	90	26	13	181	26		
9:45 AM	88	96	28	10	184	28		
10:00 AM	88	97	26	13	185	26		
10:15 AM	94	96	28	16	190	28		
10:30 AM	86	98	36	14	184	36		
10:45 AM	92	103	31	16	195	31		
11:00 AM	97	114	38	15	211	38		
11:15 AM	100	120	37	12	220	37		
11:30 AM	120	129	30	13	249	30		
11:45 AM	116	127	29	10	243	29		
12:00 PM	127	137	25	11	264	25		
12:15 PM	121	149	21	13	270	21		
12:30 PM	119	151	24	13	270	24		
12:45 PM	111	149	26	13	260	26		
1:00 PM	106	144	28	21	250	28		
1:15 PM	116	161	31	32	277	32		
1:30 PM	129	170	34	36	299	36		
1:45 PM	172	267	39	65	439	65		
2:00 PM	200	384	44	124	584	124		Met
2:15 PM	212	401	52	145	613	145		
2:30 PM	219	431	49	169	650	169		
2:45 PM	202	371	44	158	573	158		
3:00 PM	203	285	36	98	488	98		
3:15 PM	201	281	37	72	482	72		
3:30 PM	210	269	37	53	479	53		
3:45 PM	243	285	51	46	528	51		
4:00 PM	269	291	59	41	560	59		
4:15 PM	290	305	62	41	595	62		
4:30 PM	289	333	64	45	622	64		
4:45 PM	269	327	55	39	596	55		
5:00 PM	230	309	50	46	539	50		
5:15 PM	197	291	39	43	488	43		
5:30 PM	172	241	35	37	413	37		
5:45 PM	145	234	27	44	379	44		
6:00 PM	125	217	22	43	342	43		
6:15 PM	91	153	15	35	244	35		
6:30 PM	57	113	9	25	170	25		
6:45 PM	27	44	4	11	71	11		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1		Start Time	End Time	Major Street	Minor Street
Top Hour	7:00 AM	8:00 AM	714	148	
2nd Highest Hour	2:30 PM	3:30 PM	650	169	
3rd Highest Hour	4:30 PM	5:30 PM	622	64	
4th Highest Hour	3:30 PM	4:30 PM	479	53	

Top Hours for Figure 4C-2		Start Time	End Time	Major Street	Minor Street
Top Hour	2:30 PM	3:30 PM	650	169	
2nd Highest Hour	7:00 AM	8:00 AM	714	148	
3rd Highest Hour	4:30 PM	5:30 PM	622	64	
4th Highest Hour	3:30 PM	4:30 PM	479	53	



Are the requirements for Warrant 2 met?:

OMUTCD WARRANT 3, PEAK HOUR		
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time
Major Street:	1 Lane	7:00 AM
Minor Street:	1 Lane	Peak Hour End Time
		8:00 AM

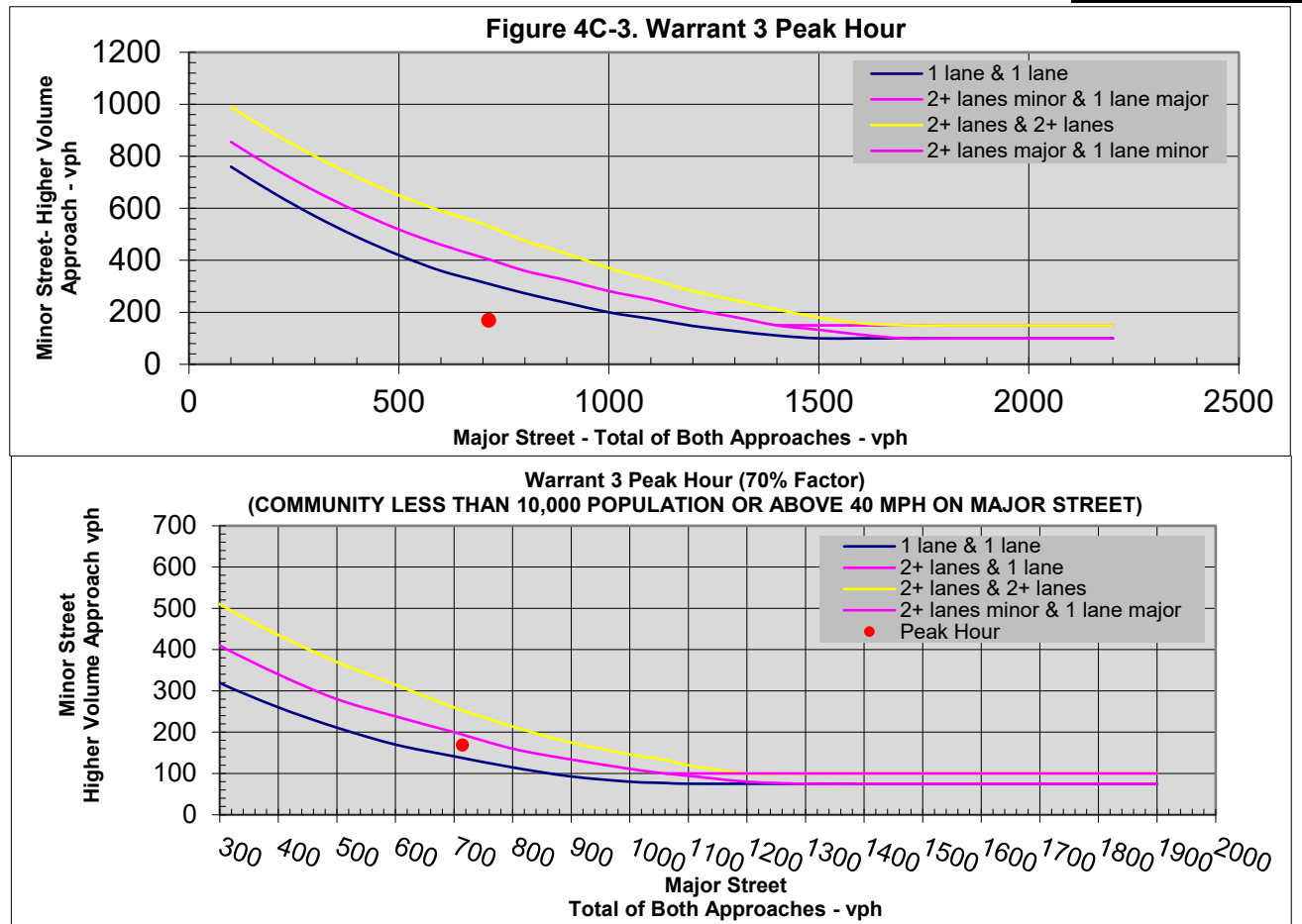
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
---	----

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	Yes
---	-----

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	Yes
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	Yes
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

*If applicable, attach all supporting calculations and documentation.

Are the requirements for Warrant 3 met?: **No**



3_Signal Warrant Spreadsheet_Wyoga Lake Rd & Walsh Center Dr-Wyoga Lake Blvd

Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	0	0	0	0
6:15 AM	93	12	105	107
6:30 AM	254	34	288	322
6:45 AM	518	87	605	683
7:00 AM	714	148	862	993
7:15 AM	675	152	827	960
7:30 AM	582	127	709	833
7:45 AM	400	97	497	571
8:00 AM	383	57	440	454
8:15 AM	423	56	479	488
8:30 AM	396	45	441	447
8:45 AM	363	41	404	413
9:00 AM	229	34	263	271
9:15 AM	179	27	206	216
9:30 AM	181	26	207	220
9:45 AM	184	28	212	222
10:00 AM	185	26	211	224
10:15 AM	190	28	218	234
10:30 AM	184	36	220	234
10:45 AM	195	31	226	242
11:00 AM	211	38	249	264
11:15 AM	220	37	257	269
11:30 AM	249	30	279	292
11:45 AM	243	29	272	282
12:00 PM	264	25	289	300
12:15 PM	270	21	291	304
12:30 PM	270	24	294	307
12:45 PM	260	26	286	299
1:00 PM	250	28	278	299
1:15 PM	277	32	309	340
1:30 PM	299	36	335	369
1:45 PM	439	65	504	543
2:00 PM	584	124	708	752
2:15 PM	613	145	758	810
2:30 PM	650	169	819	868
2:45 PM	573	158	731	775
3:00 PM	488	98	586	622
3:15 PM	482	72	554	591
3:30 PM	479	53	532	569
3:45 PM	528	51	579	625
4:00 PM	560	59	619	660
4:15 PM	595	62	657	698
4:30 PM	622	64	686	731
4:45 PM	596	55	651	690
5:00 PM	539	50	589	635
5:15 PM	488	43	531	570
5:30 PM	413	37	450	485
5:45 PM	379	44	423	450
6:00 PM	342	43	385	407
6:15 PM	244	35	279	294
6:30 PM	170	25	195	204
6:45 PM	71	11	82	86
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
714	169	291.73357	133.93877

STUDY AND ANALYSIS INFORMATION

Municipality:	City of Cuyahoga Falls	Traffic Volumes Obtained By:	PRIME AE Group
County:	Summit	Analysis Date:	9/21/2021
ODOT Engineering District:	4	Agency/ Company Name Performing Warrant Analysis:	PRIME AE Group

Analysis Information

Data Collection Date: 4/22/2021
Day of the Week: Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Existing Traffic Signal at intersection: No

Total Number of Approaches at Intersection: 4

Major Street Information

Major Street Name and Route Number: Wyoga Lake Rd.

Major Street Approach Direction: N-Bound
S-Bound

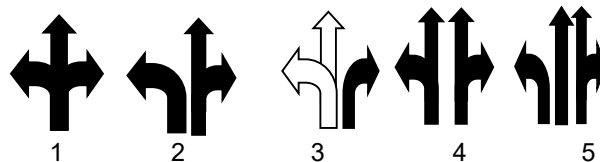
Number of Thru Lanes on Each Major Street Approach: 1 LANE(S)

Speed Limit or 85th Percentile Speed on the Major Street*: 35 MPH
*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number: Walsh South Dr. / Chateau Dr.

Minor Street Approach Configuration: 1 E-Bound
1 W-Bound



Number of Thru Lanes on Each Minor Street Approach: 1 LANE(S)

Apply Right Turn Lane Reduction*: Yes

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Warrant					
	Applicable?	Satisfied?				
Warrant 1, Eight-Hour Vehicular Volume	Yes	No				
Warrant 2, Four-Hour Vehicular Volume	Yes	No				
Warrant 3, Peak Hour	Yes	No	Signals installed under Warrant 3 should be traffic actuated. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">1:30 PM</td></tr> <tr><td style="text-align: center;">2:30 PM</td></tr> </table>	Peak Hour	1:30 PM	2:30 PM
Peak Hour						
1:30 PM						
2:30 PM						
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)						
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD. <table border="1" style="float: right; margin-top: 5px;"> <tr><td style="text-align: center;">Peak Hour</td></tr> <tr><td style="text-align: center;">1:30 PM</td></tr> <tr><td style="text-align: center;">2:30 PM</td></tr> </table>	Peak Hour	1:30 PM	2:30 PM
Peak Hour						
1:30 PM						
2:30 PM						
Warrant 5, School Crossing	No		N/A			
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.			
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)			
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-9			
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.			

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:
1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The Modeling and Forecasting Section should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. Please fill inputs on PHB Score Sheet and submit to ODOT.

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	1 Lane

Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? No

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
			100%		70%		100%		70%		80%		80%		56%		56%	
	Major	Minor	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
			80%	80%	56%	56%												
1 / 1	X		500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+			500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
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6:00 AM	0	0																
6:15 AM	64	10																
6:30 AM	134	17																
6:45 AM	230	31																
7:00 AM	430	37			1					1				1			1	
7:15 AM	483	31																
7:30 AM	462	29																
7:45 AM	416	30																
8:00 AM	261	29																
8:15 AM	195	33																
8:30 AM	207	35																
8:45 AM	204	30																

3_Signal Warrant Spreadsheet_Wyoga Lake Rd & Walsh South Dr-Chateau Dr

9:00 AM	211	37																
9:15 AM	220	32																
9:30 AM	206	30																
9:45 AM	216	29																
10:00 AM	235	24																
10:15 AM	260	36																
10:30 AM	274	42																
10:45 AM	287	48												1				
11:00 AM	283	48																
11:15 AM	279	50																
11:30 AM	301	50																
11:45 AM	308	45												1				
12:00 PM	304	46																
12:15 PM	345	40																
12:30 PM	375	39			1													
12:45 PM	530	41	1					1		1				1			1	
1:00 PM	698	41										1						
1:15 PM	748	35																
1:30 PM	762	38			1		1											
1:45 PM	654	36	1					1		1				1			1	
2:00 PM	576	34																
2:15 PM	548	42																
2:30 PM	572	40			1													
2:45 PM	608	40	1					1		1				1			1	
3:00 PM	638	43																
3:15 PM	665	52																
3:30 PM	665	57			1													
3:45 PM	649	71	1					1	1	1			1	1	1		1	1
4:00 PM	630	67																
4:15 PM	583	62																
4:30 PM	557	53			1													
4:45 PM	572	43	1					1		1				1			1	1
5:00 PM	533	41																
5:15 PM	532	36																
5:30 PM	509	40			1													
5:45 PM	402	37								1				1				
6:00 PM	338	41																
6:15 PM	215	33																
6:30 PM	113	25																
6:45 PM	61	12																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
7:45 PM	0	0																
8:00 PM	0	0																
8:15 PM	0	0																
8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			5	0	7	0	1	0	5	1	7	0	3	1	9	0	6	2
WARRANT SATISFIED?			NO		N/A		NO		N/A		NO				NO			

Warrant Met: **No**

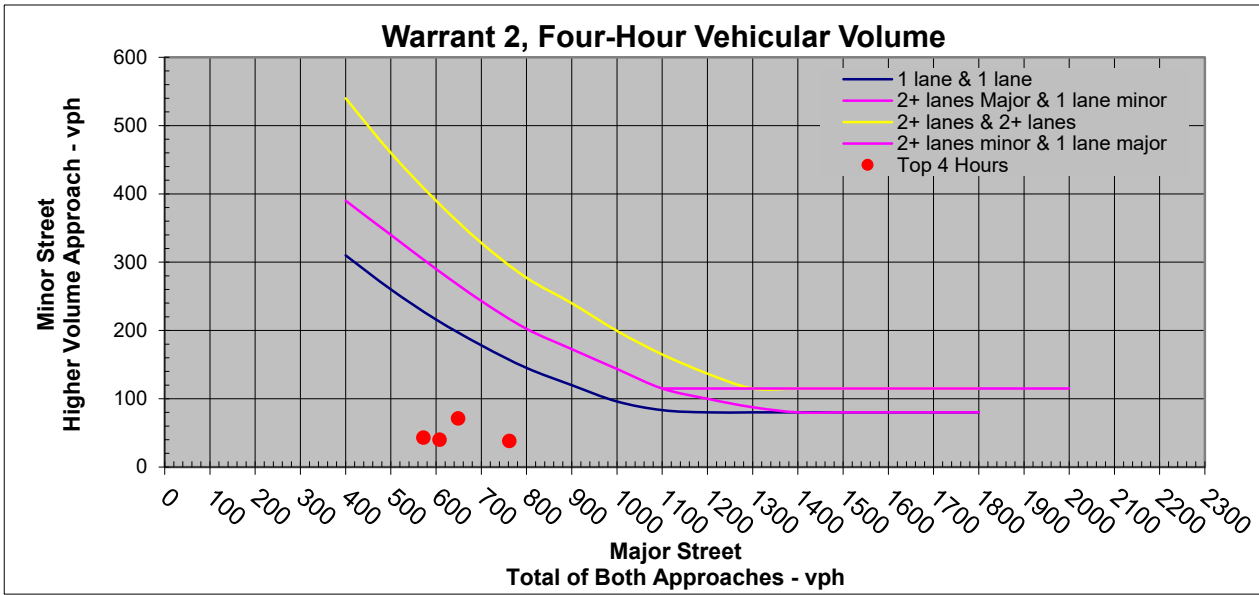
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach	Total Number of Unique Hours Met on Figure 4C-1	0
Major street: 1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street: 1 Lane		

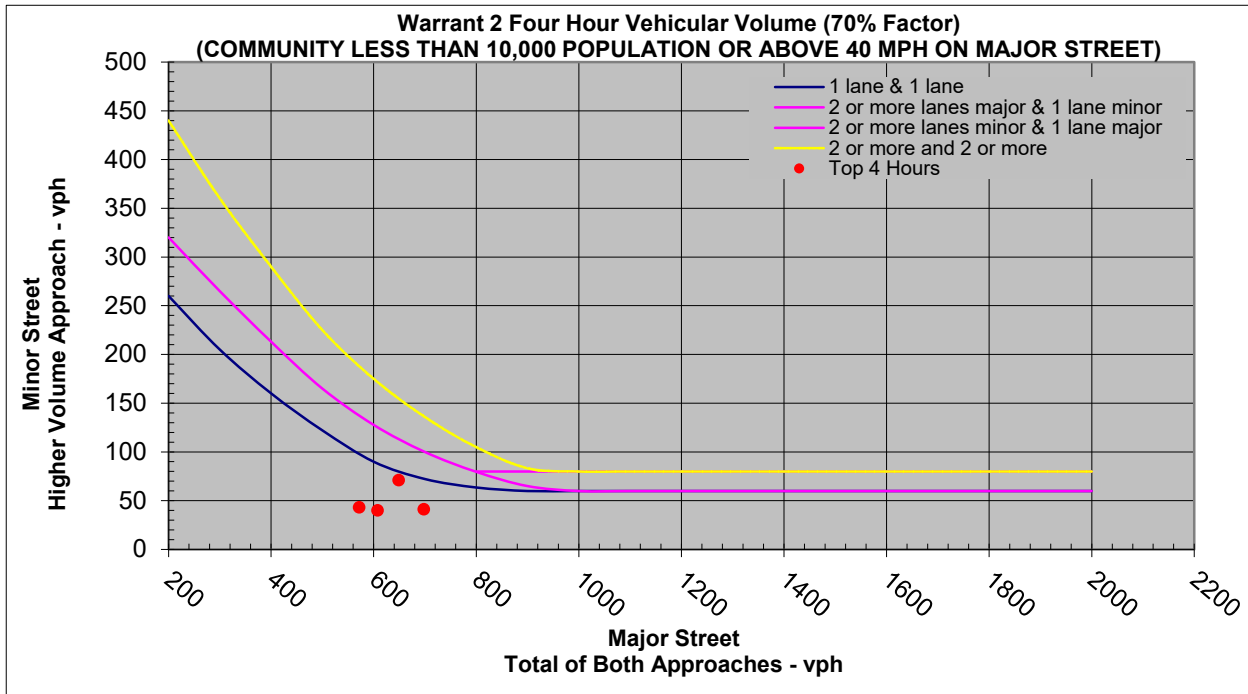
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? **No**

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Major - Wyoga Lake Rd.		Minor - Walsh South Dr. / Chateau Dr.					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	0	0	0	0	0	0		
6:15 AM	33	31	10	1	64	10		
6:30 AM	74	60	17	2	134	17		
6:45 AM	131	99	31	3	230	31		
7:00 AM	261	169	37	4	430	37		
7:15 AM	274	209	31	3	483	31		
7:30 AM	259	203	29	2	462	29		
7:45 AM	223	193	30	1	416	30		
8:00 AM	121	140	29	2	261	29		
8:15 AM	102	93	33	3	195	33		
8:30 AM	103	104	35	5	207	35		
8:45 AM	106	98	30	7	204	30		
9:00 AM	99	112	37	6	211	37		
9:15 AM	96	124	32	6	220	32		
9:30 AM	87	119	30	4	206	30		
9:45 AM	85	131	29	4	216	29		
10:00 AM	100	135	24	3	235	24		
10:15 AM	128	132	36	3	260	36		
10:30 AM	140	134	42	3	274	42		
10:45 AM	156	131	48	3	287	48		
11:00 AM	154	129	48	2	283	48		
11:15 AM	149	130	50	2	279	50		
11:30 AM	163	138	50	5	301	50		
11:45 AM	155	153	45	5	308	45		
12:00 PM	144	160	46	3	304	46		
12:15 PM	144	201	40	5	345	40		
12:30 PM	157	218	39	4	375	39		
12:45 PM	216	314	41	14	530	41		
1:00 PM	248	450	41	18	698	41		
1:15 PM	272	476	35	25	748	35		
1:30 PM	279	483	38	20	762	38		
1:45 PM	257	397	36	11	654	36		
2:00 PM	286	290	34	6	576	34		
2:15 PM	294	254	42	7	548	42		
2:30 PM	314	258	40	7	572	40		
2:45 PM	330	278	40	8	608	40		
3:00 PM	338	300	43	9	638	43		
3:15 PM	336	329	52	14	665	52		
3:30 PM	326	339	57	18	665	57		
3:45 PM	312	337	71	17	649	71		
4:00 PM	285	345	67	24	630	67		
4:15 PM	264	319	62	22	583	62		
4:30 PM	222	335	53	25	557	53		
4:45 PM	195	377	43	29	572	43		
5:00 PM	172	361	41	28	533	41		
5:15 PM	150	382	36	30	532	36		
5:30 PM	158	351	35	40	509	40		
5:45 PM	138	264	37	36	402	37		
6:00 PM	121	217	41	29	338	41		
6:15 PM	87	128	33	22	215	33		
6:30 PM	47	66	25	4	113	25		
6:45 PM	25	36	12	1	61	12		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	1:30 PM	2:30 PM	762	38
2nd Highest Hour	3:45 PM	4:45 PM	649	71
3rd Highest Hour	2:45 PM	3:45 PM	608	40
4th Highest Hour	4:45 PM	5:45 PM	572	43

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	3:45 PM	4:45 PM	649	71
2nd Highest Hour	1:00 PM	2:00 PM	698	41
3rd Highest Hour	2:45 PM	3:45 PM	608	40
4th Highest Hour	4:45 PM	5:45 PM	572	43



Are the requirements for Warrant 2 met?:

OMUTCD WARRANT 3, PEAK HOUR		
Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time
Major Street:	1 Lane	1:30 PM
Minor Street:	1 Lane	Peak Hour End Time
		2:30 PM

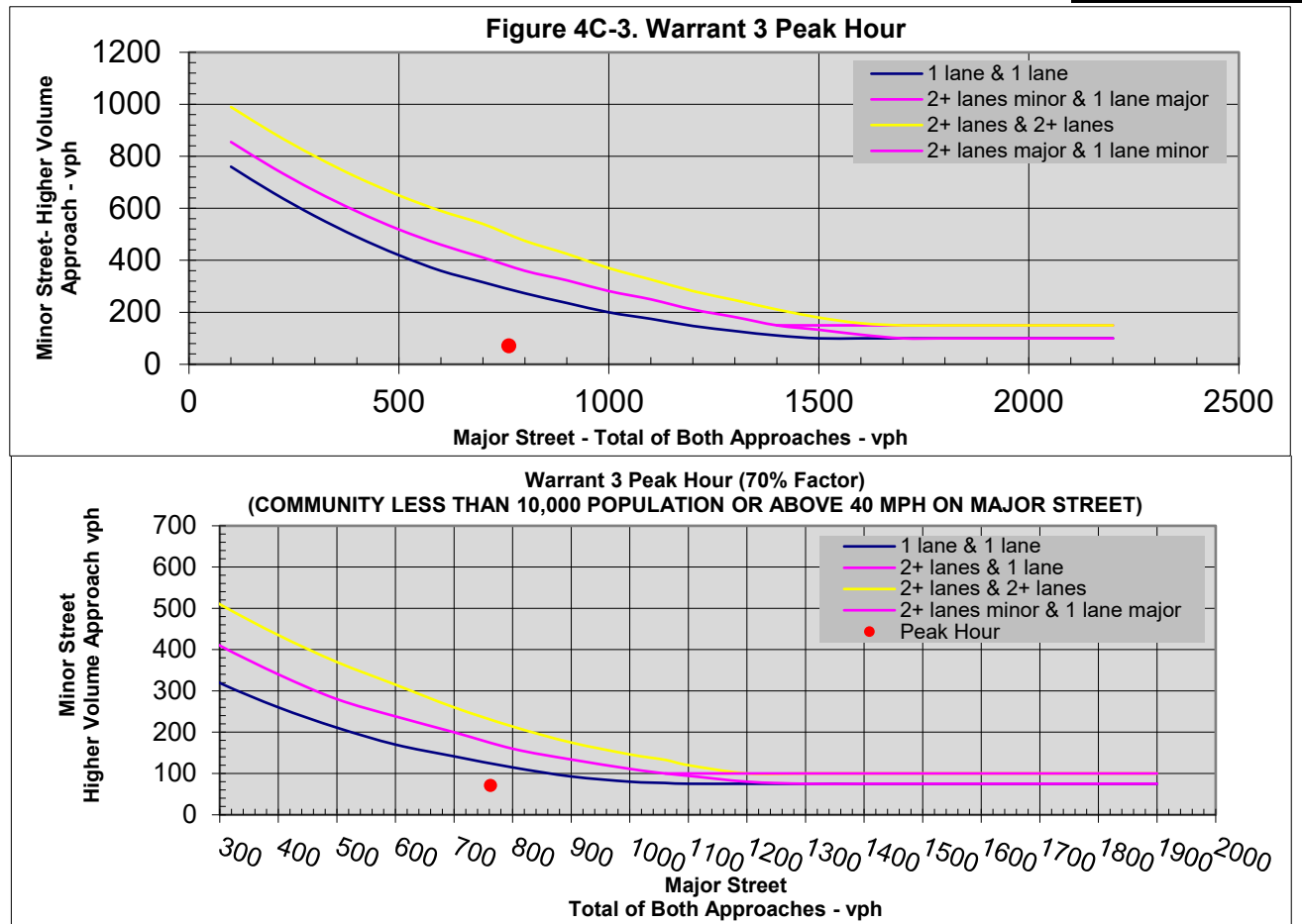
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	No
---	----

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No
---	----

Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

**If applicable, attach all supporting calculations and documentation.*

Are the requirements for Warrant 3 met?: **No**



3_Signal Warrant Spreadsheet_Wyoga Lake Rd & Walsh South Dr-Chateau Dr

Hour Vehicular Volume				
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	0	0	0	0
6:15 AM	64	10	74	75
6:30 AM	134	17	151	153
6:45 AM	230	31	261	264
7:00 AM	430	37	467	471
7:15 AM	483	31	514	517
7:30 AM	462	29	491	493
7:45 AM	416	30	446	447
8:00 AM	261	29	290	292
8:15 AM	195	33	228	231
8:30 AM	207	35	242	247
8:45 AM	204	30	234	241
9:00 AM	211	37	248	254
9:15 AM	220	32	252	258
9:30 AM	206	30	236	240
9:45 AM	216	29	245	249
10:00 AM	235	24	259	262
10:15 AM	260	36	296	299
10:30 AM	274	42	316	319
10:45 AM	287	48	335	338
11:00 AM	283	48	331	333
11:15 AM	279	50	329	331
11:30 AM	301	50	351	356
11:45 AM	308	45	353	358
12:00 PM	304	46	350	353
12:15 PM	345	40	385	390
12:30 PM	375	39	414	418
12:45 PM	530	41	571	585
1:00 PM	698	41	739	757
1:15 PM	748	35	783	808
1:30 PM	762	38	800	820
1:45 PM	654	36	690	701
2:00 PM	576	34	610	616
2:15 PM	548	42	590	597
2:30 PM	572	40	612	619
2:45 PM	608	40	648	656
3:00 PM	638	43	681	690
3:15 PM	665	52	717	731
3:30 PM	665	57	722	740
3:45 PM	649	71	720	737
4:00 PM	630	67	697	721
4:15 PM	583	62	645	667
4:30 PM	557	53	610	635
4:45 PM	572	43	615	644
5:00 PM	533	41	574	602
5:15 PM	532	36	568	598
5:30 PM	509	40	549	584
5:45 PM	402	37	439	475
6:00 PM	338	41	379	408
6:15 PM	215	33	248	270
6:30 PM	113	25	138	142
6:45 PM	61	12	73	74
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
762	71	268.07193	121.94113



APPENDIX F
PRINCETON PLACE SITE PLAN &
TRIP GENERATION DATA



SITE INFORMATION:

PARCEL: 3500402 PARCEL: 3500517
 AREA: 20.60 AC AC AREA 17.35 AC

TOTAL SITE AREA AREA: 37.95 AC
 32.38 AC RESIDENTIAL
 4.89 AC COMMERCIAL
 0.68 AC EXISTING ROW

RESIDENTIAL DEVELOPMENT AREA:

AREA: 31.98 AC
 PROPOSED OPEN SPACE: 15.8 AC (48%)
 PROPOSED ACCESS AISLE LINEAR FEET: 4,051 LF
 PROPOSED UNITS: 150

COUNT	WIDTH	UNIT NAME	TYPE
42	28'	CANTERBURY	RANCH TOWNHOME*
45	38'	SANIBEL	RANCH TOWNHOME
34	30'	MENDOZA	RANCH TOWNHOME
29	20'	HAVANA	TERRACE TOWNHOME
150 TOTAL UNITS			*16 SUNROOM UNITS

ZONING INFORMATION:

MU-3 SUB-URBAN CENTER DISTRICT (IN NORTHAMPTON PLANNING AREA)

MIN. LOT SIZE:	PER CODE	SHOWN
2400 SF	2400 SF	32.55 AC
MAX. LOT COVERAGE:	60%	23%
BUILDING COVERAGE:	80%	35%
TOTAL COVERAGE:	20'	20' OFF WYOGA LAKE RD. 25' OFF INTERIOR EOP
MIN. FRONT SETBACK:	10'	10'
MIN. SIDE SETBACK:	20'	20'
MIN. REAR SETBACK:	24', 2 STORIES	--
MIN. BLDG. HEIGHT:	52', 4 STORIES	--
MAX. BLDG. HEIGHT:	10,000 SF	--
MAX. FOOTPRINT:	--	20'
MIN. BLDG. SEPARATION:	2.85 AC	15.8 AC
MIN. OPEN SPACE:	(800 SF/D.U.)	

Davey Resource Group
 1310 SHARON COPLEY ROAD, P.O. BOX 37
 SHARON CENTER, OHIO 44274
 (PHONE) 330.950.0804 (FAX) 888.820.8283
DAVEY
 Resource Group

0 25 50 100
 SCALE (IN FEET)
 1 inch = 50 FT.

N

PRINCETON PLACE
OVERALL SITE PLAN

PROJECT NUMBER: 2230
 DATE: 2021-09-14
 SHEET: 4 OF 39

File: T:\Site\eng\princeton\2230_wyoga_lake_civil\princeton\100_2018\emb\Scheme (13) - Page Setups (24 of 22 PDF)

Land Use: 220

Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors). Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and off-campus student apartment (Land Use 225) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively. For the one site with Saturday data, the overall highest vehicle volume was counted between 9:45 and 10:45 a.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 11:45 a.m. and 12:45 p.m.

For the one dense multi-use urban site with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 6:15 and 7:15 p.m., respectively.

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

The average numbers of person trips per vehicle trip at the five general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.13 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.21 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, District of Columbia, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Minnesota, New Jersey, New York, Ontario, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington.

It is expected that the number of bedrooms and number of residents are likely correlated to the number of trips generated by a residential site. Many of the studies included in this land use did not indicate the total number of bedrooms. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

168, 187, 188, 204, 211, 300, 305, 306, 319, 320, 321, 357, 390, 412, 418, 525, 530, 571, 579, 583, 864, 868, 869, 870, 896, 903, 918, 946, 947, 948, 951

Land Use: 710

General Office Building

Description

A general office building houses multiple tenants; it is a location where affairs of businesses, commercial or industrial organizations, or professional persons or firms are conducted. An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers, and tenant services, such as a bank or savings and loan institution, a restaurant, or cafeteria and service retail facilities. A general office building with a gross floor area of 5,000 square feet or less is classified as a small office building (Land Use 712). Corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), office park (Land Use 750), research and development center (Land Use 760), and business park (Land Use 770) are additional related uses.

If information is known about individual buildings, it is suggested that the general office building category be used rather than office parks when estimating trip generation for one or more office buildings in a single development. The office park category is more general and should be used when a breakdown of individual or different uses is not known. If the general office building category is used and if additional buildings, such as banks, restaurants, or retail stores are included in the development, the development should be treated as a multiuse project. On the other hand, if the office park category is used, internal trips are already reflected in the data and do not need to be considered.

When the buildings are interrelated (defined by shared parking facilities or the ability to easily walk between buildings) or house one tenant, it is suggested that the total area or employment of all the buildings be used for calculating the trip generation. When the individual buildings are isolated and not related to one another, it is suggested that trip generation be calculated for each building separately and then summed.

Additional Data

The average building occupancy varied considerably within the studies for which occupancy data were provided. The reported occupied gross floor area was 88 for general urban/suburban sites and 96 percent for the center city core and dense multi-use urban sites.

Time-of-day distribution data for this land use for a weekday, Saturday, and Sunday are presented in Appendix A. For the 16 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:30 and 8:30 a.m. and 4:30 and 5:30 p.m., respectively.

For the three general urban/suburban sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 8:45 and 9:45 a.m. and 12:45 and 1:45 p.m., respectively. For the three dense multi-use urban sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 8:30 and 9:30 a.m. and 4:45 and 5:45 p.m., respectively. For the four center city core sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 9:00 and 10:00 a.m. and 12:45 and 1:45 p.m., respectively.

The average numbers of person trips per vehicle trip at the eight center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 2.76 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 2.90 during Weekday, AM Peak Hour of Generator
- 2.91 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 3.02 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 18 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.47 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.47 during Weekday, AM Peak Hour of Generator
- 1.46 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.53 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 23 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.30 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.34 during Weekday, AM Peak Hour of Generator
- 1.32 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.41 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Pennsylvania, Texas, Utah, Virginia, and Washington.

Source Numbers

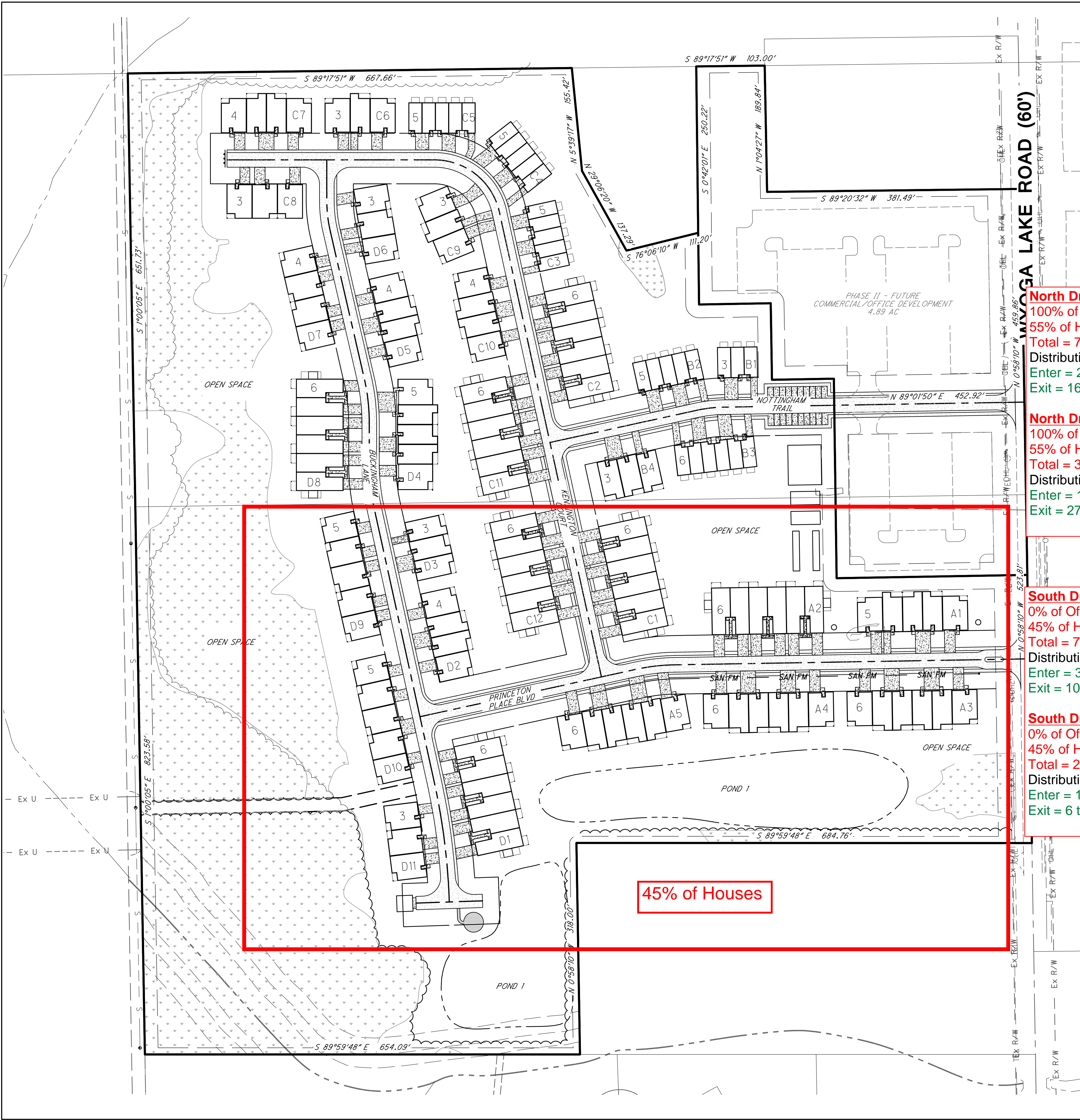
161, 175, 183, 184, 185, 207, 212, 217, 247, 253, 257, 260, 262, 273, 279, 297, 298, 300, 301, 302, 303, 304, 321, 322, 323, 324, 327, 404, 407, 408, 418, 419, 423, 562, 734, 850, 859, 862, 867, 869, 883, 884, 890, 891, 904, 940, 944, 946, 964, 965, 972

LAND USE AND TRIP GENERATION
Princeton Place Development
City of Cuyahoga Falls, Ohio

PROPOSED LAND USE	SIZE	UNITS	ITE CODE	WEEKDAY	AM PEAK		PM PEAK	
					Enter	Exit	Enter	Exit
Multifamily Housing (Low-Rise) [1]								
Princeton Place - Phase I	150	Dwelling Units	220	1093	16	54	53	32
General Office Building [1]								
Princeton Place - Phase II	49	1,000 Sq. Ft.	710	531	62	10	9	49
TOTALS				1624	78	64	62	81

NOTES:

[1] ITE Trip Generation Manual, 10th Edition



SITE INFORMATION:

PARCEL: 3500402 AREA: 20.60 AC AC
 PARCEL: 3500517 AREA: 17.35 AC
 TOTAL SITE AREA AREA: 37.95 AC
 32.38 AC RESIDENTIAL
 4.89 AC COMMERCIAL
 0.68 AC EXISTING ROW

RESIDENTIAL DEVELOPMENT AREA:
 AREA: 31.98 AC
 PROPOSED OPEN SPACE: 15.8 AC (48%)
 PROPOSED ACCESS AISLE LINEAR FEET: 4,051 LF
 PROPOSED UNITS: 150

COUNT	WIDTH	UNIT NAME	TYPE
42	28'	CANTERBURY	RANCH TOWNHOME*
45	38'	SANIBEL	RANCH TOWNHOME
		MENDOZA	RANCH TOWNHOME
		HAVANA	TERRACE TOWNHOME *16 SUNROOM UNITS

North Drive AM
 100% of Office = 62 Enter, 10 Exit
 55% of Houses = AM - 9 Enter, 30 Exit
 Total = 71 Enter, 40 Exit
 Distribution = 40% N, 60% S
 Enter = 28 from N, 43 from S
 Exit = 16 to N, 24 to S

North Drive PM
 100% of Office = 9 Enter, 49 Exit
 55% of Houses = AM - 29 Enter, 18 Exit
 Total = 38 Enter, 67 Exit
 Distribution = 40% N, 60% S
 Enter = 15 from N, 23 from S
 Exit = 27 to N, 40 to S

South Drive AM
 0% of Office = 0 Enter, 0 Exit
 45% of Houses = AM - 7 Enter, 24 Exit
 Total = 7 Enter, 24 Exit
 Distribution = 40% N, 60% S
 Enter = 3 from N, 4 from S
 Exit = 10 to N, 14 to S

South Drive PM
 0% of Office = 0 Enter, 0 Exit
 45% of Houses = AM - 24 Enter, 14 Exit
 Total = 24 Enter, 14 Exit
 Distribution = 40% N, 60% S
 Enter = 10 from N, 14 from S
 Exit = 6 to N, 8 to S

45% of Houses

PER DISTRICT (IN NORTHAMPTON PLANNING AREA)

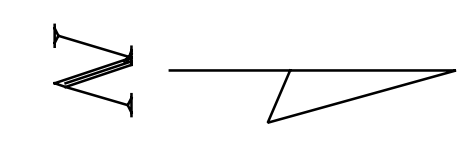
PER CODE	SHOWN
2400 SF	32.55 AC
GE: 60%	23%
: 80%	35%
20'	20' OFF WYOGA LAKE RD.
	25' OFF INTERIOR EOP
10'	10'
20'	20'
24', 2 STORIES	--
52', 4 STORIES	--
10,000 SF	--
N: --	20'
2.85 AC	15.8 AC
(800 SF/D.U.)	



APPENDIX G STUDY AREA VOLUME DIAGRAM



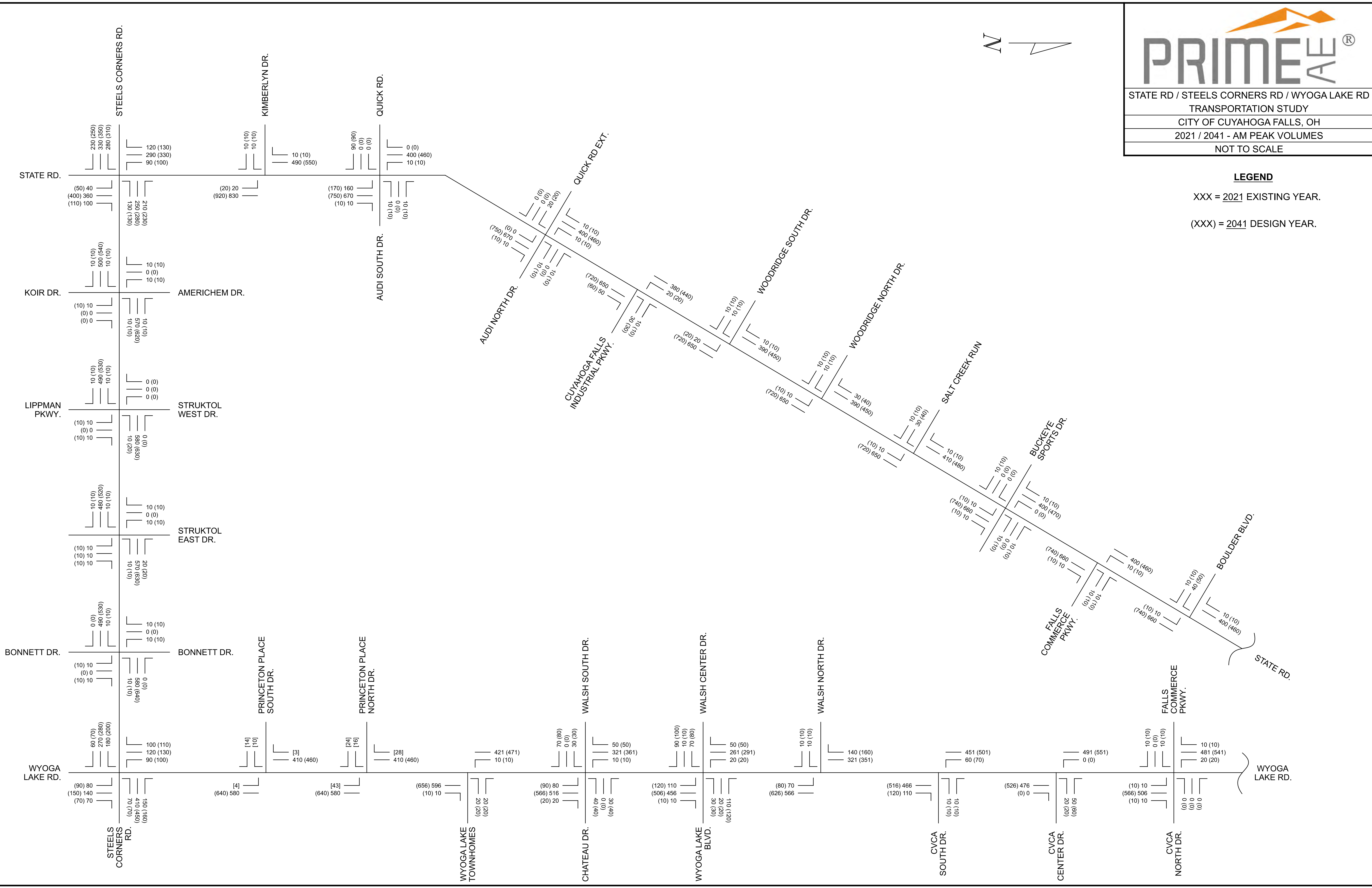
STATE RD / STEELS CORNERS RD / WYOGA LAKE RD
 TRANSPORTATION STUDY
 CITY OF CUYAHOGA FALLS, OH
 2021 / 2041 - AM PEAK VOLUMES
 NOT TO SCALE



LEGEND

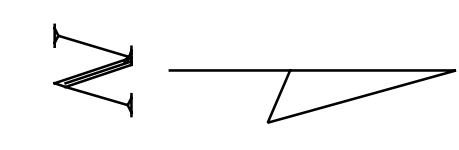
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(XXX) = 2041 DESIGN YEAR.



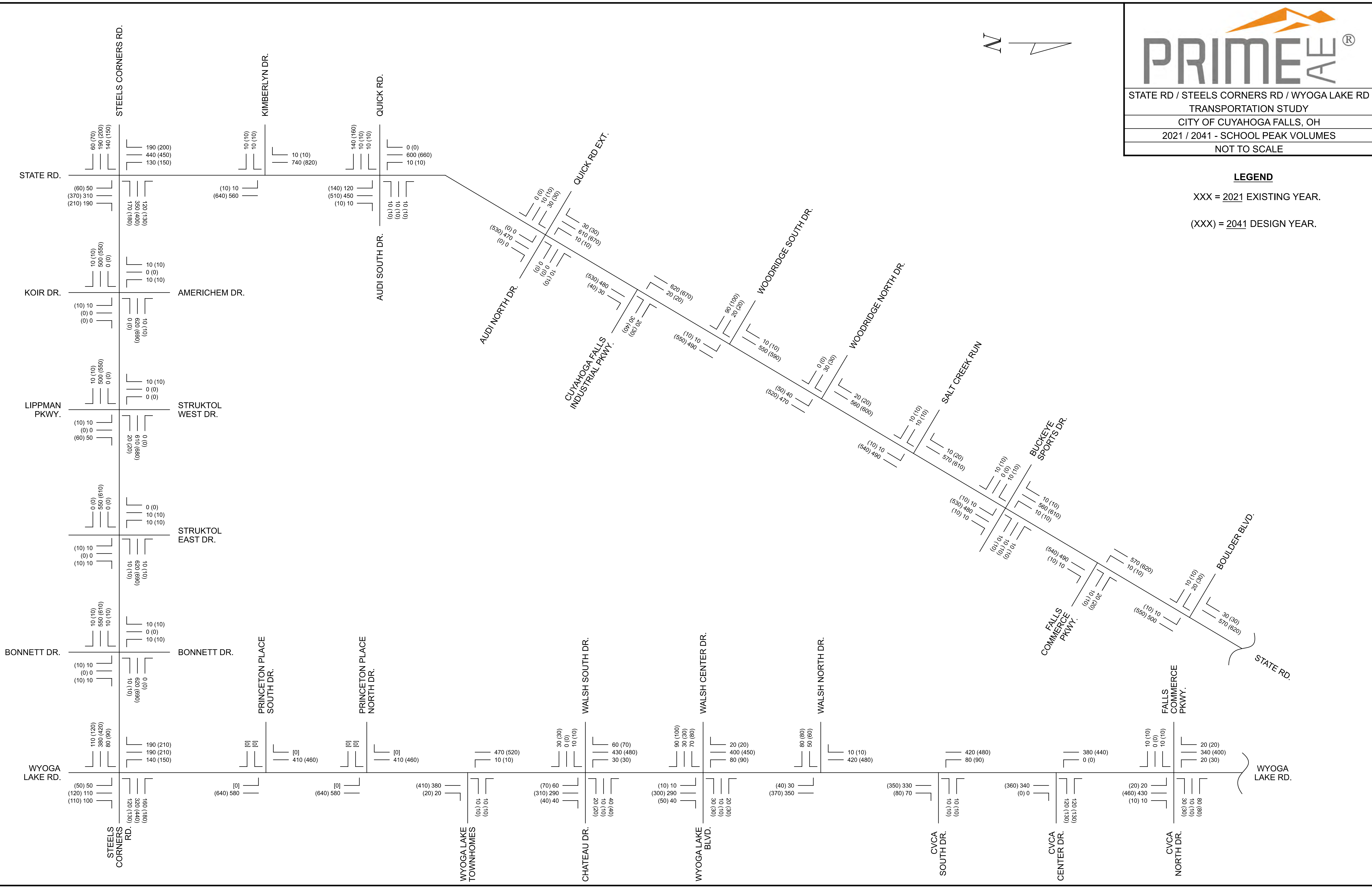


STATE RD / STEELS CORNERS RD / WYOGA LAKE RD
TRANSPORTATION STUDY
CITY OF CUYAHOGA FALLS, OH
2021 / 2041 - SCHOOL PEAK VOLUMES
NOT TO SCALE



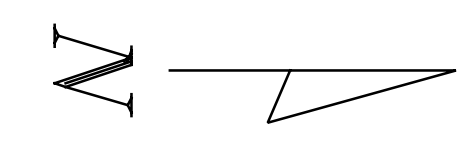
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XXX = 2021 EXISTING YEAR.
(XXX) = 2041 DESIGN YEAR.





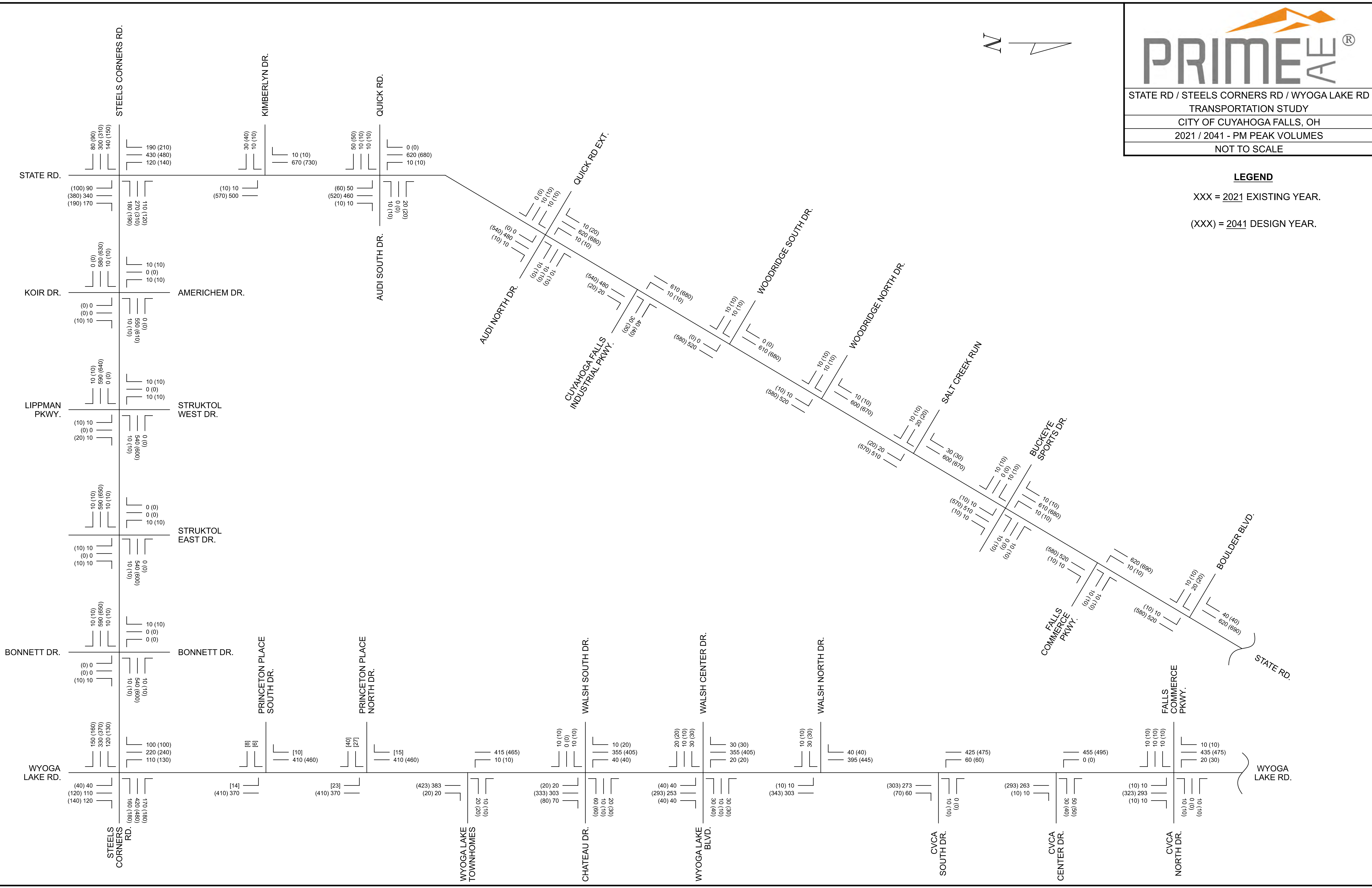
STATE RD / STEELS CORNERS RD / WYOGA LAKE RD
TRANSPORTATION STUDY
CITY OF CUYAHOGA FALLS, OH
2021 / 2041 - PM PEAK VOLUMES
NOT TO SCALE



LEGEND

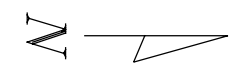
XXX = 2021 EXISTING YEAR.

(XXX) = 2041 DESIGN YEAR.





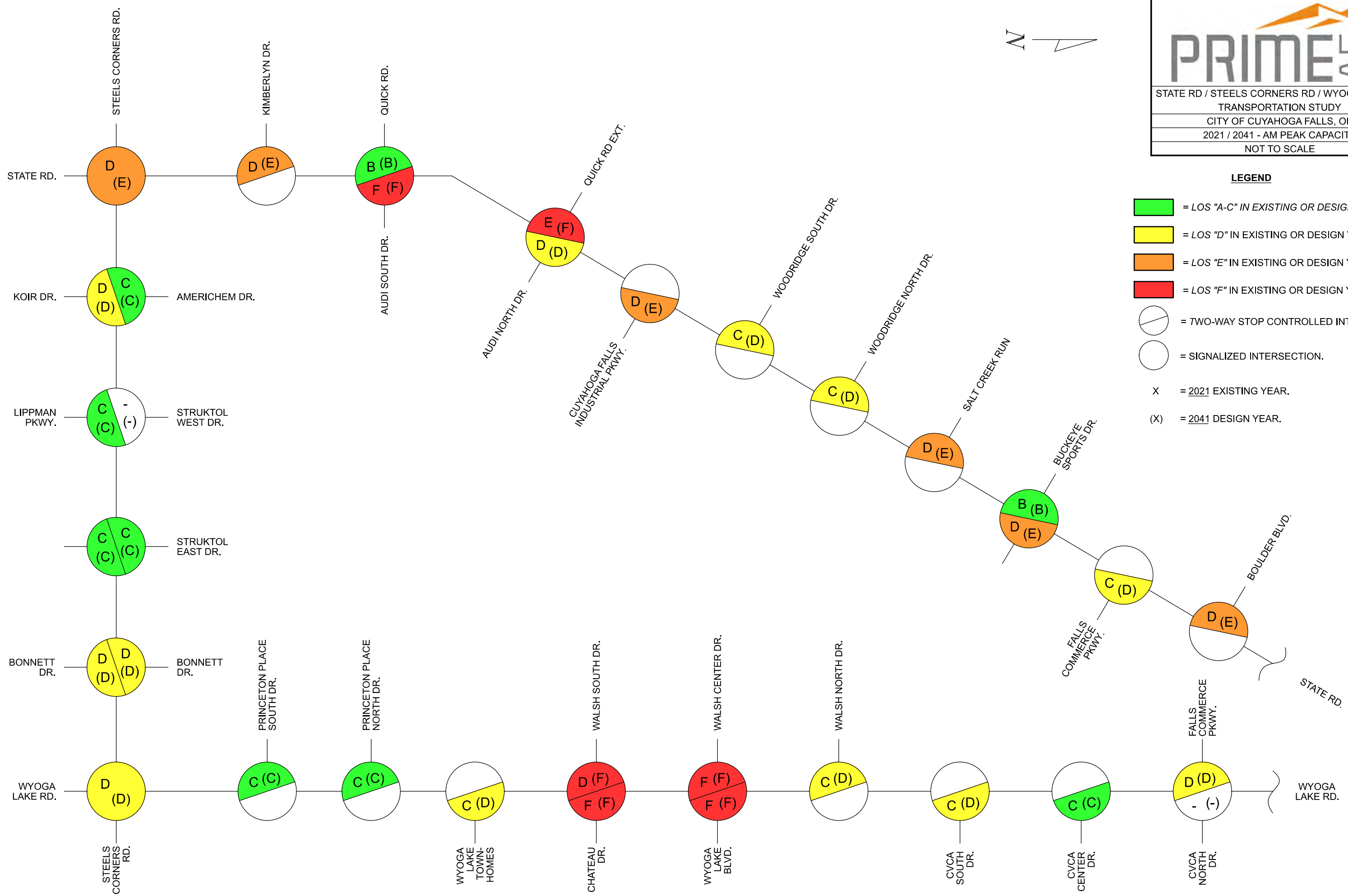


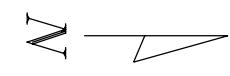
APPENDIX H FUTURE CONDITIONS CAPACITY ANALYSIS





LEGEND

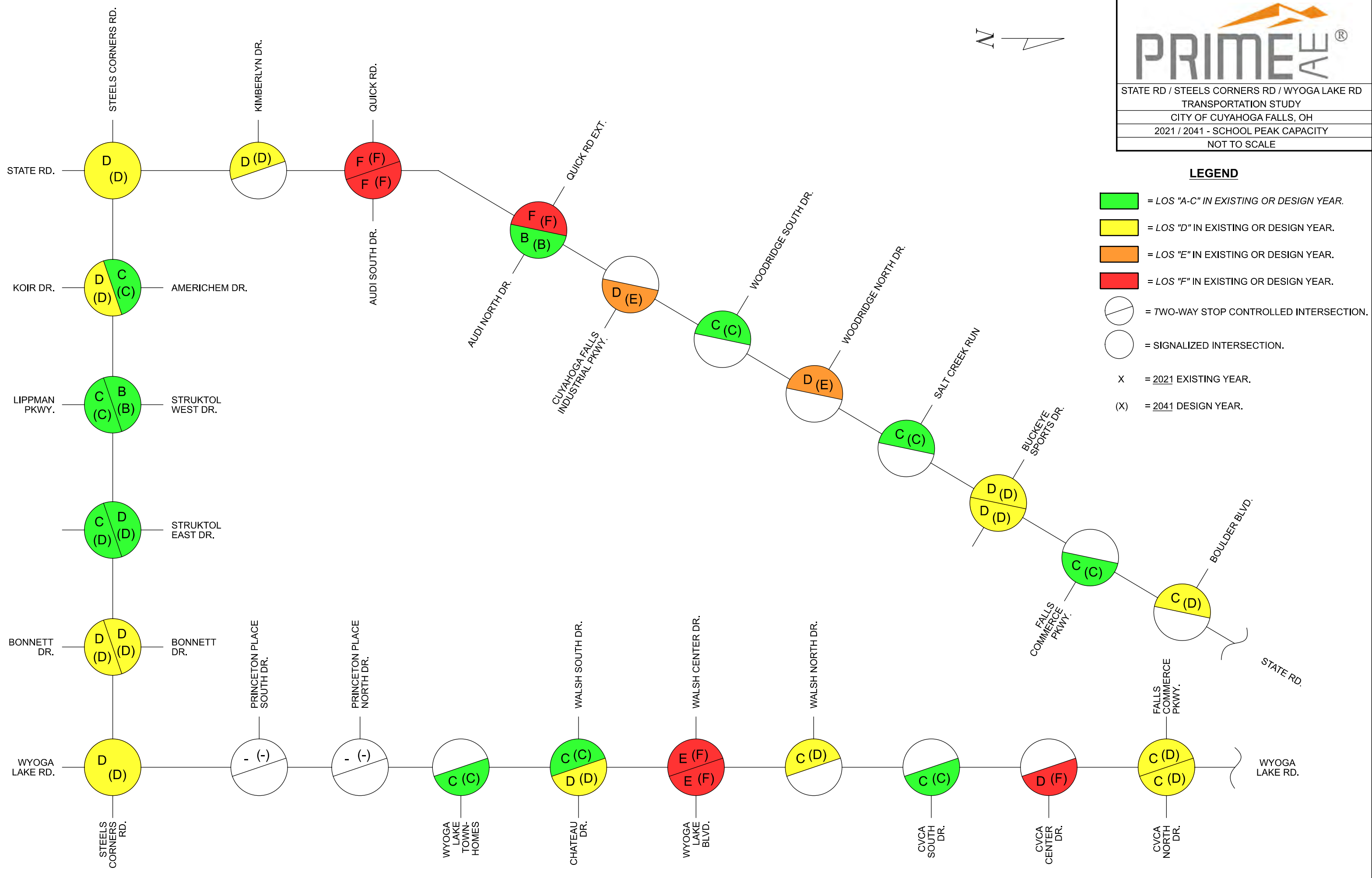
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- = LOS "D" IN EXISTING OR DESIGN YEAR.
- = LOS "E" IN EXISTING OR DESIGN YEAR.
- = LOS "F" IN EXISTING OR DESIGN YEAR.
-  = TWO-WAY STOP CONTROLLED INTERSECTION.
-  = SIGNALIZED INTERSECTION.
- X = 2021 EXISTING YEAR.
- (X) = 2041 DESIGN YEAR.

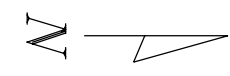






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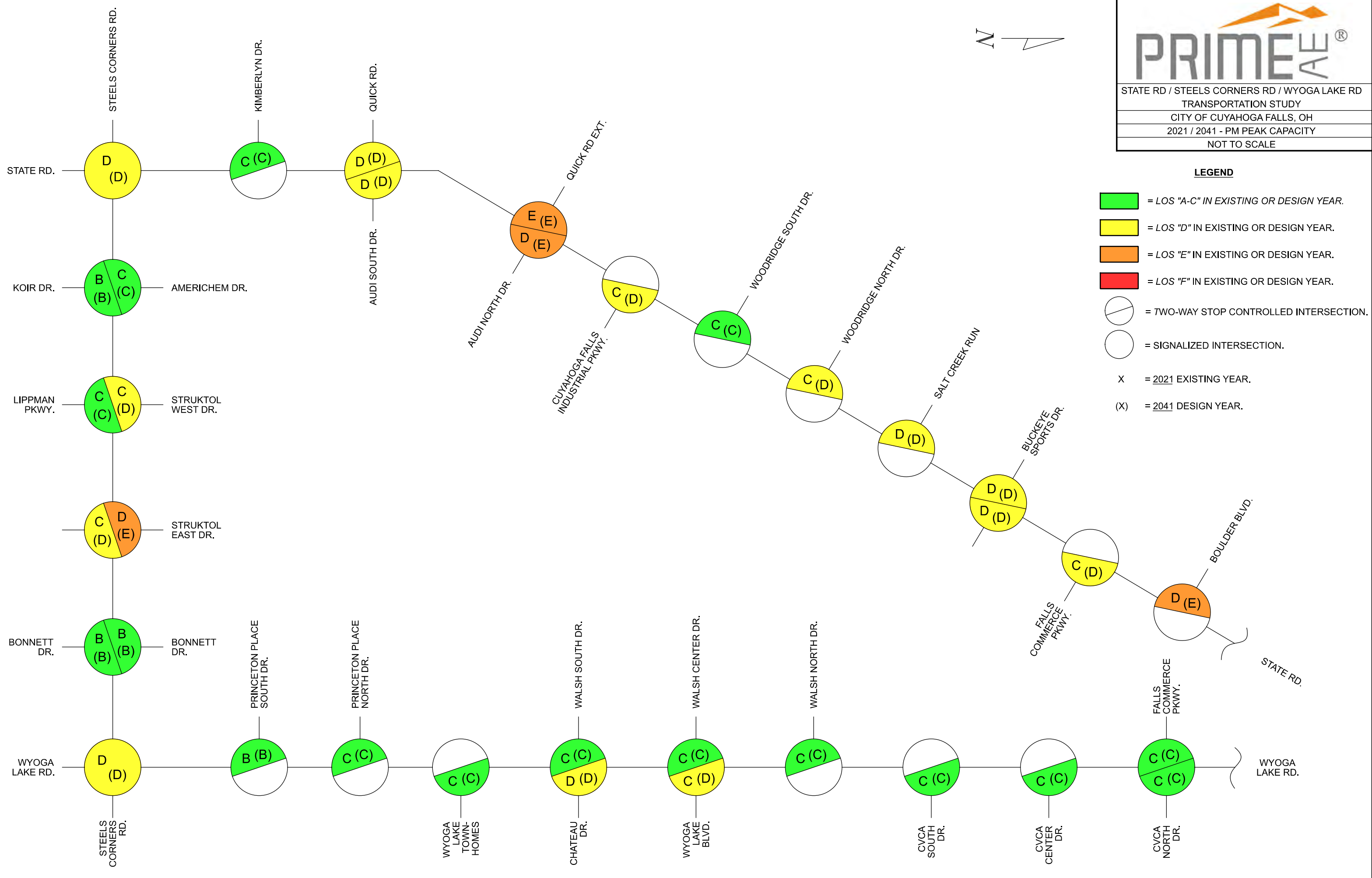
- = LOS "A-C" IN EXISTING OR DESIGN YEAR.
- = LOS "D" IN EXISTING OR DESIGN YEAR.
- = LOS "E" IN EXISTING OR DESIGN YEAR.
- = LOS "F" IN EXISTING OR DESIGN YEAR.
-  = TWO-WAY STOP CONTROLLED INTERSECTION.
-  = SIGNALIZED INTERSECTION.
- X = 2021 EXISTING YEAR.
- (X) = 2041 DESIGN YEAR.





LEGEND

- = LOS "A-C" IN EXISTING OR DESIGN YEAR.
- = LOS "D" IN EXISTING OR DESIGN YEAR.
- = LOS "E" IN EXISTING OR DESIGN YEAR.
- = LOS "F" IN EXISTING OR DESIGN YEAR.
-  = TWO-WAY STOP CONTROLLED INTERSECTION.
-  = SIGNALIZED INTERSECTION.
- X = 2021 EXISTING YEAR.
- (X) = 2041 DESIGN YEAR.



HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

1_2041 AM Peak
 Design Year - No Build

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	350	250	130	280	230	50	400	110	100	330	130
Future Volume (veh/h)	310	350	250	130	280	230	50	400	110	100	330	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	388	438	312	160	346	284	57	455	125	125	412	162
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.88	0.88	0.88	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	417	393	280	186	646	652	201	503	526	200	520	623
Arrive On Green	0.12	0.39	0.39	0.07	0.35	0.35	0.05	0.26	0.26	0.07	0.28	0.28
Sat Flow, veh/h	1781	1016	724	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	388	0	750	160	346	284	57	455	125	125	412	162
Grp Sat Flow(s),veh/h/ln	1781	0	1740	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	15.0	0.0	50.4	7.5	19.4	16.7	3.0	29.5	7.5	6.6	26.6	9.0
Cycle Q Clear(g_c), s	15.0	0.0	50.4	7.5	19.4	16.7	3.0	29.5	7.5	6.6	26.6	9.0
Prop In Lane	1.00		0.42	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	417	0	673	186	646	652	201	503	526	200	520	623
V/C Ratio(X)	0.93	0.00	1.11	0.86	0.54	0.44	0.28	0.91	0.24	0.62	0.79	0.26
Avail Cap(c_a), veh/h	417	0	673	260	646	652	322	672	664	287	646	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	40.0	32.0	34.3	27.5	34.9	46.8	31.6	35.9	43.6	26.7
Incr Delay (d2), s/veh	27.3	0.0	70.4	16.5	3.2	2.1	0.6	12.2	0.2	2.4	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	34.1	4.0	9.3	6.7	1.3	15.8	2.9	3.0	12.9	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	0.0	110.4	48.5	37.4	29.6	35.4	59.0	31.7	38.2	48.5	26.9
LnGrp LOS	E	A	F	D	D	C	D	E	C	D	D	C
Approach Vol, veh/h		1138			790			637			699	
Approach Delay, s/veh		93.0			36.9			51.5			41.7	
Approach LOS		F			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.6	57.4	13.1	43.2	22.0	52.0	15.7	40.7				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	9.5	52.4	5.0	28.6	17.0	21.4	8.6	31.5				
Green Ext Time (p_c), s	0.1	0.0	0.0	2.2	0.0	2.4	0.1	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			60.3									
HCM 6th LOS			E									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

1_2041 AM Peak
Design Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	280	70	70	450	160	90	150	70	100	130	110
Future Volume (veh/h)	200	280	70	70	450	160	90	150	70	100	130	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	250	350	88	83	536	190	112	188	88	125	162	138
Peak Hour Factor	0.80	0.80	0.80	0.84	0.84	0.84	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	713	179	453	573	203	214	239	112	240	191	163
Arrive On Green	0.10	0.49	0.49	0.05	0.43	0.43	0.07	0.20	0.20	0.07	0.20	0.20
Sat Flow, veh/h	1781	1442	363	1781	1319	467	1781	1205	564	1781	933	795
Grp Volume(v), veh/h	250	0	438	83	0	726	112	0	276	125	0	300
Grp Sat Flow(s),veh/h/ln	1781	0	1805	1781	0	1786	1781	0	1769	1781	0	1727
Q Serve(g_s), s	10.8	0.0	20.4	3.2	0.0	48.7	6.2	0.0	18.6	6.9	0.0	21.0
Cycle Q Clear(g_c), s	10.8	0.0	20.4	3.2	0.0	48.7	6.2	0.0	18.6	6.9	0.0	21.0
Prop In Lane	1.00		0.20	1.00		0.26	1.00		0.32	1.00		0.46
Lane Grp Cap(c), veh/h	278	0	892	453	0	776	214	0	352	240	0	354
V/C Ratio(X)	0.90	0.00	0.49	0.18	0.00	0.94	0.52	0.00	0.79	0.52	0.00	0.85
Avail Cap(c_a), veh/h	375	0	892	656	0	852	381	0	352	396	0	354
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	21.3	18.6	0.0	33.9	38.2	0.0	47.8	37.6	0.0	48.1
Incr Delay (d2), s/veh	18.1	0.0	0.9	0.1	0.0	17.6	1.5	0.0	16.0	1.3	0.0	21.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	8.7	1.3	0.0	24.2	2.8	0.0	9.7	3.1	0.0	11.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	0.0	22.2	18.7	0.0	51.4	39.7	0.0	63.9	38.9	0.0	69.6
LnGrp LOS	D	A	C	B	A	D	D	A	E	D	A	E
Approach Vol, veh/h		688			809			388				425
Approach Delay, s/veh		32.4			48.1			56.9				60.6
Approach LOS		C			D			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	68.2	14.2	31.8	19.2	60.7	15.0	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	5.2	22.4	8.2	23.0	12.8	50.7	8.9	20.6				
Green Ext Time (p_c), s	0.1	3.7	0.1	0.3	0.3	4.0	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay												47.2
HCM 6th LOS												D

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	10	20	920	550	10
Future Vol, veh/h	10	10	20	920	550	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	25	1150	688	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1895	695	701	0	-	0
Stage 1	695	-	-	-	-	-
Stage 2	1200	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	77	442	896	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	75	442	896	-	-	-
Mov Cap-2 Maneuver	75	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	285	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.8	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	896	-	128	-	-
HCM Lane V/C Ratio	0.028	-	0.195	-	-
HCM Control Delay (s)	9.1	-	39.8	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection										
Int Delay, s/veh	3.5									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	10	10	170	750	10	10	460	0	0	90
Future Vol, veh/h	10	10	170	750	10	10	460	0	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	84	84	84	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	202	893	12	13	575	0	0	113

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1961	899	575	0
Stage 1	1303	-	-	-
Stage 2	658	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	48	338	998	-
Stage 1	197	-	-	-
Stage 2	453	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	31	338	998	-
Mov Cap-2 Maneuver	31	-	-	-
Stage 1	157	-	-	-
Stage 2	348	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	110.4	1.7	0.2	13.9
HCM LOS	F			B

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	998	-	-	57	518	752
HCM Lane V/C Ratio	0.203	-	-	0.439	0.217	0.017
HCM Control Delay (s)	9.5	-	-	110.4	13.9	9.9
HCM Lane LOS	A	-	-	F	B	A
HCM 95th %tile Q(veh)	0.8	-	-	1.7	0.8	0.1

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	20	0	0	10	0	10	0	750	10	10	460	10
Future Vol, veh/h	20	0	0	10	0	10	0	750	10	10	460	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	81	81	81	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	0	0	13	0	13	0	926	12	12	554	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1523	1522	560	1516	1522	932	566	0	0	938	0	0
Stage 1	584	584	-	932	932	-	-	-	-	-	-	-
Stage 2	939	938	-	584	590	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	97	118	528	98	118	323	1006	-	-	730	-	-
Stage 1	498	498	-	320	345	-	-	-	-	-	-	-
Stage 2	317	343	-	498	495	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	92	116	528	97	116	323	1006	-	-	730	-	-
Mov Cap-2 Maneuver	92	116	-	97	116	-	-	-	-	-	-	-
Stage 1	498	490	-	320	345	-	-	-	-	-	-	-
Stage 2	305	343	-	490	487	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	58.1		34		0		0.2	
HCM LOS	F		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1006	-	-	92	149	730	-	-
HCM Lane V/C Ratio	-	-	-	0.272	0.168	0.017	-	-
HCM Control Delay (s)	0	-	-	58.1	34	10	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.6	0.1	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	10	720	60	20	440
Future Vol, veh/h	30	10	720	60	20	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	900	75	25	550

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1538	938	0	0	975
Stage 1	938	-	-	-	-
Stage 2	600	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	127	321	-	-	707
Stage 1	381	-	-	-	-
Stage 2	548	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	121	321	-	-	707
Mov Cap-2 Maneuver	121	-	-	-	-
Stage 1	381	-	-	-	-
Stage 2	520	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.1	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	143	707
HCM Lane V/C Ratio	-	-	0.35	0.035
HCM Control Delay (s)	-	-	43.1	10.3
HCM Lane LOS	-	-	E	B
HCM 95th %tile Q(veh)	-	-	1.4	0.1

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	20	720	450	10
Future Vol, veh/h	10	10	20	720	450	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	81	81	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	25	889	563	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1509	570	576	0	-	0
Stage 1	570	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	133	521	997	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	521	997	-	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.2	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	997	-	203	-	-
HCM Lane V/C Ratio	0.025	-	0.123	-	-
HCM Control Delay (s)	8.7	0	25.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	720	450	40
Future Vol, veh/h	10	10	10	720	450	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	13	900	563	50

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1514	588	613	0	-	0
Stage 1	588	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	132	509	966	-	-	-
Stage 1	555	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	128	509	966	-	-	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	205	-	-
HCM Lane V/C Ratio	0.013	-	0.122	-	-
HCM Control Delay (s)	8.8	0	25	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	40	10	10	720	480	10
Future Vol, veh/h	40	10	10	720	480	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	13	13	900	600	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1533	607	613	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	128	496	966	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	496	966	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	386	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	46.5	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	966	-	147	-	-
HCM Lane V/C Ratio	0.013	-	0.425	-	-
HCM Control Delay (s)	8.8	0	46.5	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.9	-	-

Intersection												
Int Delay, s/veh	0.7											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	10	10	0	10	10	740	10	0	470	10
Future Vol, veh/h	0	0	10	10	0	10	10	740	10	0	470	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	13	13	0	13	13	925	13	0	588	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1559	1559	595	1559	1559	932	601	0	0	-	-	0
Stage 1	595	595	-	958	958	-	-	-	-	-	-	-
Stage 2	964	964	-	601	601	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	91	112	504	91	112	323	976	-	-	0	-	-
Stage 1	491	492	-	309	336	-	-	-	-	0	-	-
Stage 2	307	334	-	487	489	-	-	-	-	0	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	86	109	504	87	109	323	976	-	-	-	-	-
Mov Cap-2 Maneuver	86	109	-	87	109	-	-	-	-	-	-	-
Stage 1	477	492	-	300	327	-	-	-	-	-	-	-
Stage 2	287	325	-	475	489	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW				
HCM Control Delay, s	12.3		37.1		0.1		0				
HCM LOS	B		E								

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWT	SWR
Capacity (veh/h)	976	-	-	137	504	-
HCM Lane V/C Ratio	0.013	-	-	0.182	0.025	-
HCM Control Delay (s)	8.7	0	-	37.1	12.3	-
HCM Lane LOS	A	A	-	E	B	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	-

Intersection						
Int Delay, s/veh	0.5					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	10	740	10	10	460
Future Vol, veh/h	10	10	740	10	10	460
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	925	13	12	541

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1497	932	0	0	938	0
Stage 1	932	-	-	-	-	-
Stage 2	565	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	135	323	-	-	730	-
Stage 1	383	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	132	323	-	-	730	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	555	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	27.2	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	187	730
HCM Lane V/C Ratio	-	-	0.134	0.016
HCM Control Delay (s)	-	-	27.2	10
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	50	10	10	740	460	10
Future Vol, veh/h	50	10	10	740	460	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	13	11	841	575	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1445	582	588	0	-	0
Stage 1	582	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	145	513	987	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	513	987	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	413	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	45.5	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	987	-	161	-	-
HCM Lane V/C Ratio	0.012	-	0.466	-	-
HCM Control Delay (s)	8.7	0	45.5	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	2.2	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	540	10	10	620	10	0
Future Vol, veh/h	540	10	10	620	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	675	13	11	689	13	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	688	0	1393
Stage 1	-	-	-	-	682
Stage 2	-	-	-	-	711
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	906	-	156
Stage 1	-	-	-	-	502
Stage 2	-	-	-	-	487
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	906	-	153
Mov Cap-2 Maneuver	-	-	-	-	153
Stage 1	-	-	-	-	502
Stage 2	-	-	-	-	477

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	30.6
HCM LOS	D		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	153	-	-	906	-
HCM Lane V/C Ratio	0.082	-	-	0.012	-
HCM Control Delay (s)	30.6	-	-	9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	540	620	10	10	10
Future Vol, veh/h	10	540	620	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	675	689	11	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	700	0	-	0	1396 695
Stage 1	-	-	-	-	695 -
Stage 2	-	-	-	-	701 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	897	-	-	-	156 442
Stage 1	-	-	-	-	495 -
Stage 2	-	-	-	-	492 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	897	-	-	-	152 442
Mov Cap-2 Maneuver	-	-	-	-	152 -
Stage 1	-	-	-	-	484 -
Stage 2	-	-	-	-	492 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	22.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	897	-	-	-	226
HCM Lane V/C Ratio	0.014	-	-	-	0.111
HCM Control Delay (s)	9.1	0	-	-	22.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	530	10	20	630	10	10
Future Vol, veh/h	530	10	20	630	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	646	12	23	716	13	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	658	0	1414 652
Stage 1	-	-	-	-	652 -
Stage 2	-	-	-	-	762 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	930	-	152 468
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	461 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	930	-	146 468
Mov Cap-2 Maneuver	-	-	-	-	146 -
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	442 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	23.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	-	-	930	-
HCM Lane V/C Ratio	0.112	-	-	0.024	-
HCM Control Delay (s)	23.2	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	530	630	0	0	0
Future Vol, veh/h	10	530	630	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	646	716	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	716	0	0	1386	716
Stage 1	-	-	-	716	-
Stage 2	-	-	-	670	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	885	-	-	158	430
Stage 1	-	-	-	484	-
Stage 2	-	-	-	509	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	885	-	-	155	430
Mov Cap-2 Maneuver	-	-	-	155	-
Stage 1	-	-	-	474	-
Stage 2	-	-	-	509	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	885	-	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Control Delay (s)	9.1	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	520	630	20	10	10
Future Vol, veh/h	10	520	630	20	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	634	733	23	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	756	0	-	0	1403 745
Stage 1	-	-	-	-	745 -
Stage 2	-	-	-	-	658 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	855	-	-	-	154 414
Stage 1	-	-	-	-	469 -
Stage 2	-	-	-	-	515 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	855	-	-	-	151 414
Mov Cap-2 Maneuver	-	-	-	-	151 -
Stage 1	-	-	-	-	459 -
Stage 2	-	-	-	-	515 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	23.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	855	-	-	-	221
HCM Lane V/C Ratio	0.014	-	-	-	0.113
HCM Control Delay (s)	9.3	0	-	-	23.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	520	10	10	630	10	10
Future Vol, veh/h	520	10	10	630	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	634	12	12	733	13	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	646	0	1397
Stage 1	-	-	-	-	640
Stage 2	-	-	-	-	757
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	939	-	155
Stage 1	-	-	-	-	525
Stage 2	-	-	-	-	463
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	939	-	152
Mov Cap-2 Maneuver	-	-	-	-	152
Stage 1	-	-	-	-	525
Stage 2	-	-	-	-	453

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	22.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	230	-	-	939	-
HCM Lane V/C Ratio	0.109	-	-	0.012	-
HCM Control Delay (s)	22.6	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	530	0	10	640	0	10	0	10	10	0	10
Future Vol, veh/h	10	530	0	10	640	0	10	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	81	81	81	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	663	0	12	790	0	13	0	13	13	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	790	0	0	663	0	0	1510	1503	663	1510	1503	790
Stage 1	-	-	-	-	-	-	689	689	-	814	814	-
Stage 2	-	-	-	-	-	-	821	814	-	696	689	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	830	-	-	926	-	-	99	122	461	99	122	390
Stage 1	-	-	-	-	-	-	436	446	-	372	391	-
Stage 2	-	-	-	-	-	-	369	391	-	432	446	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	830	-	-	926	-	-	92	116	461	93	116	390
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	116	-	93	116	-
Stage 1	-	-	-	-	-	-	425	435	-	363	382	-
Stage 2	-	-	-	-	-	-	349	382	-	410	435	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			33.1			33.7		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	153	830	-	-	926	-	-	150
HCM Lane V/C Ratio	0.163	0.015	-	-	0.013	-	-	0.167
HCM Control Delay (s)	33.1	9.4	0	-	8.9	0	-	33.7
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.6

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	656	10	10	471
Future Vol, veh/h	20	20	656	10	10	471
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	25	820	13	13	589

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1442	827	0	0	833
Stage 1	827	-	-	-	-
Stage 2	615	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	146	371	-	-	800
Stage 1	430	-	-	-	-
Stage 2	539	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	142	371	-	-	800
Mov Cap-2 Maneuver	142	-	-	-	-
Stage 1	430	-	-	-	-
Stage 2	526	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.1	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	205	800
HCM Lane V/C Ratio	-	-	0.244	0.016
HCM Control Delay (s)	-	-	28.1	9.6
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.9	0

Intersection												
Int Delay, s/veh	11.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	30	0	80	40	0	40	90	566	20	10	361	50
Future Vol, veh/h	30	0	80	40	0	40	90	566	20	10	361	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	0	100	50	0	50	113	708	25	13	451	63

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1481	1468	483	1493	1474	708	514	0	0	733	0	0
Stage 1	509	509	-	934	934	-	-	-	-	-	-	-
Stage 2	972	959	-	559	540	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	103	128	584	102	127	435	1052	-	-	872	-	-
Stage 1	547	538	-	319	345	-	-	-	-	-	-	-
Stage 2	304	335	-	513	521	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	77	103	584	72	102	435	1052	-	-	872	-	-
Mov Cap-2 Maneuver	77	103	-	72	102	-	-	-	-	-	-	-
Stage 1	447	527	-	261	282	-	-	-	-	-	-	-
Stage 2	220	274	-	416	510	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	50.2		102		1.2		0.2	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	209	124	872	-	-
HCM Lane V/C Ratio	0.107	-	-	0.658	0.806	0.014	-	-
HCM Control Delay (s)	8.8	0	-	50.2	102	9.2	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.4	-	-	4	4.8	0	-	-

Intersection												
Int Delay, s/veh	69.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕		↕			↕			↕	
Traffic Vol, veh/h	80	10	100	30	20	120	120	506	10	20	291	50
Future Vol, veh/h	80	10	100	30	20	120	120	506	10	20	291	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	13	125	38	25	150	150	633	13	25	364	63

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1473	1392	396	1455	1417	640	427	0	0	646	0	0
Stage 1	446	446	-	940	940	-	-	-	-	-	-	-
Stage 2	1027	946	-	515	477	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	105	142	653	108	137	475	1132	-	-	939	-	-
Stage 1	591	574	-	316	342	-	-	-	-	-	-	-
Stage 2	283	340	-	543	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 48	109	653	65	105	475	1132	-	-	939	-	-
Mov Cap-2 Maneuver	~ 48	109	-	65	105	-	-	-	-	-	-	-
Stage 1	469	554	-	251	271	-	-	-	-	-	-	-
Stage 2	139	270	-	414	537	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	350.1		156.4		1.6		0.5	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1132	-	-	51	653	188	939	-	-
HCM Lane V/C Ratio	0.133	-	-	2.206	0.191	1.13	0.027	-	-
HCM Control Delay (s)	8.7	0	-	\$ 726	11.8	156.4	8.9	0	-
HCM Lane LOS	A	A	-	F	B	F	A	A	-
HCM 95th %tile Q(veh)	0.5	-	-	11.4	0.7	10.6	0.1	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	80	626	351	160
Future Vol, veh/h	10	10	80	626	351	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	100	783	439	200

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1522	539	639	0	-	0
Stage 1	539	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	130	542	945	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	106	542	945	-	-	-
Mov Cap-2 Maneuver	106	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.7	1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	945	-	177	-	-
HCM Lane V/C Ratio	0.106	-	0.141	-	-
HCM Control Delay (s)	9.3	0	28.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	10	10	516	120	70	501
Future Vol, veh/h	10	10	516	120	70	501
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	645	150	88	626

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1522	720	0	0	795
Stage 1	720	-	-	-	-
Stage 2	802	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	130	428	-	-	826
Stage 1	482	-	-	-	-
Stage 2	441	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	109	428	-	-	826
Mov Cap-2 Maneuver	109	-	-	-	-
Stage 1	482	-	-	-	-
Stage 2	369	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.1	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	174	826
HCM Lane V/C Ratio	-	-	0.144	0.106
HCM Control Delay (s)	-	-	29.1	9.9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.5	0.4

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	20	60	526	0	0	551
Future Vol, veh/h	20	60	526	0	0	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	75	658	0	0	664

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1322	658	0	0	658	0
Stage 1	658	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	173	464	-	-	930	-
Stage 1	515	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	173	464	-	-	930	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	327	930
HCM Lane V/C Ratio	-	-	0.306	-
HCM Control Delay (s)	-	-	20.8	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.3	0

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	0	0	0	10	566	10	20	541	10
Future Vol, veh/h	10	0	10	0	0	0	10	566	10	20	541	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	0	0	0	13	708	13	25	676	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1474	1480	683	1480	1480	715	689	0	0	721	0	0
Stage 1	733	733	-	741	741	-	-	-	-	-	-	-
Stage 2	741	747	-	739	739	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	105	125	449	104	125	431	905	-	-	881	-	-
Stage 1	412	426	-	408	423	-	-	-	-	-	-	-
Stage 2	408	420	-	409	424	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	99	116	449	96	116	431	905	-	-	881	-	-
Mov Cap-2 Maneuver	99	116	-	96	116	-	-	-	-	-	-	-
Stage 1	402	406	-	398	413	-	-	-	-	-	-	-
Stage 2	398	410	-	379	404	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31.2		0		0.2		0.3	
HCM LOS	D		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	905	-	-	162	-	881	-
HCM Lane V/C Ratio	0.014	-	-	0.154	-	0.028	-
HCM Control Delay (s)	9	0	-	31.2	0	9.2	0
HCM Lane LOS	A	A	-	D	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0.1	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	24	43	640	460	28
Future Vol, veh/h	16	24	43	640	460	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	26	47	696	500	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1305	515	530	0	-	0
Stage 1	515	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	177	560	1037	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	164	560	1037	-	-	-
Mov Cap-2 Maneuver	164	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.9	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	285	-	-
HCM Lane V/C Ratio	0.045	-	0.153	-	-
HCM Control Delay (s)	8.6	0	19.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	14	4	640	460	3
Future Vol, veh/h	10	14	4	640	460	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	15	4	696	500	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1206	502	503	0	-	0
Stage 1	502	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	203	569	1061	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	569	1061	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1061	-	324	-	-
HCM Lane V/C Ratio	0.004	-	0.081	-	-
HCM Control Delay (s)	8.4	0	17.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

2_2041 School Peak
 Design Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	200	70	180	400	130	60	370	210	150	450	200
Future Volume (veh/h)	150	200	70	180	400	130	60	370	210	150	450	200
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	235	82	205	455	148	73	451	256	188	562	250
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.82	0.82	0.82	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	444	155	418	646	690	157	538	582	257	594	630
Arrive On Green	0.08	0.33	0.33	0.09	0.35	0.35	0.05	0.28	0.28	0.09	0.32	0.32
Sat Flow, veh/h	1781	1325	462	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	176	0	317	205	455	148	73	451	256	188	562	250
Grp Sat Flow(s),veh/h/ln	1781	0	1787	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	8.6	0.0	19.3	10.0	28.3	7.8	3.9	29.4	16.4	10.0	39.4	15.2
Cycle Q Clear(g_c), s	8.6	0.0	19.3	10.0	28.3	7.8	3.9	29.4	16.4	10.0	39.4	15.2
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	306	0	598	418	646	690	157	538	582	257	594	630
V/C Ratio(X)	0.58	0.00	0.53	0.49	0.70	0.21	0.47	0.84	0.44	0.73	0.95	0.40
Avail Cap(c_a), veh/h	362	0	598	456	646	690	269	651	674	296	626	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	36.2	26.8	38.1	23.7	36.7	45.8	32.1	34.2	44.7	28.9
Incr Delay (d2), s/veh	1.3	0.0	3.3	0.7	6.3	0.7	1.6	7.6	0.4	7.0	22.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	8.9	4.3	14.0	3.1	1.7	15.2	6.3	4.8	21.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	0.0	39.5	27.5	44.4	24.4	38.3	53.4	32.5	41.2	67.3	29.2
LnGrp LOS	C	A	D	C	D	C	D	D	C	D	E	C
Approach Vol, veh/h		493			808			780			1000	
Approach Delay, s/veh		36.2			36.4			45.1			52.9	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	52.0	13.5	49.7	17.7	53.4	19.1	44.2				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	12.0	21.3	5.9	41.4	10.6	30.3	12.0	31.4				
Green Ext Time (p_c), s	0.1	1.5	0.1	1.3	0.1	2.3	0.1	2.5				
Intersection Summary												
HCM 6th Ctrl Delay			43.9									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

2_2041 School Peak
Design Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	420	120	130	440	180	50	120	110	150	210	210
Future Volume (veh/h)	90	420	120	130	440	180	50	120	110	150	210	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	467	133	133	449	184	61	146	134	188	262	262
Peak Hour Factor	0.90	0.90	0.90	0.98	0.98	0.98	0.82	0.82	0.82	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	545	155	247	504	207	149	206	189	328	241	241
Arrive On Green	0.05	0.39	0.39	0.06	0.40	0.40	0.05	0.23	0.23	0.10	0.28	0.28
Sat Flow, veh/h	1781	1400	399	1781	1261	517	1781	898	824	1781	858	858
Grp Volume(v), veh/h	100	0	600	133	0	633	61	0	280	188	0	524
Grp Sat Flow(s),veh/h/ln	1781	0	1799	1781	0	1777	1781	0	1722	1781	0	1716
Q Serve(g_s), s	3.6	0.0	33.3	4.8	0.0	36.2	2.8	0.0	16.3	8.5	0.0	30.6
Cycle Q Clear(g_c), s	3.6	0.0	33.3	4.8	0.0	36.2	2.8	0.0	16.3	8.5	0.0	30.6
Prop In Lane	1.00		0.22	1.00		0.29	1.00		0.48	1.00		0.50
Lane Grp Cap(c), veh/h	213	0	700	247	0	710	149	0	395	328	0	482
V/C Ratio(X)	0.47	0.00	0.86	0.54	0.00	0.89	0.41	0.00	0.71	0.57	0.00	1.09
Avail Cap(c_a), veh/h	447	0	991	461	0	979	393	0	395	481	0	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	30.5	23.7	0.0	30.5	32.4	0.0	38.6	28.1	0.0	39.1
Incr Delay (d2), s/veh	1.2	0.0	7.9	1.4	0.0	10.6	1.3	0.0	10.3	1.2	0.0	66.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	15.4	2.0	0.0	16.9	1.2	0.0	7.9	3.6	0.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	0.0	38.4	25.1	0.0	41.0	33.8	0.0	48.9	29.3	0.0	105.5
LnGrp LOS	C	A	D	C	A	D	C	A	D	C	A	F
Approach Vol, veh/h		700			766			341			712	
Approach Delay, s/veh		36.6			38.3			46.2			85.4	
Approach LOS		D			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	48.4	11.1	36.6	11.7	49.5	16.7	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	6.8	35.3	4.8	32.6	5.6	38.2	10.5	18.3				
Green Ext Time (p_c), s	0.2	5.2	0.1	0.0	0.1	5.4	0.2	0.7				
Intersection Summary												
HCM 6th Ctrl Delay				52.2								
HCM 6th LOS				D								

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	10	10	640	820	10
Future Vol, veh/h	10	10	10	640	820	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	12	744	943	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1717	949	954	0	-	0
Stage 1	949	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	99	316	720	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	97	316	720	-	-	-
Mov Cap-2 Maneuver	97	-	-	-	-	-
Stage 1	370	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.2	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	720	-	148	-	-
HCM Lane V/C Ratio	0.016	-	0.169	-	-
HCM Control Delay (s)	10.1	-	34.2	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.6	-	-

Intersection										
Int Delay, s/veh	22.7									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations	↔		↔	↔		↔	↔		↔	
Traffic Vol, veh/h	10	20	140	510	10	10	660	0	10	160
Future Vol, veh/h	10	20	140	510	10	10	660	0	10	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	87	87	87	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	25	161	586	11	13	825	0	13	200

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1872	592	825	0
Stage 1	914	-	-	-
Stage 2	958	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	55	506	805	-
Stage 1	327	-	-	-
Stage 2	309	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	18	506	805	-
Mov Cap-2 Maneuver	18	-	-	-
Stage 1	262	-	-	-
Stage 2	136	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	236.4	2.2	0.1	128.7
HCM LOS	F			F

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	805	-	-	35	211	980
HCM Lane V/C Ratio	0.2	-	-	0.714	1.066	0.013
HCM Control Delay (s)	10.6	-	-	236.4	128.7	8.7
HCM Lane LOS	B	-	-	F	F	A
HCM 95th %tile Q(veh)	0.7	-	-	2.5	10.1	0

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Vol, veh/h	30	10	0	0	0	10	0	530	0	10	670	30
Future Vol, veh/h	30	10	0	0	0	10	0	530	0	10	670	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	82	82	82	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	13	0	0	0	13	0	646	0	13	838	38

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1536	1529	857	1536	1548	646	876	0	0	646	0	0
Stage 1	883	883	-	646	646	-	-	-	-	-	-	-
Stage 2	653	646	-	890	902	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	117	357	95	114	472	771	-	-	939	-	-
Stage 1	340	364	-	460	467	-	-	-	-	-	-	-
Stage 2	456	467	-	337	356	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	91	115	357	86	112	472	771	-	-	939	-	-
Mov Cap-2 Maneuver	91	115	-	86	112	-	-	-	-	-	-	-
Stage 1	340	359	-	460	467	-	-	-	-	-	-	-
Stage 2	444	467	-	321	351	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	77.6		12.8		0		0.1	
HCM LOS	F		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	771	-	-	96	472	939	-
HCM Lane V/C Ratio	-	-	-	0.521	0.026	0.013	-
HCM Control Delay (s)	0	-	-	77.6	12.8	8.9	-
HCM Lane LOS	A	-	-	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.1	0	-

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	30	530	40	20	670
Future Vol, veh/h	40	30	530	40	20	670
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	82	82	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	37	602	45	25	838

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1513	625	0	0	647	0
Stage 1	625	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	132	485	-	-	939	-
Stage 1	534	-	-	-	-	-
Stage 2	402	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	125	485	-	-	939	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	382	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.8	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	183	939
HCM Lane V/C Ratio	-	-	0.466	0.027
HCM Control Delay (s)	-	-	40.8	8.9
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	2.2	0.1

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	100	10	550	590	10
Future Vol, veh/h	20	100	10	550	590	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	94	94	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	125	11	585	641	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1254	647	652	0	-	0
Stage 1	647	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	190	471	935	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	471	935	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	544	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	935	-	376	-	-
HCM Lane V/C Ratio	0.011	-	0.399	-	-
HCM Control Delay (s)	8.9	0	20.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	1.9	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	30	0	50	520	600	20
Future Vol, veh/h	30	0	50	520	600	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	96	96	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	52	542	706	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1364	718	730	0	-	0
Stage 1	718	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	163	429	874	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	149	429	874	-	-	-
Mov Cap-2 Maneuver	149	-	-	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	522	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.1	0.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	874	-	149	-	-
HCM Lane V/C Ratio	0.06	-	0.252	-	-
HCM Control Delay (s)	9.4	0	37.1	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	540	610	20
Future Vol, veh/h	10	10	10	540	610	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	87	87	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	11	621	735	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1390	747	759	0	-	0
Stage 1	747	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	157	413	852	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	154	413	852	-	-	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	523	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	23.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	852	-	224	-	-
HCM Lane V/C Ratio	0.013	-	0.112	-	-
HCM Control Delay (s)	9.3	0	23.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection												
Int Delay, s/veh	1.5											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	10	10	10	10	530	10	10	610	10
Future Vol, veh/h	10	0	10	10	10	10	10	530	10	10	610	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	87	87	87	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	13	13	13	11	609	11	12	726	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1406	1398	732	1400	1399	615	738	0	0	620	0	0
Stage 1	756	756	-	637	637	-	-	-	-	-	-	-
Stage 2	650	642	-	763	762	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	117	141	421	118	141	491	868	-	-	960	-	-
Stage 1	400	416	-	465	471	-	-	-	-	-	-	-
Stage 2	458	469	-	397	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	103	135	421	111	135	491	868	-	-	960	-	-
Mov Cap-2 Maneuver	103	135	-	111	135	-	-	-	-	-	-	-
Stage 1	392	407	-	456	462	-	-	-	-	-	-	-
Stage 2	426	460	-	377	405	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW	
HCM Control Delay, s	30.5		33.6		0.2		0.1	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	868	-	-	163	166	960	-
HCM Lane V/C Ratio	0.013	-	-	0.23	0.151	0.012	-
HCM Control Delay (s)	9.2	0	-	33.6	30.5	8.8	-
HCM Lane LOS	A	A	-	D	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.5	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	20	540	10	10	620
Future Vol, veh/h	10	20	540	10	10	620
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	25	614	11	11	681

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1323	620	0	0	625	0
Stage 1	620	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	172	488	-	-	956	-
Stage 1	536	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	169	488	-	-	956	-
Mov Cap-2 Maneuver	169	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	482	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	18.7	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	300	956
HCM Lane V/C Ratio	-	-	0.125	0.011
HCM Control Delay (s)	-	-	18.7	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	10	10	550	620	30
Future Vol, veh/h	30	10	10	550	620	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	11	604	689	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1332	706	722	0	-	0
Stage 1	706	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	170	436	880	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	436	880	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.4	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	880	-	197	-	-
HCM Lane V/C Ratio	0.012	-	0.254	-	-
HCM Control Delay (s)	9.1	0	29.4	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	10	0	690	10	0
Future Vol, veh/h	550	10	0	690	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	611	11	0	784	13	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	622	0	1401
Stage 1	-	-	-	-	617
Stage 2	-	-	-	-	784
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	959	-	154
Stage 1	-	-	-	-	538
Stage 2	-	-	-	-	450
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	959	-	154
Mov Cap-2 Maneuver	-	-	-	-	154
Stage 1	-	-	-	-	538
Stage 2	-	-	-	-	450

Approach	EB	WB	NB
HCM Control Delay, s	0	0	30.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	154	-	-	959	-
HCM Lane V/C Ratio	0.081	-	-	-	-
HCM Control Delay (s)	30.4	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	0	550	690	10	10	10
Future Vol, veh/h	0	550	690	10	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	88	88	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	611	784	11	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	795	0	-	0	1401 790
Stage 1	-	-	-	-	790 -
Stage 2	-	-	-	-	611 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	826	-	-	-	154 390
Stage 1	-	-	-	-	447 -
Stage 2	-	-	-	-	542 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	826	-	-	-	154 390
Mov Cap-2 Maneuver	-	-	-	-	154 -
Stage 1	-	-	-	-	447 -
Stage 2	-	-	-	-	542 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	23.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	826	-	-	-	221
HCM Lane V/C Ratio	-	-	-	-	0.113
HCM Control Delay (s)	0	-	-	-	23.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	10	20	680	10	60
Future Vol, veh/h	550	10	20	680	10	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	91	91	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	625	11	22	747	13	75

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	636	0	1422
Stage 1	-	-	-	-	631
Stage 2	-	-	-	-	791
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	947	-	150
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	447
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	947	-	144
Mov Cap-2 Maneuver	-	-	-	-	144
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	429

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	947	-
HCM Lane V/C Ratio	0.243	-	-	0.023	-
HCM Control Delay (s)	18.2	-	-	8.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	550	680	0	0	10
Future Vol, veh/h	0	550	680	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	91	91	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	625	747	0	0	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	747	0	-	0	1372 747
Stage 1	-	-	-	-	747 -
Stage 2	-	-	-	-	625 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	861	-	-	-	161 413
Stage 1	-	-	-	-	468 -
Stage 2	-	-	-	-	534 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	861	-	-	-	161 413
Mov Cap-2 Maneuver	-	-	-	-	161 -
Stage 1	-	-	-	-	468 -
Stage 2	-	-	-	-	534 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	861	-	-	-	413
HCM Lane V/C Ratio	-	-	-	-	0.03
HCM Control Delay (s)	0	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	610	690	10	10	0
Future Vol, veh/h	0	610	690	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	718	767	11	13	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	778	0	-	0	1491 773
Stage 1	-	-	-	-	773 -
Stage 2	-	-	-	-	718 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	839	-	-	-	136 399
Stage 1	-	-	-	-	455 -
Stage 2	-	-	-	-	483 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	839	-	-	-	136 399
Mov Cap-2 Maneuver	-	-	-	-	136 -
Stage 1	-	-	-	-	455 -
Stage 2	-	-	-	-	483 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	839	-	-	-	136
HCM Lane V/C Ratio	-	-	-	-	0.092
HCM Control Delay (s)	0	-	-	-	34.1
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	610	0	10	690	10	10
Future Vol, veh/h	610	0	10	690	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	718	0	11	767	13	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	718	0	1507
Stage 1	-	-	-	-	718
Stage 2	-	-	-	-	789
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	883	-	133
Stage 1	-	-	-	-	483
Stage 2	-	-	-	-	448
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	883	-	130
Mov Cap-2 Maneuver	-	-	-	-	130
Stage 1	-	-	-	-	483
Stage 2	-	-	-	-	438

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	25.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	200	-	-	883	-
HCM Lane V/C Ratio	0.125	-	-	0.013	-
HCM Control Delay (s)	25.6	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	610	10	10	690	0	10	0	10	10	0	10
Future Vol, veh/h	10	610	10	10	690	0	10	0	10	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	90	90	90	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	670	11	11	767	0	13	0	13	13	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	767	0	0	681	0	0	1494	1487	676	1493	1492	767
Stage 1	-	-	-	-	-	-	698	698	-	789	789	-
Stage 2	-	-	-	-	-	-	796	789	-	704	703	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	847	-	-	912	-	-	101	124	453	102	123	402
Stage 1	-	-	-	-	-	-	431	442	-	384	402	-
Stage 2	-	-	-	-	-	-	380	402	-	428	440	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	847	-	-	912	-	-	95	119	453	96	118	402
Mov Cap-2 Maneuver	-	-	-	-	-	-	95	119	-	96	118	-
Stage 1	-	-	-	-	-	-	422	433	-	376	394	-
Stage 2	-	-	-	-	-	-	360	394	-	407	431	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			32.2			32.6		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	157	847	-	-	912	-	-	155
HCM Lane V/C Ratio	0.159	0.013	-	-	0.012	-	-	0.161
HCM Control Delay (s)	32.2	9.3	0	-	9	0	-	32.6
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.6

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	410	20	10	520
Future Vol, veh/h	10	10	410	20	10	520
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	513	25	13	650

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1202	526	0	0	538	0
Stage 1	526	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	204	552	-	-	1030	-
Stage 1	593	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	200	552	-	-	1030	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	495	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	294	1030
HCM Lane V/C Ratio	-	-	0.085	0.012
HCM Control Delay (s)	-	-	18.4	8.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	10	0	30	20	10	40	70	310	40	30	480	70
Future Vol, veh/h	10	0	30	20	10	40	70	310	40	30	480	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	38	25	13	50	88	388	50	38	600	88

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1341	1334	644	1303	1328	388	688	0	0	438	0	0
Stage 1	720	720	-	564	564	-	-	-	-	-	-	-
Stage 2	621	614	-	739	764	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	129	154	473	138	155	660	906	-	-	1122	-	-
Stage 1	419	432	-	510	508	-	-	-	-	-	-	-
Stage 2	475	483	-	409	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	95	127	473	110	127	660	906	-	-	1122	-	-
Mov Cap-2 Maneuver	95	127	-	110	127	-	-	-	-	-	-	-
Stage 1	365	408	-	444	442	-	-	-	-	-	-	-
Stage 2	372	421	-	355	390	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.2		32.2		1.6		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	906	-	-	237	218	1122	-
HCM Lane V/C Ratio	0.097	-	-	0.211	0.401	0.033	-
HCM Control Delay (s)	9.4	0	-	24.2	32.2	8.3	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.8	1.8	0.1	-

Intersection												
Int Delay, s/veh	19.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	80	30	100	30	10	30	10	300	50	90	450	20
Future Vol, veh/h	80	30	100	30	10	30	10	300	50	90	450	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	88	88	88	90	90	90	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	100	38	125	34	11	34	11	333	56	113	563	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1208	1213	576	1266	1197	361	588	0	0	389	0	0
Stage 1	802	802	-	383	383	-	-	-	-	-	-	-
Stage 2	406	411	-	883	814	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	160	182	517	146	186	684	987	-	-	1170	-	-
Stage 1	378	396	-	640	612	-	-	-	-	-	-	-
Stage 2	622	595	-	340	391	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	127	154	517	80	157	684	987	-	-	1170	-	-
Mov Cap-2 Maneuver	127	154	-	80	157	-	-	-	-	-	-	-
Stage 1	373	339	-	631	603	-	-	-	-	-	-	-
Stage 2	572	587	-	196	335	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	86.5		56.5		0.2		1.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	987	-	-	133	517	145	1170	-	-
HCM Lane V/C Ratio	0.011	-	-	1.034	0.242	0.549	0.096	-	-
HCM Control Delay (s)	8.7	0	-	152.2	14.2	56.5	8.4	0	-
HCM Lane LOS	A	A	-	F	B	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	7.5	0.9	2.7	0.3	-	-

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	60	80	40	370	480	10
Future Vol, veh/h	60	80	40	370	480	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	100	47	430	600	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1131	607	613	0	-	0
Stage 1	607	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	225	496	966	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	211	496	966	-	-	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	509	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	314	-	-
HCM Lane V/C Ratio	0.048	-	0.557	-	-
HCM Control Delay (s)	8.9	0	30	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	3.2	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	10	10	350	80	90	480
Future Vol, veh/h	10	10	350	80	90	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	438	100	113	600

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1314	488	0	0	538
Stage 1	488	-	-	-	-
Stage 2	826	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	174	580	-	-	1030
Stage 1	617	-	-	-	-
Stage 2	430	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	145	580	-	-	1030
Mov Cap-2 Maneuver	145	-	-	-	-
Stage 1	617	-	-	-	-
Stage 2	359	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.4	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	1030
HCM Lane V/C Ratio	-	-	0.108	0.109
HCM Control Delay (s)	-	-	22.4	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0.4

Intersection						
Int Delay, s/veh	13					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	130	360	0	0	440
Future Vol, veh/h	130	130	360	0	0	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	163	450	0	0	550

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1000	450	0	0	450
Stage 1	450	-	-	-	-
Stage 2	550	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	270	609	-	-	1110
Stage 1	642	-	-	-	-
Stage 2	578	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	270	609	-	-	1110
Mov Cap-2 Maneuver	270	-	-	-	-
Stage 1	642	-	-	-	-
Stage 2	578	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	53.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	374	1110
HCM Lane V/C Ratio	-	-	0.869	-
HCM Control Delay (s)	-	-	53.2	0
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	8.4	0

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	10	0	10	30	10	80	20	460	10	30	400	20
Future Vol, veh/h	10	0	10	30	10	80	20	460	10	30	400	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	38	13	100	25	575	13	38	500	25
























Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1277	1227	513	1227	1233	582	525	0	0	588	0	0
Stage 1	589	589	-	632	632	-	-	-	-	-	-	-
Stage 2	688	638	-	595	601	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	178	561	155	177	513	1042	-	-	987	-	-
Stage 1	494	495	-	468	474	-	-	-	-	-	-	-
Stage 2	436	471	-	491	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	101	162	561	141	161	513	1042	-	-	987	-	-
Mov Cap-2 Maneuver	101	162	-	141	161	-	-	-	-	-	-	-
Stage 1	476	468	-	451	457	-	-	-	-	-	-	-
Stage 2	329	454	-	454	462	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	29.6		32		0.3		0.6	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1042	-	-	171	279	987	-
HCM Lane V/C Ratio	0.024	-	-	0.146	0.538	0.038	-
HCM Control Delay (s)	8.5	0	-	29.6	32	8.8	0
HCM Lane LOS	A	A	-	D	D	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	2.9	0.1	-

HCM 6th Signalized Intersection Summary
 3: State Rd. & Steels Corners Rd.

3_2041 PM Peak
 Design Year - No Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	310	90	190	310	120	100	380	190	140	480	210
Future Volume (veh/h)	150	310	90	190	310	120	100	380	190	140	480	210
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1945	1870	1870	1870	1870
Adj Flow Rate, veh/h	172	356	103	232	378	146	111	422	211	149	511	223
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.90	0.90	0.90	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	469	136	334	670	686	180	543	601	250	552	592
Arrive On Green	0.08	0.34	0.34	0.10	0.36	0.36	0.06	0.28	0.28	0.07	0.30	0.30
Sat Flow, veh/h	1781	1394	403	1781	1870	1585	1781	1945	1585	1781	1870	1585
Grp Volume(v), veh/h	172	0	459	232	378	146	111	422	211	149	511	223
Grp Sat Flow(s),veh/h/ln	1781	0	1798	1781	1870	1585	1781	1945	1585	1781	1870	1585
Q Serve(g_s), s	8.4	0.0	30.4	11.3	21.7	7.7	5.9	26.7	12.7	7.9	35.4	13.7
Cycle Q Clear(g_c), s	8.4	0.0	30.4	11.3	21.7	7.7	5.9	26.7	12.7	7.9	35.4	13.7
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	365	0	605	334	670	686	180	543	601	250	552	592
V/C Ratio(X)	0.47	0.00	0.76	0.69	0.56	0.21	0.62	0.78	0.35	0.60	0.93	0.38
Avail Cap(c_a), veh/h	426	0	605	356	670	686	276	655	692	317	630	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	0.0	39.5	29.0	34.5	23.7	36.0	44.3	29.7	33.7	45.7	30.5
Incr Delay (d2), s/veh	0.7	0.0	8.6	4.9	3.4	0.7	2.5	4.4	0.3	1.7	18.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	14.7	5.2	10.4	3.0	2.7	13.4	4.9	3.5	19.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	0.0	48.1	33.9	37.9	24.4	38.6	48.8	30.0	35.4	63.7	30.8
LnGrp LOS	C	A	D	C	D	C	D	D	C	D	E	C
Approach Vol, veh/h		631			756			744			883	
Approach Delay, s/veh		42.5			34.1			41.9			50.6	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.4	52.0	14.8	46.4	17.5	54.9	17.0	44.3				
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
Max Green Setting (Gmax), s	15.0	45.0	15.0	45.0	15.0	45.0	15.0	45.0				
Max Q Clear Time (g_c+I1), s	13.3	32.4	7.9	37.4	10.4	23.7	9.9	28.7				
Green Ext Time (p_c), s	0.1	1.9	0.1	2.0	0.1	2.1	0.1	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			42.6									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary
45: Wyoga Lake Rd. & Steels Corners Rd.

3_2041 PM Peak
Design Year - No Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	370	160	180	480	180	40	120	140	130	240	100
Future Volume (veh/h)	130	370	160	180	480	180	40	120	140	130	240	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	451	195	186	495	186	43	128	149	155	286	119
Peak Hour Factor	0.82	0.82	0.82	0.97	0.97	0.97	0.94	0.94	0.94	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	510	220	262	545	205	175	171	199	284	329	137
Arrive On Green	0.07	0.41	0.41	0.08	0.42	0.42	0.04	0.22	0.22	0.08	0.26	0.26
Sat Flow, veh/h	1781	1238	535	1781	1296	487	1781	788	917	1781	1254	522
Grp Volume(v), veh/h	159	0	646	186	0	681	43	0	277	155	0	405
Grp Sat Flow(s),veh/h/ln	1781	0	1774	1781	0	1783	1781	0	1705	1781	0	1776
Q Serve(g_s), s	5.9	0.0	38.8	6.8	0.0	41.2	2.1	0.0	17.5	7.6	0.0	25.1
Cycle Q Clear(g_c), s	5.9	0.0	38.8	6.8	0.0	41.2	2.1	0.0	17.5	7.6	0.0	25.1
Prop In Lane	1.00		0.30	1.00		0.27	1.00		0.54	1.00		0.29
Lane Grp Cap(c), veh/h	234	0	730	262	0	750	175	0	370	284	0	466
V/C Ratio(X)	0.68	0.00	0.88	0.71	0.00	0.91	0.25	0.00	0.75	0.55	0.00	0.87
Avail Cap(c_a), veh/h	420	0	924	430	0	928	415	0	370	443	0	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	31.4	25.1	0.0	31.3	34.5	0.0	42.2	31.7	0.0	40.6
Incr Delay (d2), s/veh	2.5	0.0	10.6	2.7	0.0	12.8	0.5	0.0	13.0	1.2	0.0	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	18.1	2.9	0.0	19.7	0.9	0.0	8.6	3.3	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	0.0	41.9	27.8	0.0	44.1	35.0	0.0	55.2	32.9	0.0	60.0
LnGrp LOS	C	A	D	C	A	D	D	A	E	C	A	E
Approach Vol, veh/h		805			867			320				560
Approach Delay, s/veh		39.2			40.6			52.5				52.5
Approach LOS		D			D			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.1	53.4	10.5	36.2	14.0	54.5	15.7	31.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	20.0	60.0	20.0	25.0	20.0	60.0	20.0	25.0				
Max Q Clear Time (g_c+I1), s	8.8	40.8	4.1	27.1	7.9	43.2	9.6	19.5				
Green Ext Time (p_c), s	0.3	5.2	0.0	0.0	0.2	5.3	0.2	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				44.3								
HCM 6th LOS				D								

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	10	40	10	570	730	10
Future Vol, veh/h	10	40	10	570	730	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	50	11	640	777	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1445	783	788	0	-	0
Stage 1	783	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	145	394	831	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	143	394	831	-	-	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	513	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.7	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	831	-	292	-	-
HCM Lane V/C Ratio	0.014	-	0.214	-	-
HCM Control Delay (s)	9.4	-	20.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection										
Int Delay, s/veh	3.2									
Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Traffic Vol, veh/h	10	0	60	520	10	10	680	0	10	50
Future Vol, veh/h	10	0	60	520	10	10	680	0	10	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	-	-	None	-	-	None	-	None
Storage Length	0	-	100	-	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	-	0	-	0	-
Peak Hour Factor	80	80	87	87	87	92	92	92	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	69	598	11	11	739	0	13	63

Major/Minor	Minor1	Major1	Major2	Minor2
Conflicting Flow All	1541	604	739	0
Stage 1	742	-	-	-
Stage 2	799	-	-	-
Critical Hdwy	7.12	6.22	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	94	498	867	-
Stage 1	408	-	-	-
Stage 2	379	-	-	-
Platoon blocked, %				
Mov Cap-1 Maneuver	68	498	867	-
Mov Cap-2 Maneuver	68	-	-	-
Stage 1	375	-	-	-
Stage 2	309	-	-	-

Approach	WB	NB	SB	SE
HCM Control Delay, s	34.3	1	0.1	32.8
HCM LOS	D			D

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SELn1	SBL	SBT
Capacity (veh/h)	867	-	-	160	215	970
HCM Lane V/C Ratio	0.08	-	-	0.234	0.407	0.011
HCM Control Delay (s)	9.5	-	-	34.3	32.8	8.8
HCM Lane LOS	A	-	-	D	D	A
HCM 95th %tile Q(veh)	0.3	-	-	0.9	1.8	0

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	10	0	10	10	10	0	540	10	10	680	20
Future Vol, veh/h	10	10	0	10	10	10	0	540	10	10	680	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	84	84	84	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	0	13	13	13	0	643	12	11	739	22

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1434	1427	750	1428	1432	649	761	0	0	655	0	0
Stage 1	772	772	-	649	649	-	-	-	-	-	-	-
Stage 2	662	655	-	779	783	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	135	411	113	134	470	851	-	-	932	-	-
Stage 1	392	409	-	458	466	-	-	-	-	-	-	-
Stage 2	451	463	-	389	404	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	100	133	411	104	132	470	851	-	-	932	-	-
Mov Cap-2 Maneuver	100	133	-	104	132	-	-	-	-	-	-	-
Stage 1	392	404	-	458	466	-	-	-	-	-	-	-
Stage 2	427	463	-	373	399	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	45.2		35.5		0		0.1	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	114	155	932	-	-
HCM Lane V/C Ratio	-	-	-	0.219	0.242	0.012	-	-
HCM Control Delay (s)	0	-	-	45.2	35.5	8.9	-	-
HCM Lane LOS	A	-	-	E	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.9	0	-	-

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	40	540	20	10	680
Future Vol, veh/h	30	40	540	20	10	680
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	87	87	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	50	621	23	11	739

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1394	633	0	0	644
Stage 1	633	-	-	-	-
Stage 2	761	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	156	480	-	-	941
Stage 1	529	-	-	-	-
Stage 2	461	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	153	480	-	-	941
Mov Cap-2 Maneuver	153	-	-	-	-
Stage 1	529	-	-	-	-
Stage 2	452	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.8	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	251	941
HCM Lane V/C Ratio	-	-	0.349	0.012
HCM Control Delay (s)	-	-	26.8	8.9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.5	0

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	10	10	0	580	680	0
Future Vol, veh/h	10	10	0	580	680	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	93	93	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	0	624	723	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1347	723	723	0	-	0
Stage 1	723	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	167	426	879	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	167	426	879	-	-	-
Mov Cap-2 Maneuver	167	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	879	-	240	-	-
HCM Lane V/C Ratio	-	-	0.104	-	-
HCM Control Delay (s)	0	-	21.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	10	10	10	580	670	10
Future Vol, veh/h	10	10	10	580	670	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	13	725	770	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1527	776	781	0	0
Stage 1	776	-	-	-	-
Stage 2	751	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	129	397	837	-	-
Stage 1	454	-	-	-	-
Stage 2	466	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	126	397	837	-	-
Mov Cap-2 Maneuver	126	-	-	-	-
Stage 1	442	-	-	-	-
Stage 2	466	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.7	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	837	-	191	-	-
HCM Lane V/C Ratio	0.015	-	0.131	-	-
HCM Control Delay (s)	9.4	0	26.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations	T			T		T
Traffic Vol, veh/h	20	10	20	570	670	30
Future Vol, veh/h	20	10	20	570	670	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	80	80	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	12	25	713	736	33

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1516	753	769	0	-	0
Stage 1	753	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	131	410	845	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	125	410	845	-	-	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	460	-	-	-	-	-

Approach	EB	NE	SW
HCM Control Delay, s	33	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NEL	NET	EBLn1	SWT	SWR
Capacity (veh/h)	845	-	163	-	-
HCM Lane V/C Ratio	0.03	-	0.214	-	-
HCM Control Delay (s)	9.4	0	33	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection												
Int Delay, s/veh	1.2											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	0	10	10	0	10	10	570	10	10	680	10
Future Vol, veh/h	10	0	10	10	0	10	10	570	10	10	680	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	13	0	13	13	713	13	11	756	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1536	1536	762	1536	1535	720	767	0	0	726	0	0
Stage 1	784	784	-	746	746	-	-	-	-	-	-	-
Stage 2	752	752	-	790	789	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95	116	405	95	116	428	847	-	-	877	-	-
Stage 1	386	404	-	405	421	-	-	-	-	-	-	-
Stage 2	402	418	-	383	402	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	89	111	405	89	111	428	847	-	-	877	-	-
Mov Cap-2 Maneuver	89	111	-	89	111	-	-	-	-	-	-	-
Stage 1	376	395	-	394	410	-	-	-	-	-	-	-
Stage 2	380	407	-	363	393	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW	
HCM Control Delay, s	34.7		34.4		0.2		0.1	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	847	-	-	147	146	877	-
HCM Lane V/C Ratio	0.015	-	-	0.17	0.171	0.013	-
HCM Control Delay (s)	9.3	0	-	34.4	34.7	9.2	-
HCM Lane LOS	A	A	-	D	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.6	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	10	10	580	10	10	690
Future Vol, veh/h	10	10	580	10	10	690
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	725	13	12	812

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1568	732	0	0	738
Stage 1	732	-	-	-	-
Stage 2	836	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	122	421	-	-	868
Stage 1	476	-	-	-	-
Stage 2	425	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	119	421	-	-	868
Mov Cap-2 Maneuver	119	-	-	-	-
Stage 1	476	-	-	-	-
Stage 2	414	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	27.3	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NERNWLn1	SWL	SWT
Capacity (veh/h)	-	-	186	868
HCM Lane V/C Ratio	-	-	0.134	0.014
HCM Control Delay (s)	-	-	27.3	9.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	580	690	40
Future Vol, veh/h	20	10	10	580	690	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	13	725	784	45

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1558	807	829	0	-	0
Stage 1	807	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	124	381	803	-	-	-
Stage 1	439	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	381	803	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	466	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35	0.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	803	-	157	-	-
HCM Lane V/C Ratio	0.016	-	0.239	-	-
HCM Control Delay (s)	9.6	0	35	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	630	0	10	610	0	10
Future Vol, veh/h	630	0	10	610	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	85	85	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	724	0	12	718	0	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	724	0	1466
Stage 1	-	-	-	-	724
Stage 2	-	-	-	-	742
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	879	-	141
Stage 1	-	-	-	-	480
Stage 2	-	-	-	-	471
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	879	-	138
Mov Cap-2 Maneuver	-	-	-	-	138
Stage 1	-	-	-	-	480
Stage 2	-	-	-	-	460

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	426	-	-	879	-
HCM Lane V/C Ratio	0.029	-	-	0.013	-
HCM Control Delay (s)	13.7	-	-	9.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	630	610	0	10	10
Future Vol, veh/h	10	630	610	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	85	85	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	724	718	0	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	718	0	-	0	1464 718
Stage 1	-	-	-	-	718 -
Stage 2	-	-	-	-	746 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	883	-	-	-	141 429
Stage 1	-	-	-	-	483 -
Stage 2	-	-	-	-	469 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	883	-	-	-	138 429
Mov Cap-2 Maneuver	-	-	-	-	138 -
Stage 1	-	-	-	-	473 -
Stage 2	-	-	-	-	469 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	24.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	883	-	-	-	209
HCM Lane V/C Ratio	0.013	-	-	-	0.12
HCM Control Delay (s)	9.1	0	-	-	24.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	640	10	10	600	10	20
Future Vol, veh/h	640	10	10	600	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	83	83	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	800	13	12	723	12	25

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	813	0	1554
Stage 1	-	-	-	-	807
Stage 2	-	-	-	-	747
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	814	-	125
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	468
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	814	-	122
Mov Cap-2 Maneuver	-	-	-	-	122
Stage 1	-	-	-	-	439
Stage 2	-	-	-	-	456

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	24.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	-	-	814	-
HCM Lane V/C Ratio	0.166	-	-	0.015	-
HCM Control Delay (s)	24.3	-	-	9.5	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	0	640	600	0	10	10
Future Vol, veh/h	0	640	600	0	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	83	83	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	800	723	0	13	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	723	0	-	0	1523 723
Stage 1	-	-	-	-	723 -
Stage 2	-	-	-	-	800 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	879	-	-	-	130 426
Stage 1	-	-	-	-	481 -
Stage 2	-	-	-	-	442 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	879	-	-	-	130 426
Mov Cap-2 Maneuver	-	-	-	-	130 -
Stage 1	-	-	-	-	481 -
Stage 2	-	-	-	-	442 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	879	-	-	-	199
HCM Lane V/C Ratio	-	-	-	-	0.126
HCM Control Delay (s)	0	-	-	-	25.7
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	10	650	600	0	10	0
Future Vol, veh/h	10	650	600	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	82	82	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	813	732	0	13	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	732	0	-	0	1571 732
Stage 1	-	-	-	-	732 -
Stage 2	-	-	-	-	839 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	873	-	-	-	122 421
Stage 1	-	-	-	-	476 -
Stage 2	-	-	-	-	424 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	873	-	-	-	119 421
Mov Cap-2 Maneuver	-	-	-	-	119 -
Stage 1	-	-	-	-	463 -
Stage 2	-	-	-	-	424 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	38.8
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	873	-	-	-	119
HCM Lane V/C Ratio	0.014	-	-	-	0.105
HCM Control Delay (s)	9.2	0	-	-	38.8
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	650	10	10	600	10	10
Future Vol, veh/h	650	10	10	600	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	82	82	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	813	13	12	732	13	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	826	0	1576
Stage 1	-	-	-	-	820
Stage 2	-	-	-	-	756
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	805	-	121
Stage 1	-	-	-	-	433
Stage 2	-	-	-	-	464
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	805	-	118
Mov Cap-2 Maneuver	-	-	-	-	118
Stage 1	-	-	-	-	433
Stage 2	-	-	-	-	452

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	28.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	180	-	-	805	-
HCM Lane V/C Ratio	0.139	-	-	0.015	-
HCM Control Delay (s)	28.2	-	-	9.5	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	650	10	10	600	10	0	0	10	0	0	10
Future Vol, veh/h	10	650	10	10	600	10	0	0	10	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	793	12	12	732	12	0	0	13	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	744	0	0	805	0	0	1592	1591	799	1592	1591	738
Stage 1	-	-	-	-	-	-	823	823	-	762	762	-
Stage 2	-	-	-	-	-	-	769	768	-	830	829	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	864	-	-	819	-	-	87	107	386	87	107	418
Stage 1	-	-	-	-	-	-	368	388	-	397	414	-
Stage 2	-	-	-	-	-	-	394	411	-	364	385	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	864	-	-	819	-	-	81	102	386	81	102	418
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	102	-	81	102	-
Stage 1	-	-	-	-	-	-	359	378	-	387	404	-
Stage 2	-	-	-	-	-	-	373	401	-	343	375	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			14.6			13.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	386	864	-	-	819	-	-	418
HCM Lane V/C Ratio	0.032	0.014	-	-	0.015	-	-	0.03
HCM Control Delay (s)	14.6	9.2	0	-	9.5	0	-	13.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	423	20	10	465
Future Vol, veh/h	20	10	423	20	10	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	481	23	12	541

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1058	493	0	0	504
Stage 1	493	-	-	-	-
Stage 2	565	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	249	576	-	-	1061
Stage 1	614	-	-	-	-
Stage 2	569	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	245	576	-	-	1061
Mov Cap-2 Maneuver	245	-	-	-	-
Stage 1	614	-	-	-	-
Stage 2	560	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.6	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	303	1061
HCM Lane V/C Ratio	-	-	0.124	0.011
HCM Control Delay (s)	-	-	18.6	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕	↕		↕	
Traffic Vol, veh/h	10	0	10	60	10	30	20	333	80	40	405	20
Future Vol, veh/h	10	0	10	60	10	30	20	333	80	40	405	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	60	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	75	13	38	24	392	94	44	450	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1062	1083	461	996	1000	392	472	0	0	486	0	0
Stage 1	549	549	-	440	440	-	-	-	-	-	-	-
Stage 2	513	534	-	556	560	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	201	217	600	223	243	657	1090	-	-	1077	-	-
Stage 1	520	516	-	596	578	-	-	-	-	-	-	-
Stage 2	544	524	-	515	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	170	199	600	204	222	657	1090	-	-	1077	-	-
Mov Cap-2 Maneuver	170	199	-	204	222	-	-	-	-	-	-	-
Stage 1	504	487	-	578	560	-	-	-	-	-	-	-
Stage 2	486	508	-	476	482	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	31	0.4	0.7
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	265	260	1077	-
HCM Lane V/C Ratio	0.022	-	-	0.094	0.481	0.041	-
HCM Control Delay (s)	8.4	0	-	20	31	8.5	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2.4	0.1	-

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	30	10	20	40	10	30	40	293	40	20	405	30
Future Vol, veh/h	30	10	20	40	10	30	40	293	40	20	405	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	13	25	50	13	38	50	366	50	22	445	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1023	1022	462	1016	1013	391	478	0	0	416	0	0
Stage 1	506	506	-	491	491	-	-	-	-	-	-	-
Stage 2	517	516	-	525	522	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	214	236	600	216	239	658	1084	-	-	1143	-	-
Stage 1	549	540	-	559	548	-	-	-	-	-	-	-
Stage 2	541	534	-	536	531	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	181	216	600	185	219	658	1084	-	-	1143	-	-
Mov Cap-2 Maneuver	181	216	-	185	219	-	-	-	-	-	-	-
Stage 1	516	526	-	525	515	-	-	-	-	-	-	-
Stage 2	468	502	-	488	517	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.3		27.2		0.9		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1084	-	-	189	600	260	1143	-	-
HCM Lane V/C Ratio	0.046	-	-	0.265	0.042	0.385	0.019	-	-
HCM Control Delay (s)	8.5	0	-	30.8	11.3	27.2	8.2	0	-
HCM Lane LOS	A	A	-	D	B	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.1	1.7	0.1	-	-

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	30	10	10	343	445	40
Future Vol, veh/h	30	10	10	343	445	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	11	385	468	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	896	489	510	0	-	0
Stage 1	489	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	311	579	1055	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	307	579	1055	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	348	-	-
HCM Lane V/C Ratio	0.011	-	0.144	-	-
HCM Control Delay (s)	8.4	0	17.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	10	0	303	70	60	475
Future Vol, veh/h	10	0	303	70	60	475
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	83	83	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	365	84	64	505

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1040	407	0	0	449
Stage 1	407	-	-	-	-
Stage 2	633	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	255	644	-	-	1111
Stage 1	672	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	235	644	-	-	1111
Mov Cap-2 Maneuver	235	-	-	-	-
Stage 1	672	-	-	-	-
Stage 2	487	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	1111
HCM Lane V/C Ratio	-	-	0.053	0.057
HCM Control Delay (s)	-	-	21.2	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	40	50	293	10	0	495
Future Vol, veh/h	40	50	293	10	0	495
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	90	90	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	63	326	11	0	538

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	870	332	0	0	337	0
Stage 1	332	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	322	710	-	-	1222	-
Stage 1	727	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	322	710	-	-	1222	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	462	1222
HCM Lane V/C Ratio	-	-	0.244	-
HCM Control Delay (s)	-	-	15.3	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	10	10	10	0	10	10	323	10	30	475	10
Future Vol, veh/h	10	10	10	10	0	10	10	323	10	30	475	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	13	13	0	13	12	380	12	33	516	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1005	1004	522	1011	1003	386	527	0	0	392	0	0
Stage 1	588	588	-	410	410	-	-	-	-	-	-	-
Stage 2	417	416	-	601	593	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	242	555	218	242	662	1040	-	-	1167	-	-
Stage 1	495	496	-	619	595	-	-	-	-	-	-	-
Stage 2	613	592	-	487	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	207	229	555	196	229	662	1040	-	-	1167	-	-
Mov Cap-2 Maneuver	207	229	-	196	229	-	-	-	-	-	-	-
Stage 1	488	476	-	610	586	-	-	-	-	-	-	-
Stage 2	592	583	-	445	473	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.3		18		0.2		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1040	-	-	273	302	1167	-
HCM Lane V/C Ratio	0.011	-	-	0.137	0.083	0.028	-
HCM Control Delay (s)	8.5	0	-	20.3	18	8.2	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0.1	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	40	23	410	460	15
Future Vol, veh/h	27	40	23	410	460	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	43	25	446	500	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1004	508	516	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	268	565	1050	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	259	565	1050	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	383	-	-
HCM Lane V/C Ratio	0.024	-	0.19	-	-
HCM Control Delay (s)	8.5	0	16.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	8	14	410	460	10
Future Vol, veh/h	6	8	14	410	460	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	9	15	446	500	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	982	506	511	0	-	0
Stage 1	506	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	276	566	1054	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	271	566	1054	-	-	-
Mov Cap-2 Maneuver	271	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	386	-	-
HCM Lane V/C Ratio	0.014	-	0.039	-	-
HCM Control Delay (s)	8.5	0	14.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

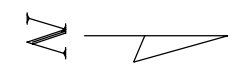


APPENDIX I

STUDY AREA TURN LANE WARRANT CHARTS

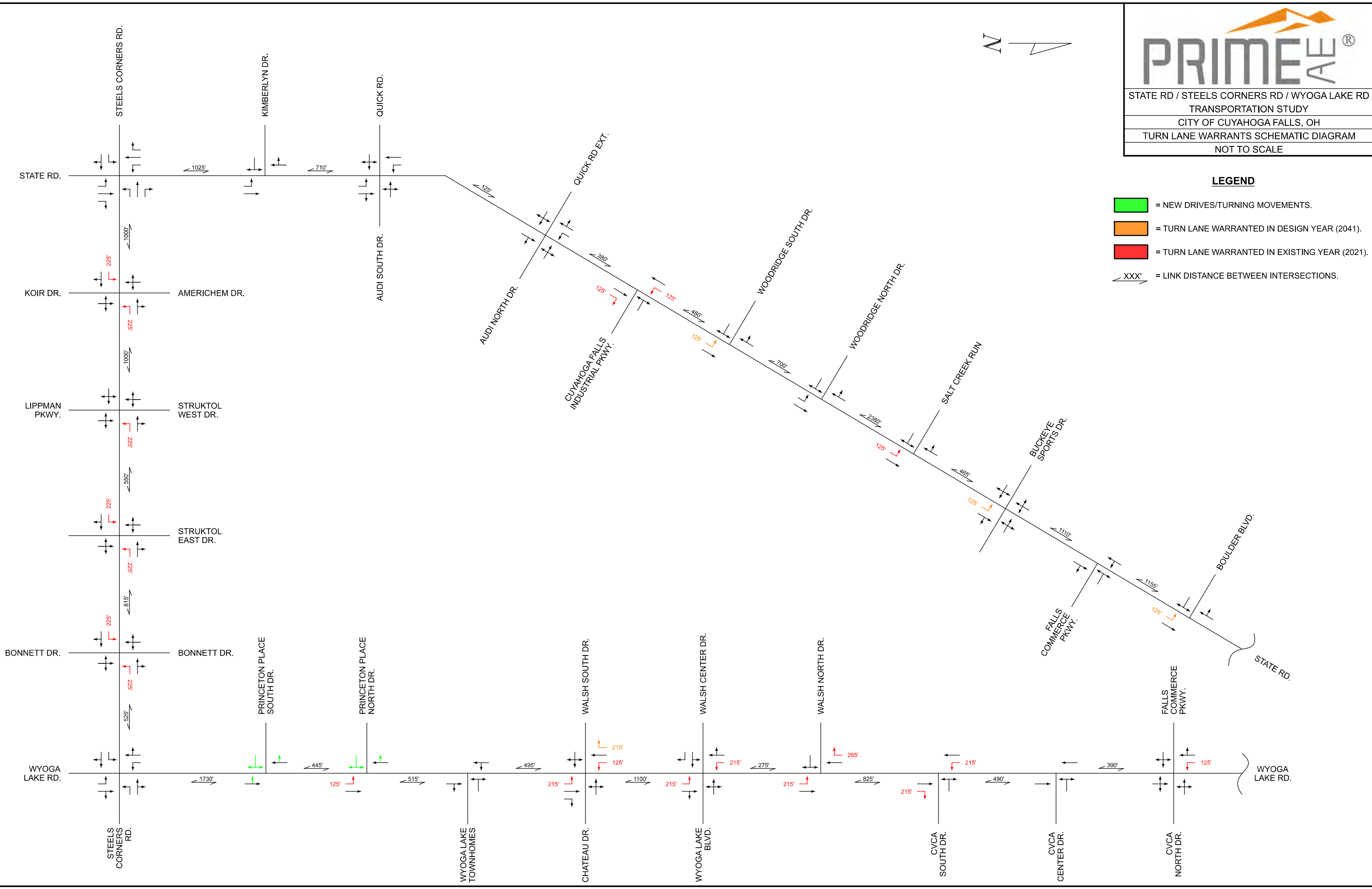


STATE RD / STEELS CORNERS RD / WYOGA LAKE RD
TRANSPORTATION STUDY
CITY OF CUYAHOGA FALLS, OH
TURN LANE WARRANTS SCHEMATIC DIAGRAM
NOT TO SCALE



LEGEND

- = NEW DRIVES/TURNING MOVEMENTS.
- = TURN LANE WARRANTED IN DESIGN YEAR (2041).
- = TURN LANE WARRANTED IN EXISTING YEAR (2021).
- = LINK DISTANCE BETWEEN INTERSECTIONS.

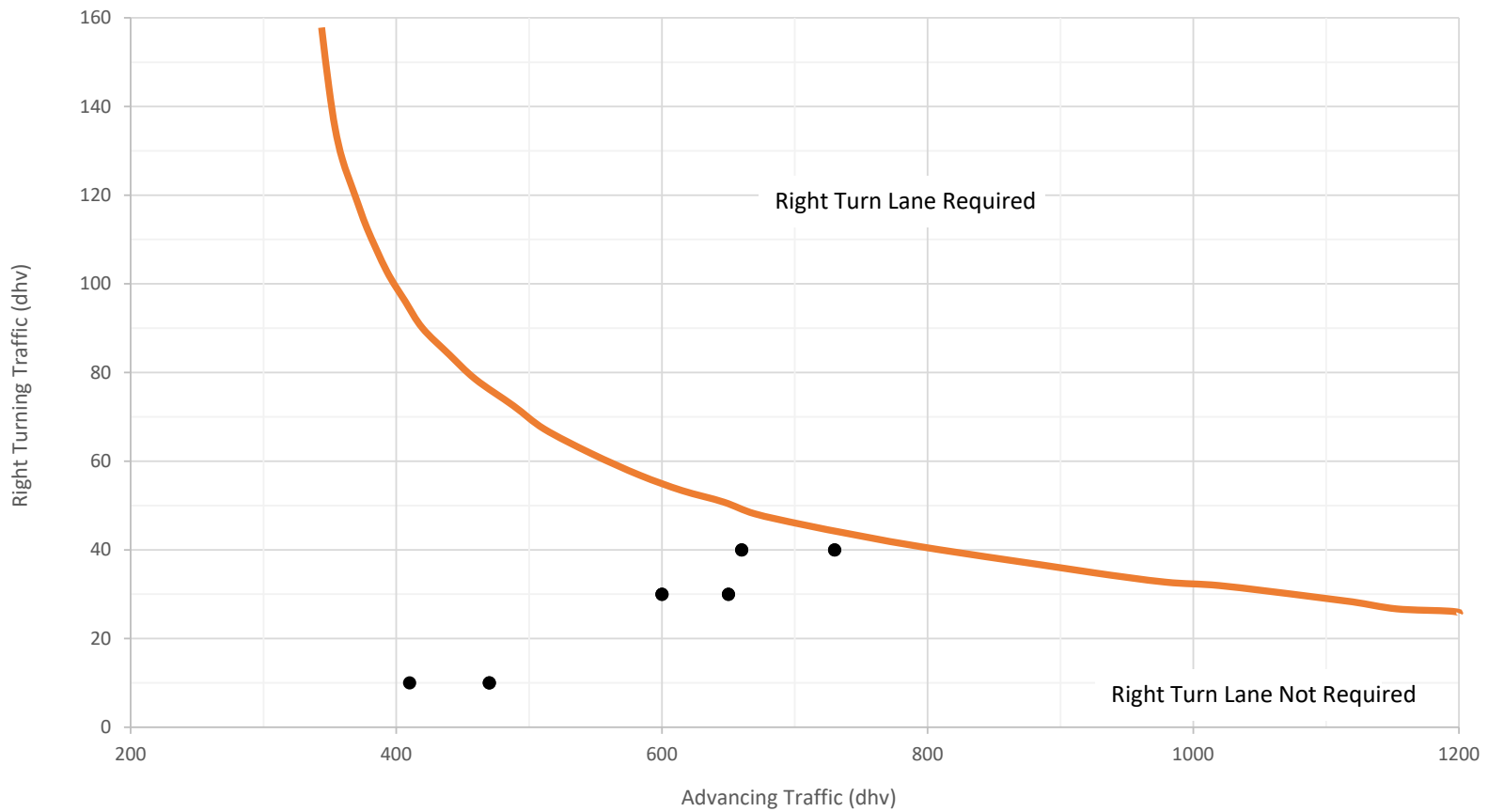


2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Boulder Blvd (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	30	30	40	40
Advancing Traffic (dhv) [Includes Right Turns]	410	470	600	650	660	730



Warrant Satisfied?

NO

NO

NO

NO

NO

NO

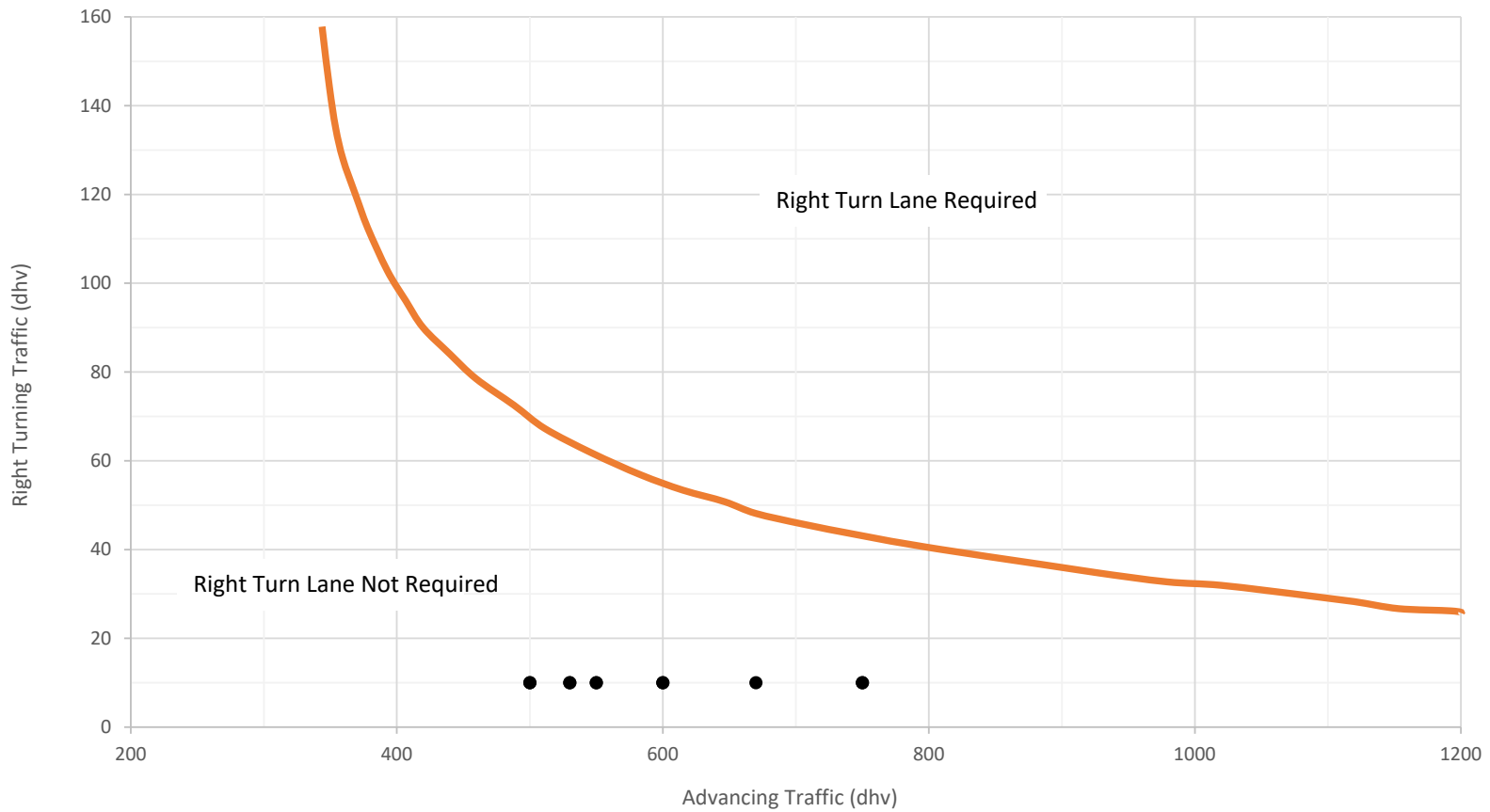
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Boulder Blvd. - NB
2021	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	10
% of Approach Volume	2%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	10
% of Approach Volume	2%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Falls Commerce Pkwy (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	670	750	500	550	530	600



Warrant Satisfied?

NO

NO

NO

NO

NO

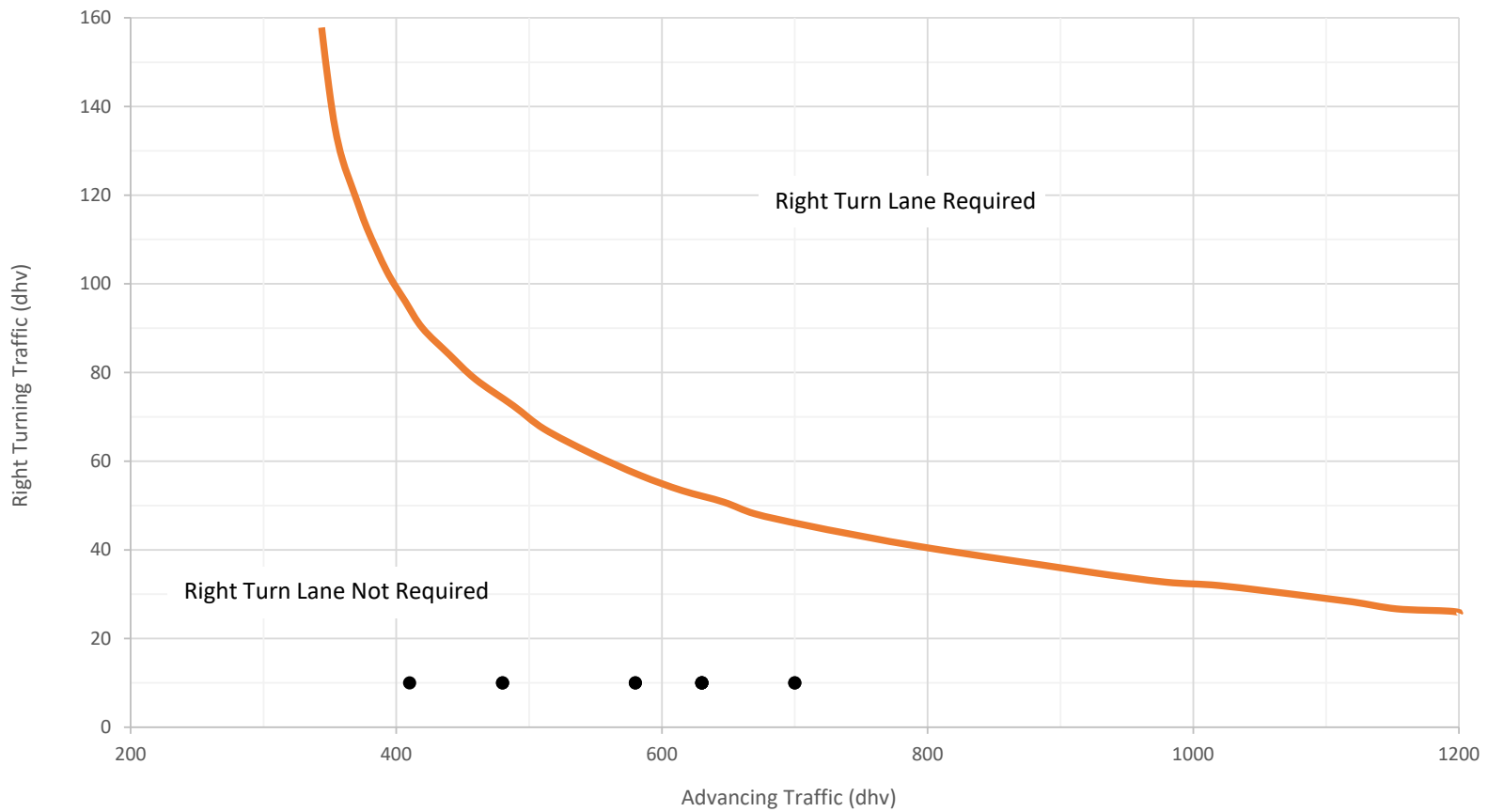
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Buckeye Sports Dr (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	410	480	580	630	630	700



Warrant Satisfied?

NO

NO

NO

NO

NO

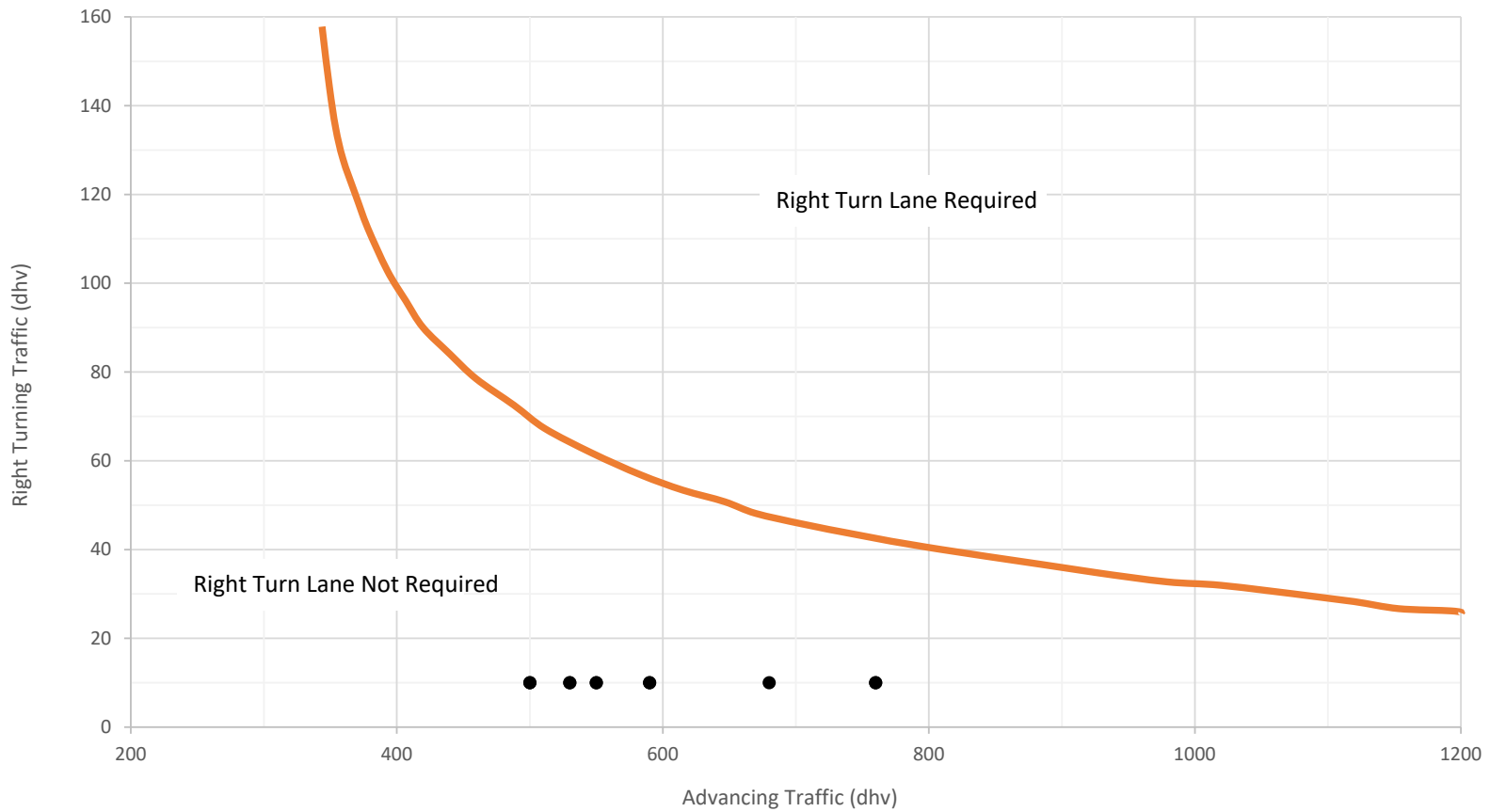
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Buckeye Sports Dr (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	680	760	500	550	530	590



Warrant Satisfied?

NO

NO

NO

NO

NO

NO

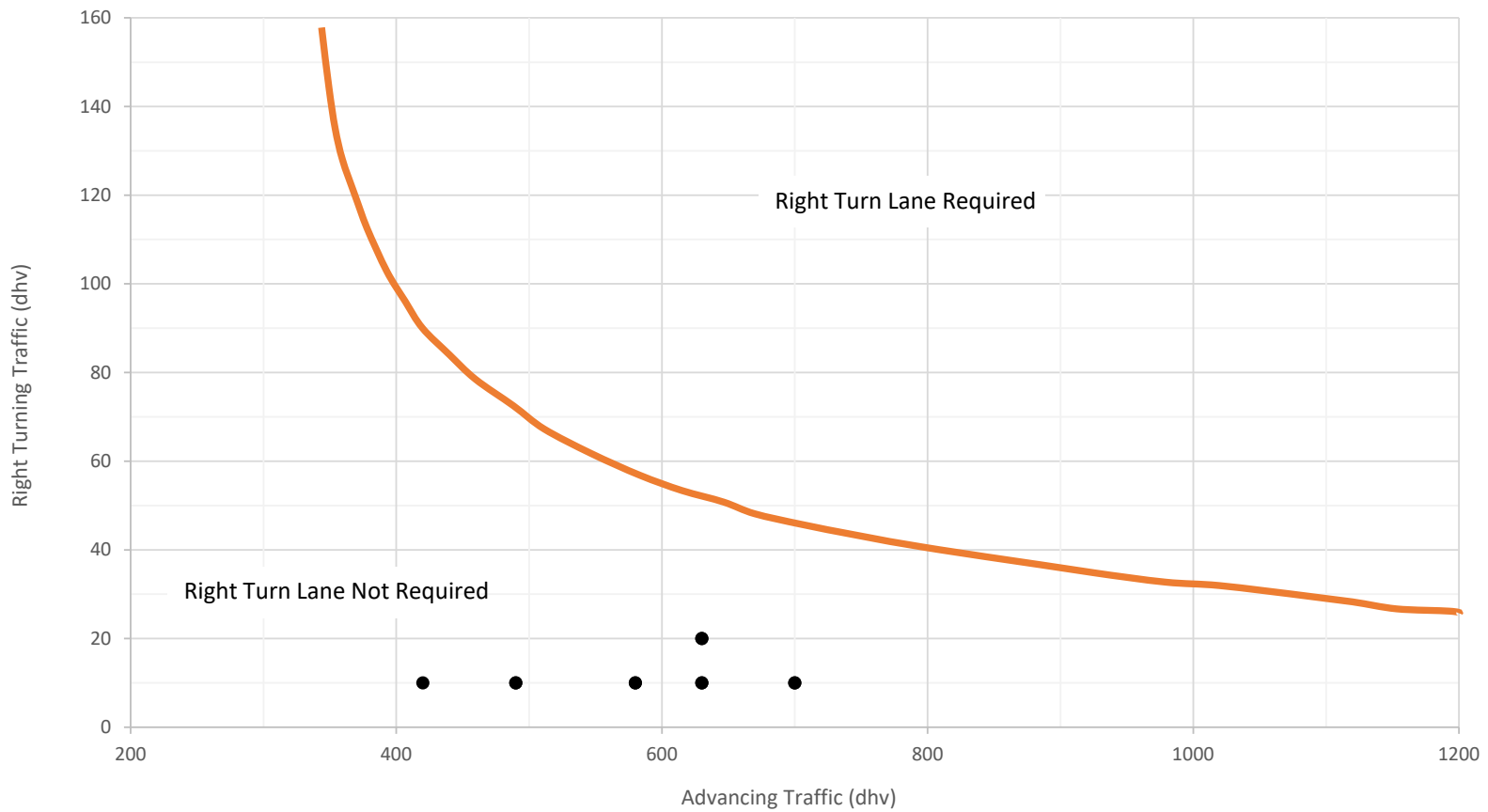
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Buckeye Sports Dr. - NB
2021	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	10
% of Approach Volume	2%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	10
% of Approach Volume	2%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Salt Creek Run (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	20	10	10
Advancing Traffic (dhv) [Includes Right Turns]	420	490	580	630	630	700



Warrant Satisfied?

NO

NO

NO

NO

NO

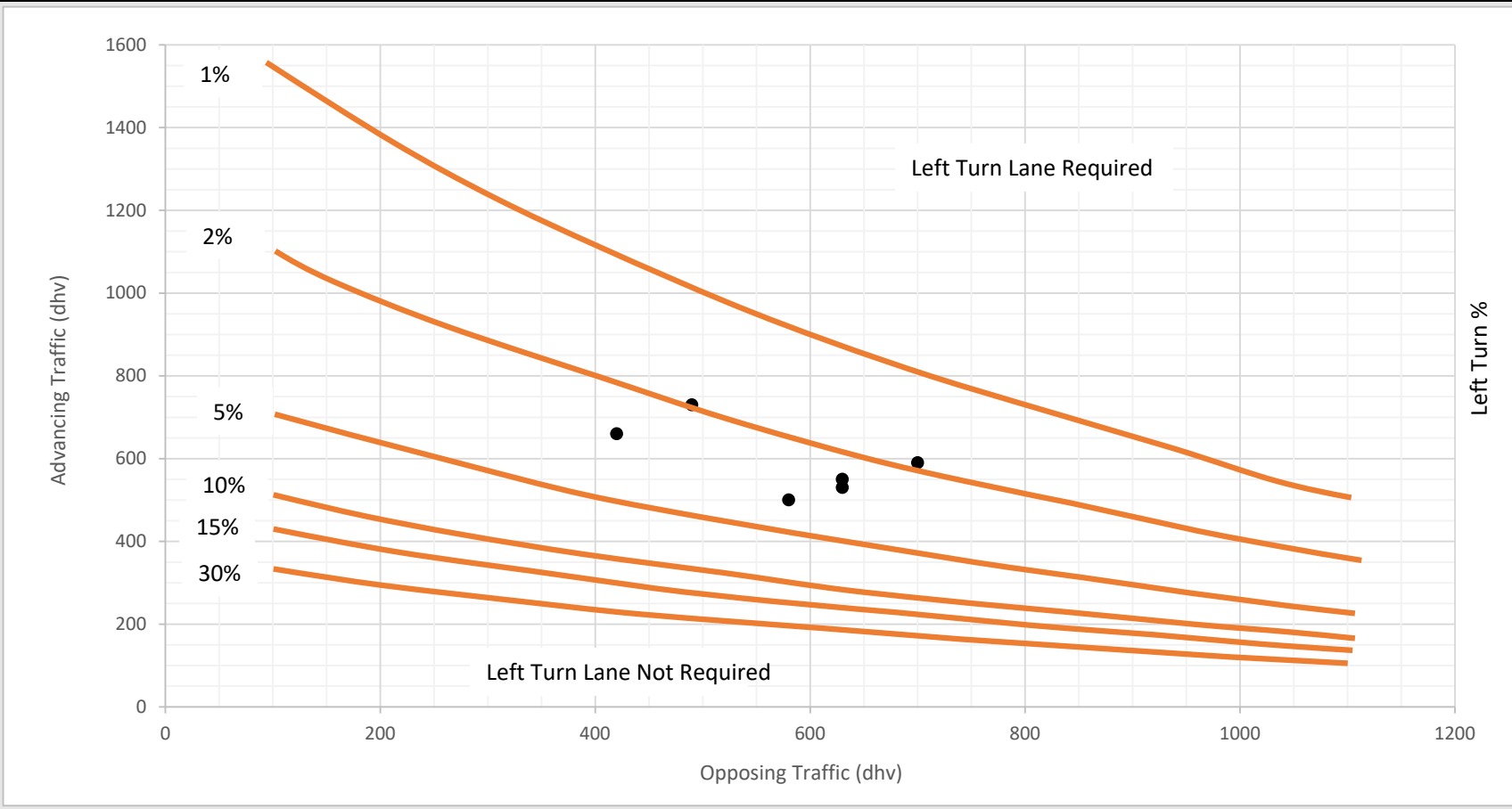
NO

2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

State Rd & Salt Creek Run (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	660	730	500	550	530	590
Opposing Traffic (dhv)	420	490	580	630	630	700
Left Turn %	2%	1%	2%	2%	4%	3%



Warrant Satisfied?	NO	NO	NO	NO	YES	YES
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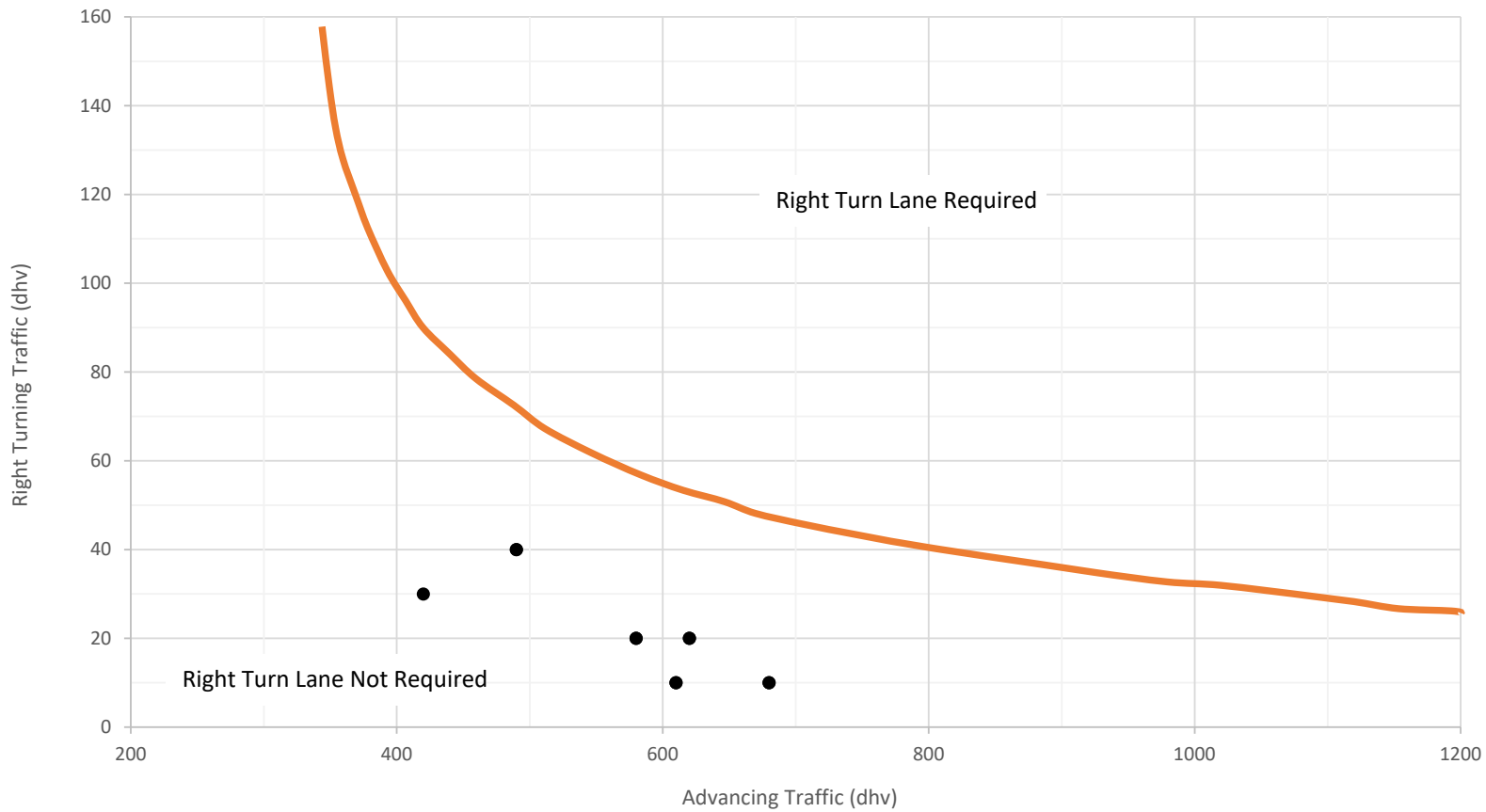
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Salt Creek Run - NB
2021	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	4%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	3%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Woodridge North Dr (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	30	40	20	20	10	10
Advancing Traffic (dhv) [Includes Right Turns]	420	490	580	620	610	680



Warrant Satisfied?

NO

NO

NO

NO

NO

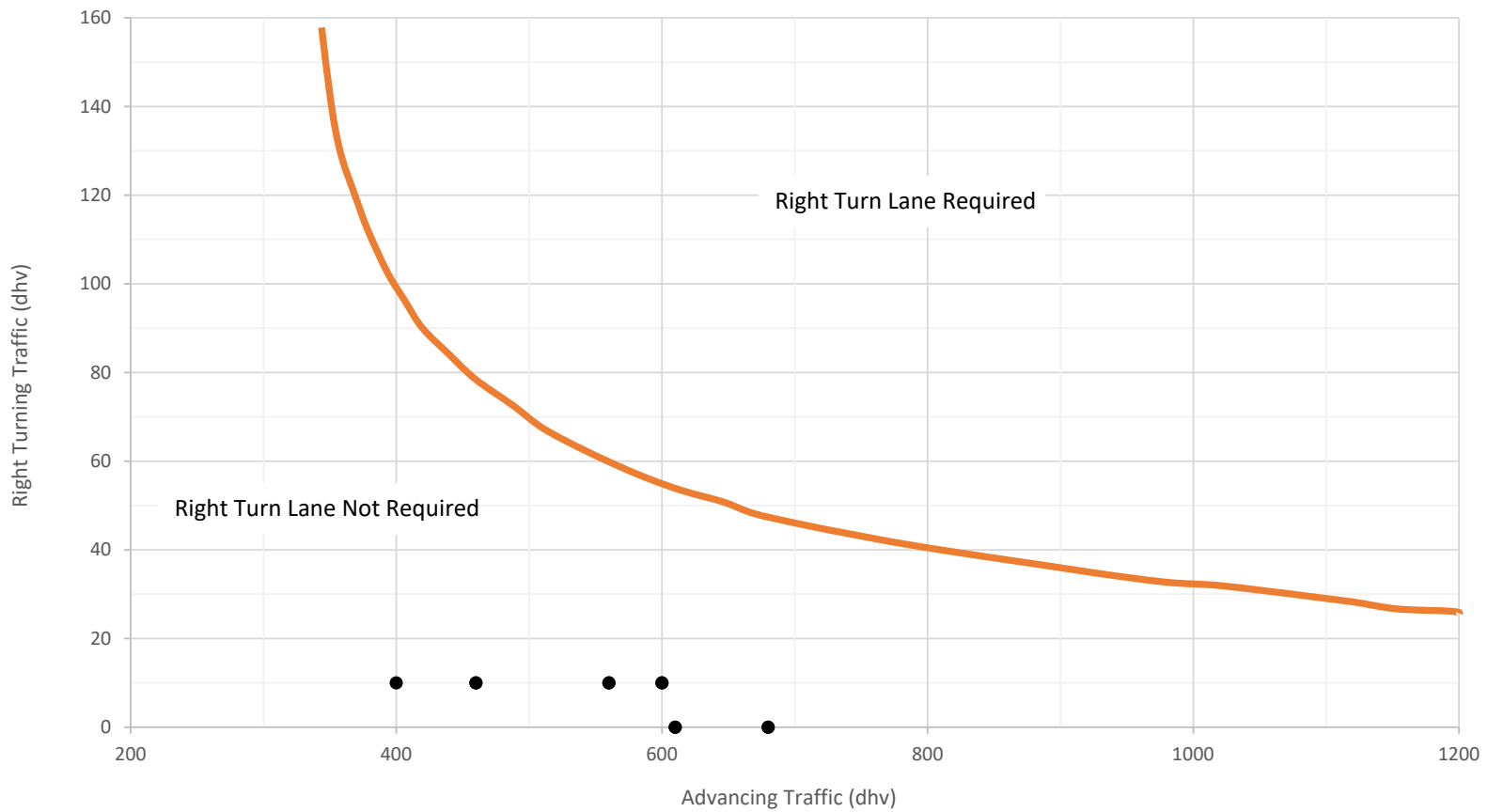
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Woodridge South Dr (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	0	0
Advancing Traffic (dhv) [Includes Right Turns]	400	460	560	600	610	680



Warrant Satisfied?

NO

NO

NO

NO

NO

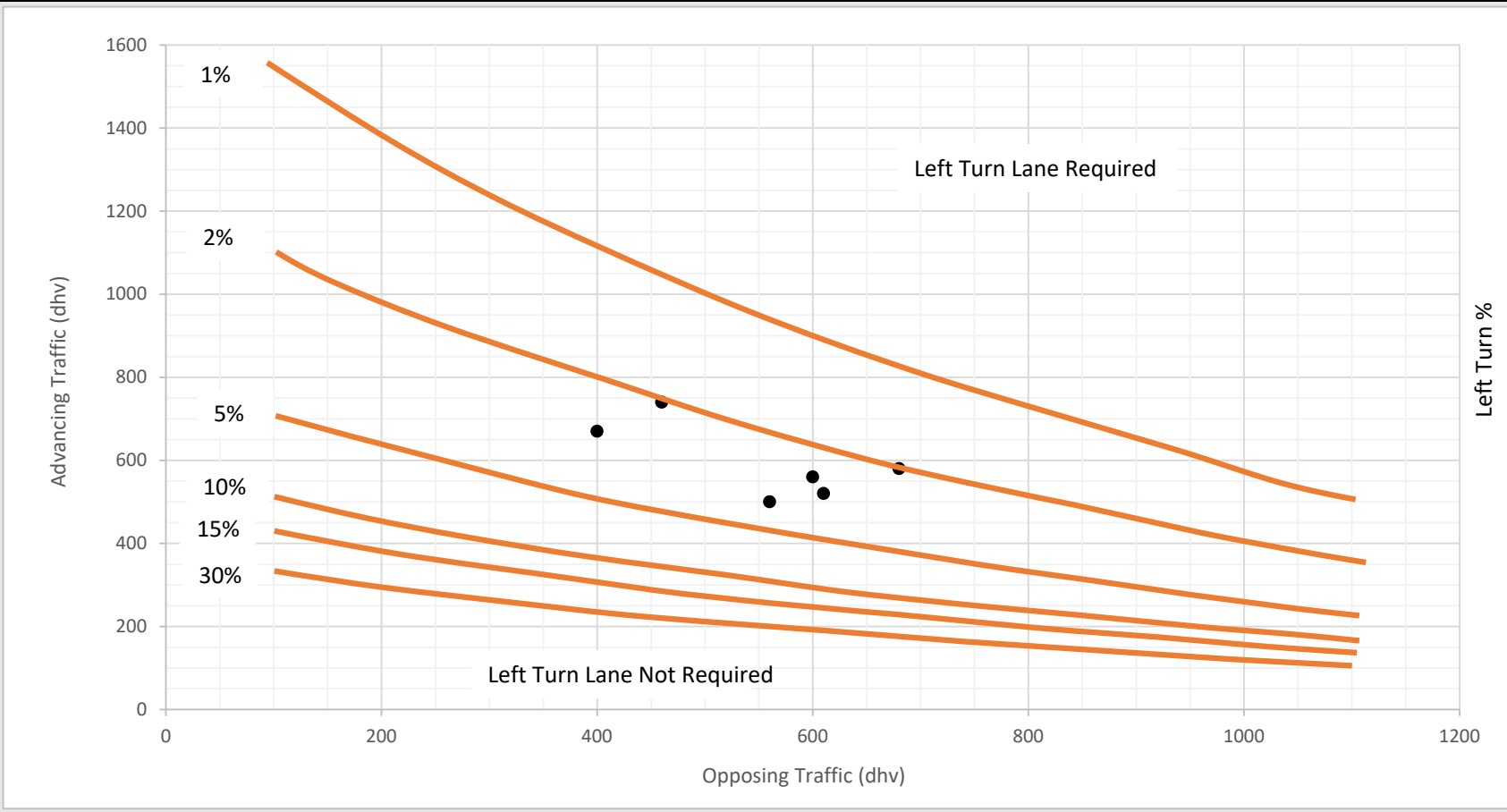
NO

2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

State Rd & Woodridge South Dr (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	670	740	500	560	520	580
Opposing Traffic (dhv)	400	460	560	600	610	680
Left Turn %	3%	3%	2%	2%	0%	0%



Warrant Satisfied?	NO	YES	NO	NO	NO	NO
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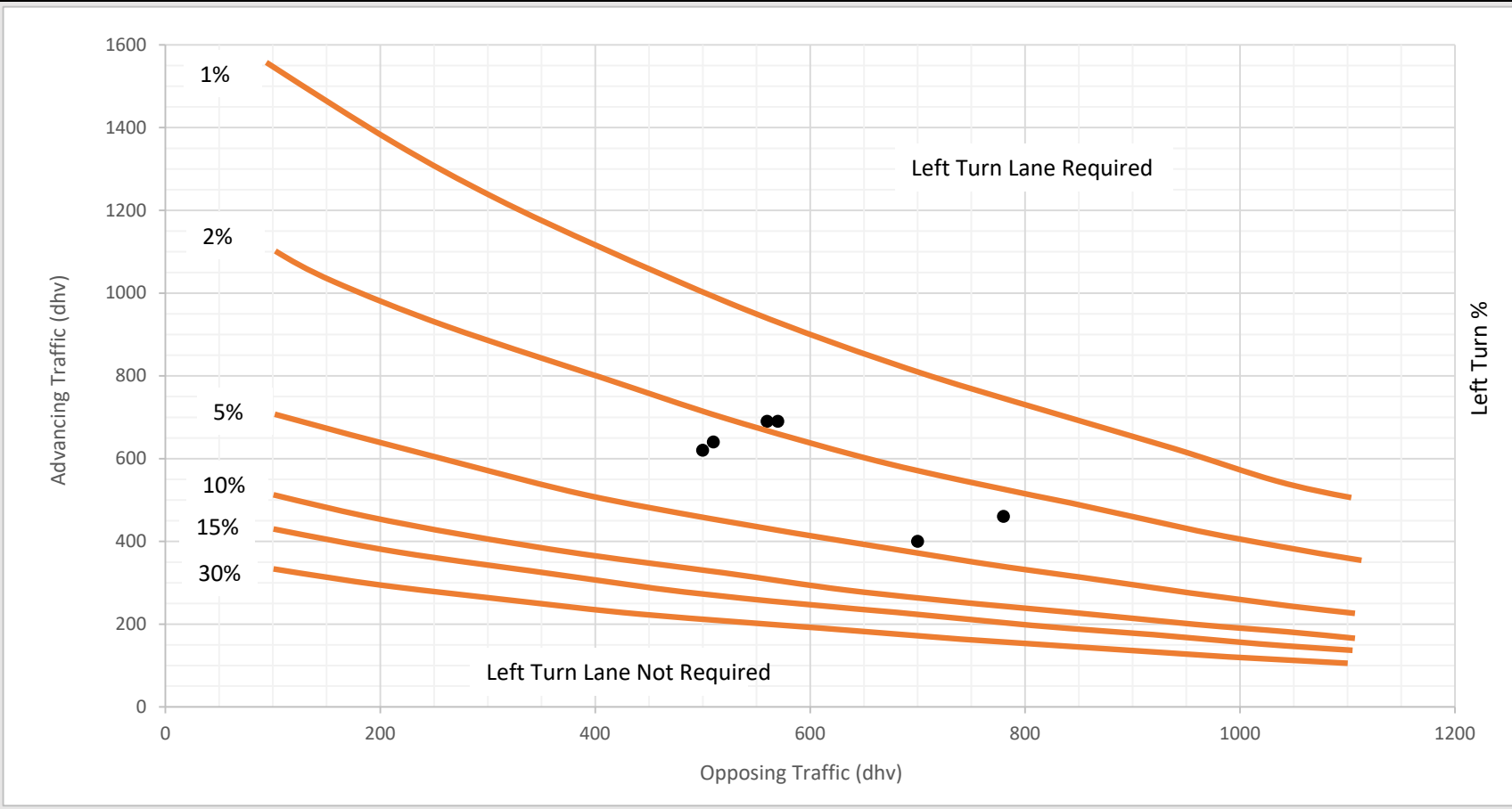
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Woodridge South Dr. - NB
2021	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	3%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	PM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	3%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

State Rd & Cuyahoga Falls Industrial Pkwy (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	400	460	640	690	620	690
Opposing Traffic (dhv)	700	780	510	570	500	560
Left Turn %	5%	4%	3%	3%	2%	1%



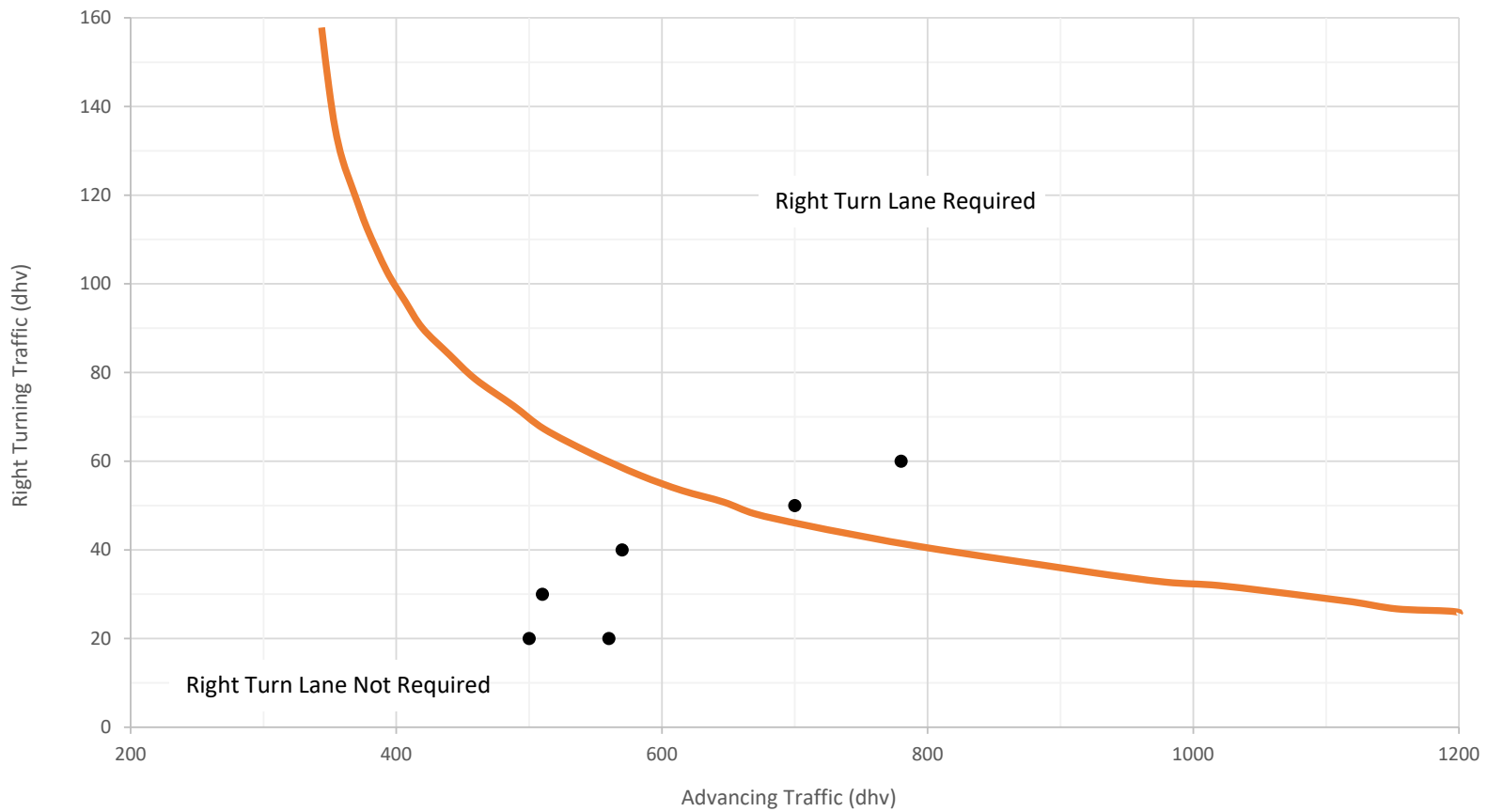
Warrant Satisfied?	YES	YES	YES	YES	NO	NO
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2-Lane Highway Right Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Cuyahoga Falls Industrial Pkwy (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	50	60	30	40	20	20
Advancing Traffic (dhv) [Includes Right Turns]	700	780	510	570	500	560



Warrant Satisfied?	YES	YES	NO	NO	NO	NO
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Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Falls Industrial Pkwy. - SB
2021	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	3%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	3%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

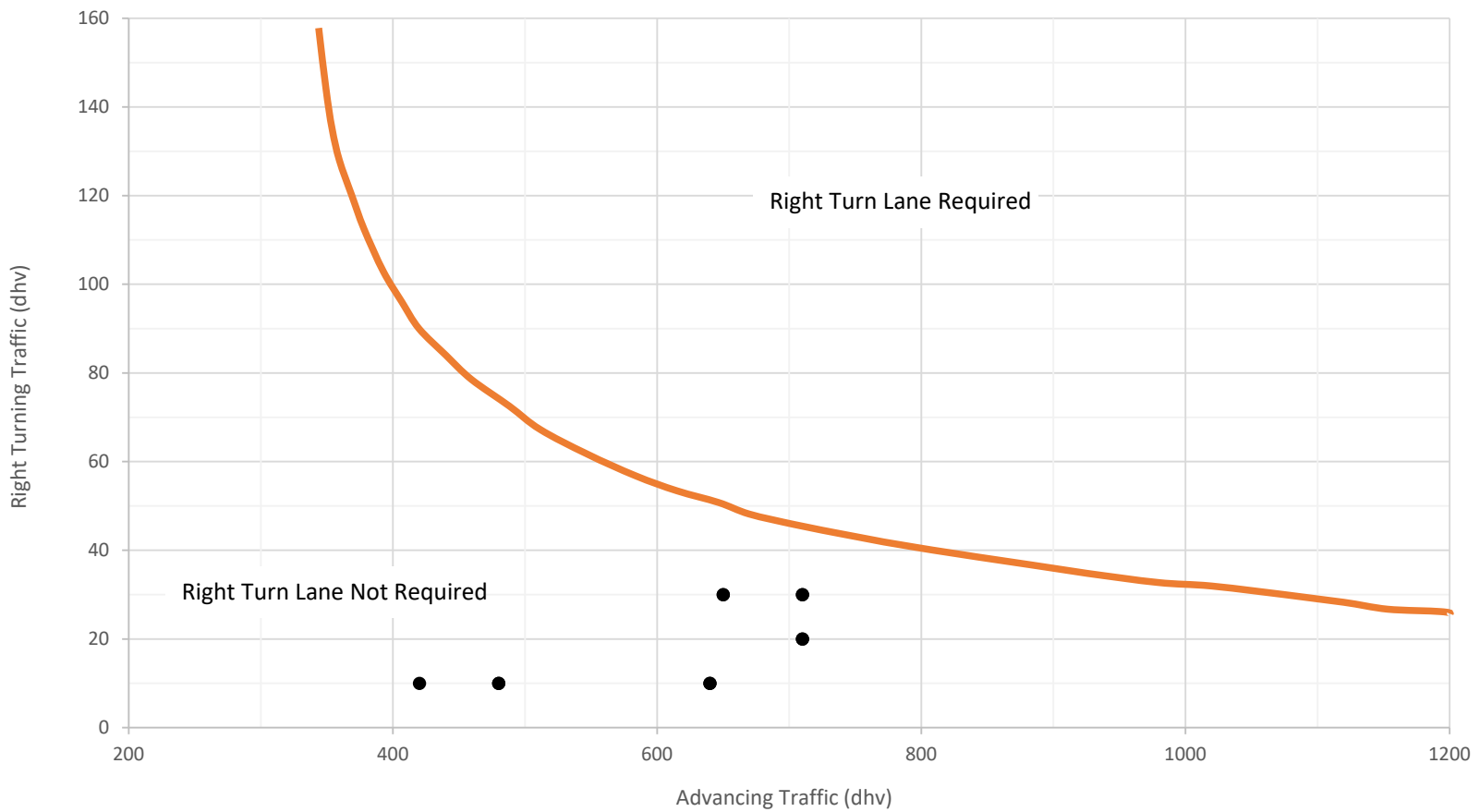
Right Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	State Rd. & Falls Industrial Pkwy. - NB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	50
% of Approach Volume	7%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	60
% of Approach Volume	8%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Quick Rd/Audi North Drive (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	30	30	10	20
Advancing Traffic (dhv) [Includes Right Turns]	420	480	650	710	640	710



Warrant Satisfied?

NO

NO

NO

NO

NO

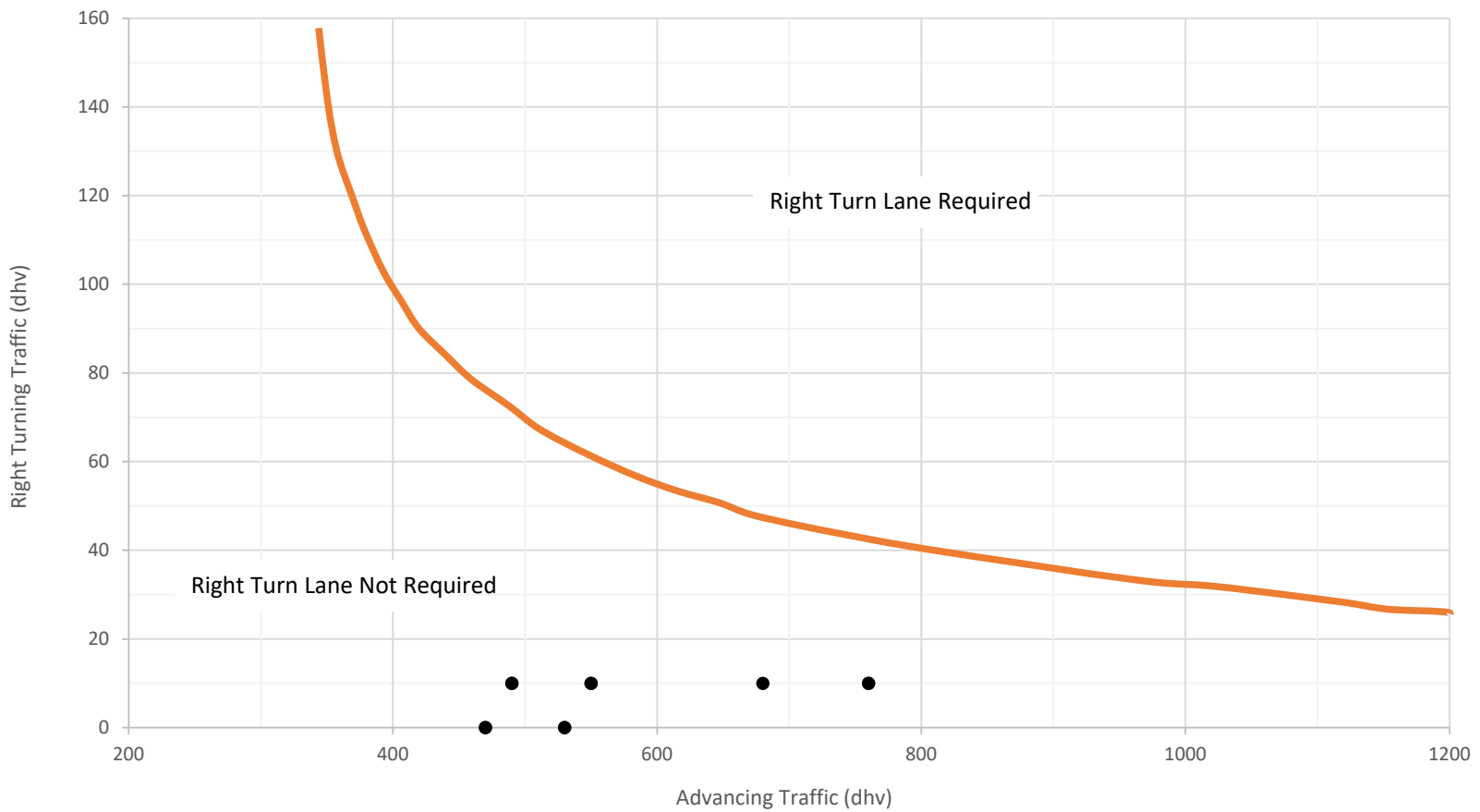
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Quick Rd/Audi North Drive (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	0	0	10	10
Advancing Traffic (dhv) [Includes Right Turns]	680	760	470	530	490	550



Warrant Satisfied?

NO

NO

NO

NO

NO

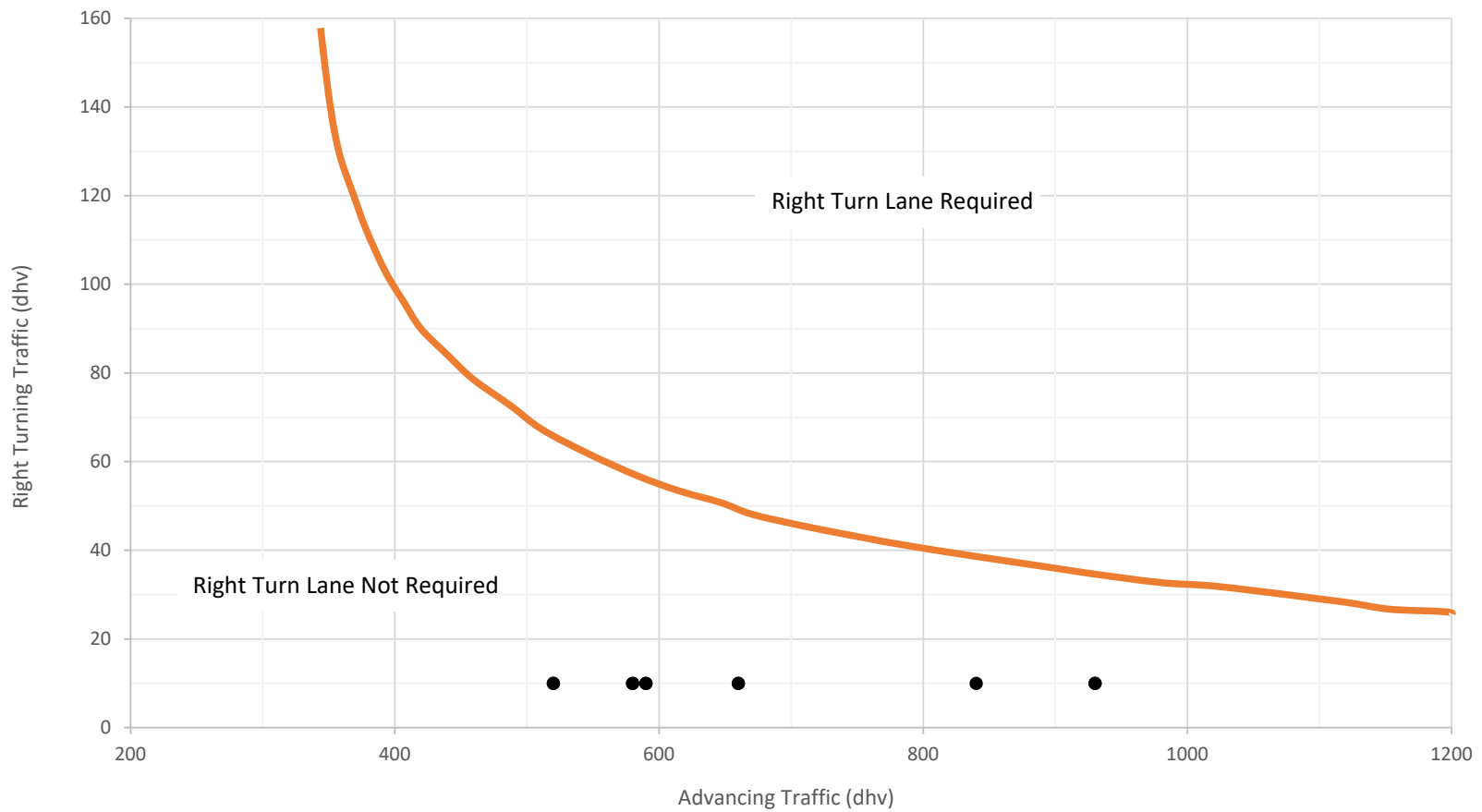
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Quick Rd/Audi South Drive (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	840	930	580	660	520	590



Warrant Satisfied?

NO

NO

NO

NO

NO

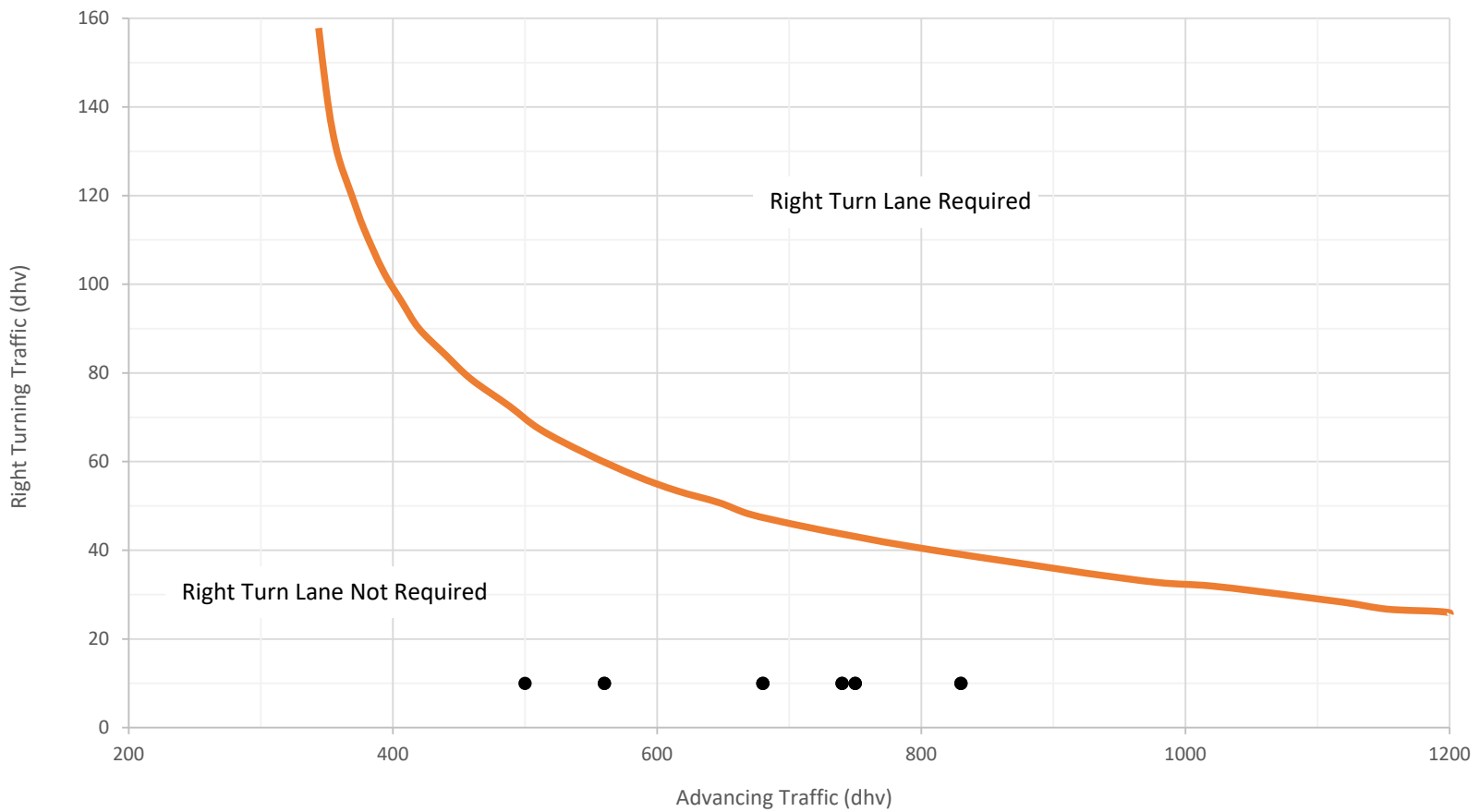
NO

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd & Quick Rd/Audi North Drive (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	500	560	750	830	680	740



Warrant Satisfied?

NO

NO

NO

NO

NO

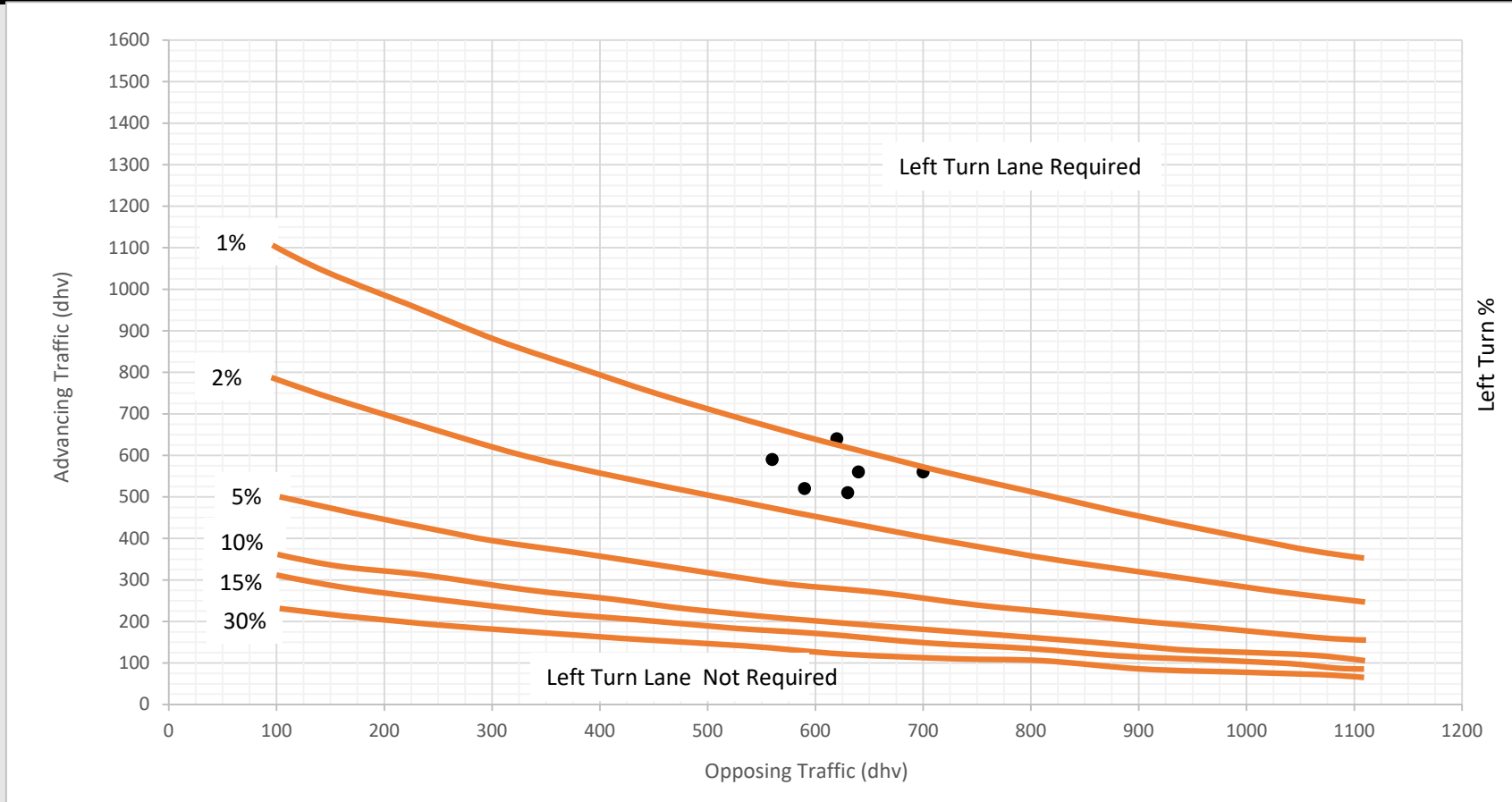
NO

2-Lane Highway Left Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5b

Steels Corners Rd & Koir Dr/Americhem Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	520	560	510	560	590	640
Opposing Traffic (dhv)	590	640	630	700	560	620
Left Turn %	2%	2%	0%	0%	2%	2%



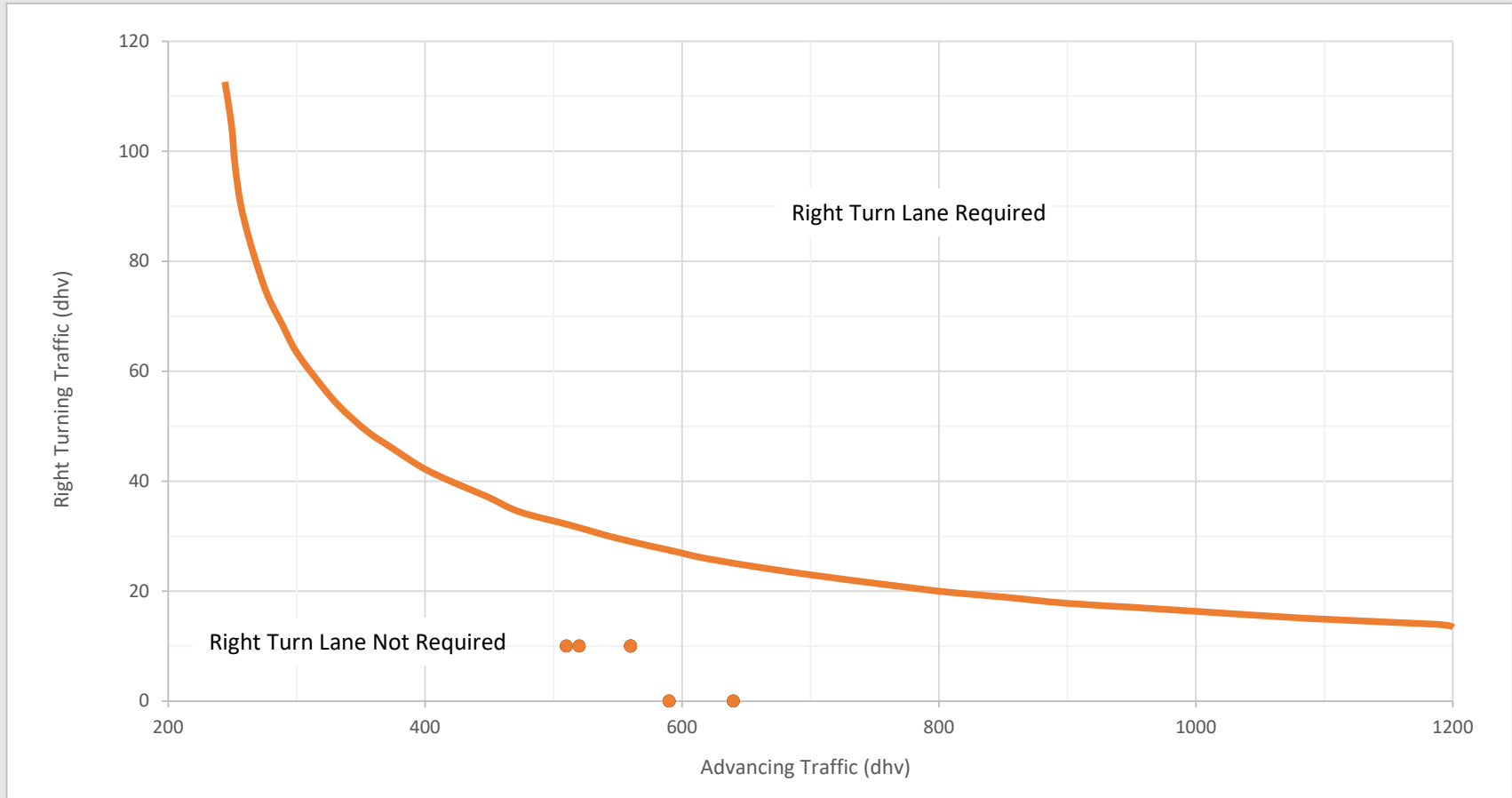
Warrant Satisfied?	YES	YES	-	-	YES	YES
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Koir Dr/Americhem Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	0	0
Advancing Traffic (dhv) [Includes Right Turns]	520	560	510	560	590	640



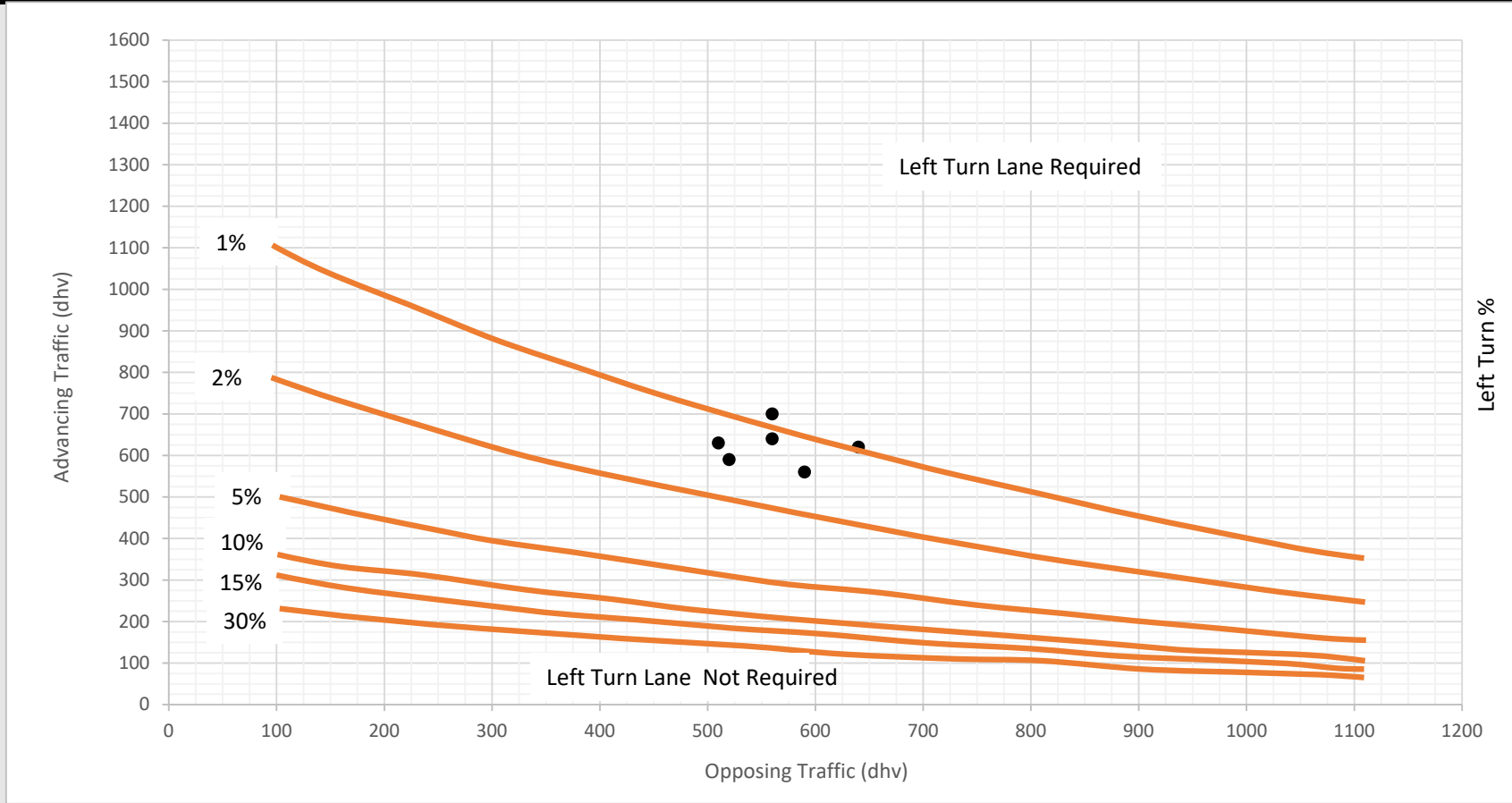
Warrant Satisfied?	NO	NO	NO	No	-	-
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2-Lane Highway Left Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5b

Steels Corners Rd & Koir Dr/Americhem Dr (Westbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	590	640	630	700	560	620
Opposing Traffic (dhv)	520	560	510	560	590	640
Left Turn %	2%	2%	0%	0%	2%	2%



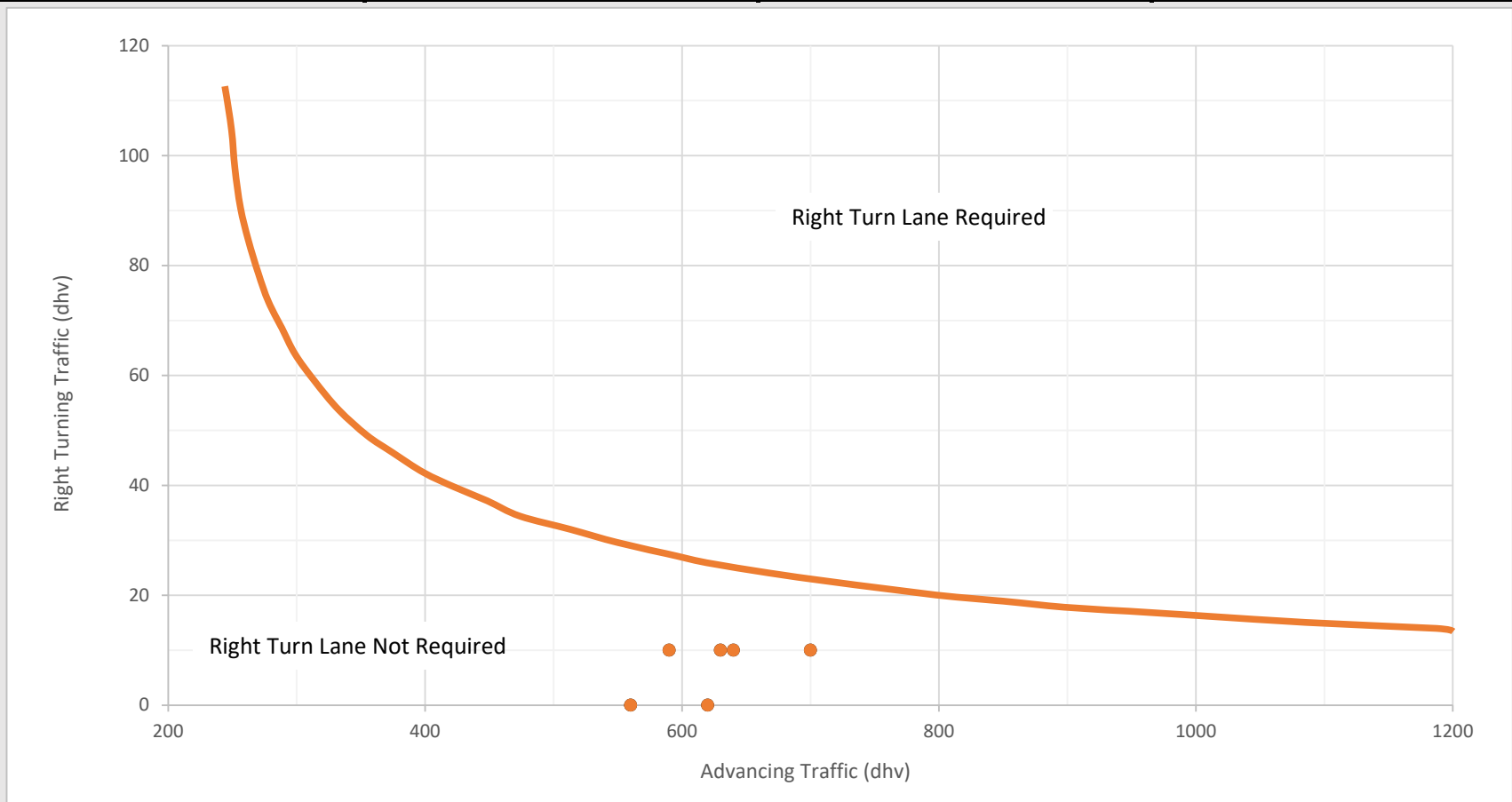
Warrant Satisfied?	YES	YES	-	-	YES	YES
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Koir Dr/Americhem Dr (Westbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	0	0
Advancing Traffic (dhv) [Includes Right Turns]	590	640	630	700	560	620



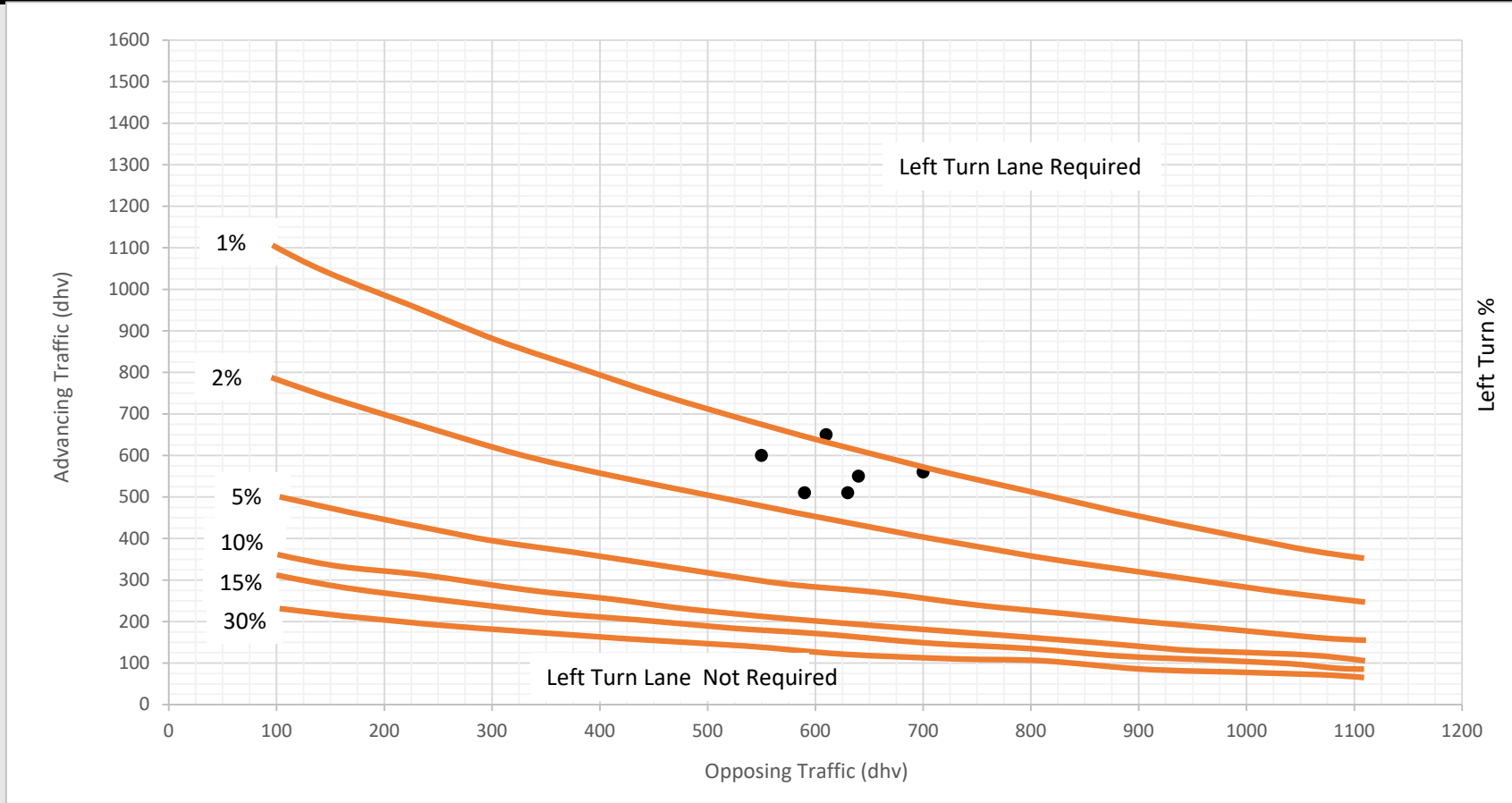
Warrant Satisfied?	NO	NO	NO	NO	-	-
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2-Lane Highway Left Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5b

Steels Corners Rd & Lippman Dr/Struktol West Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	510	550	510	560	600	650
Opposing Traffic (dhv)	590	640	630	700	550	610
Left Turn %	2%	2%	0%	0%	0%	0%



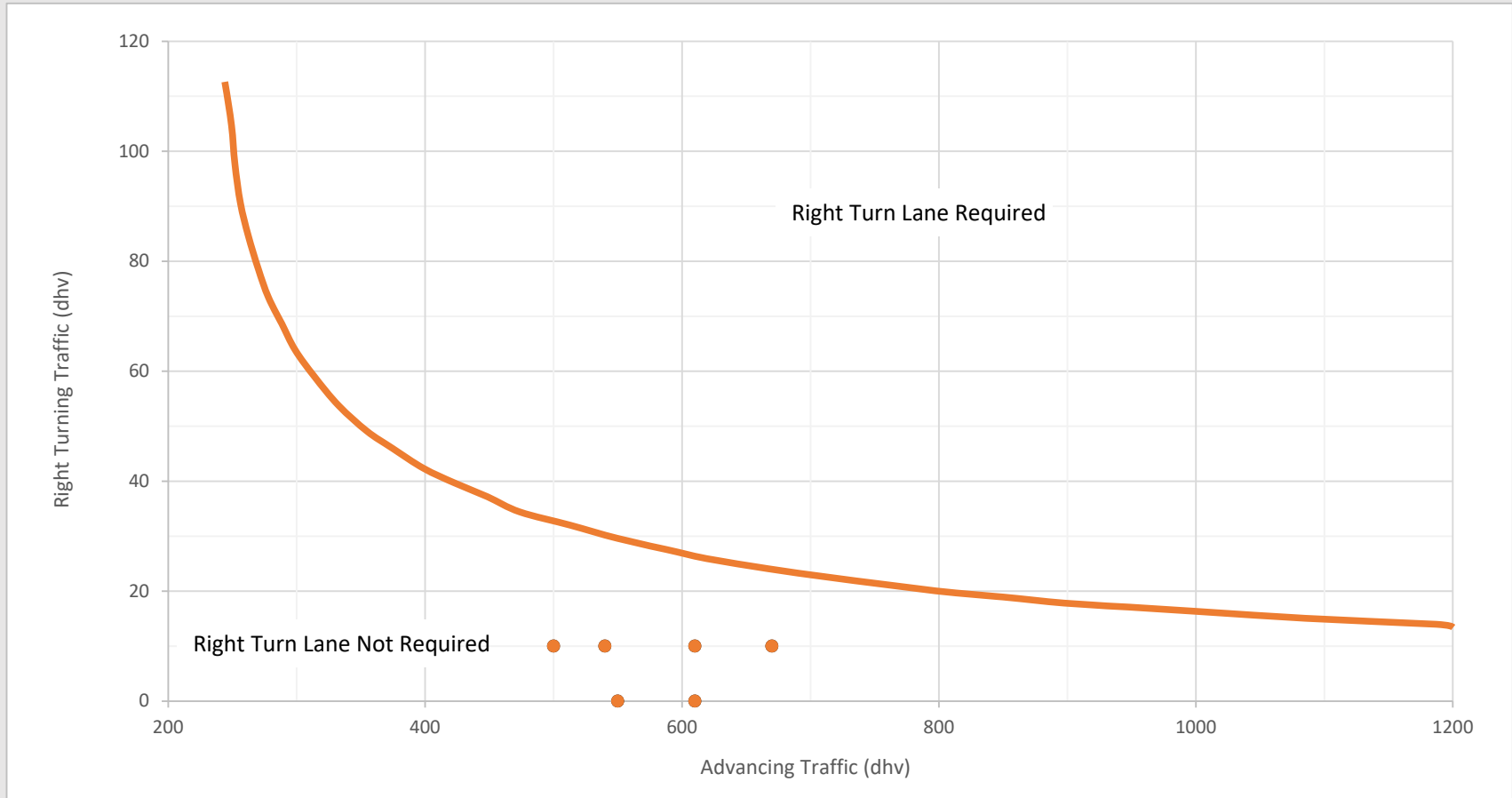
Warrant Satisfied?	YES	YES	-	-	-	-
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Struktol East Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	0	0	10	10
Advancing Traffic (dhv) [Includes Right Turns]	500	540	550	610	610	670



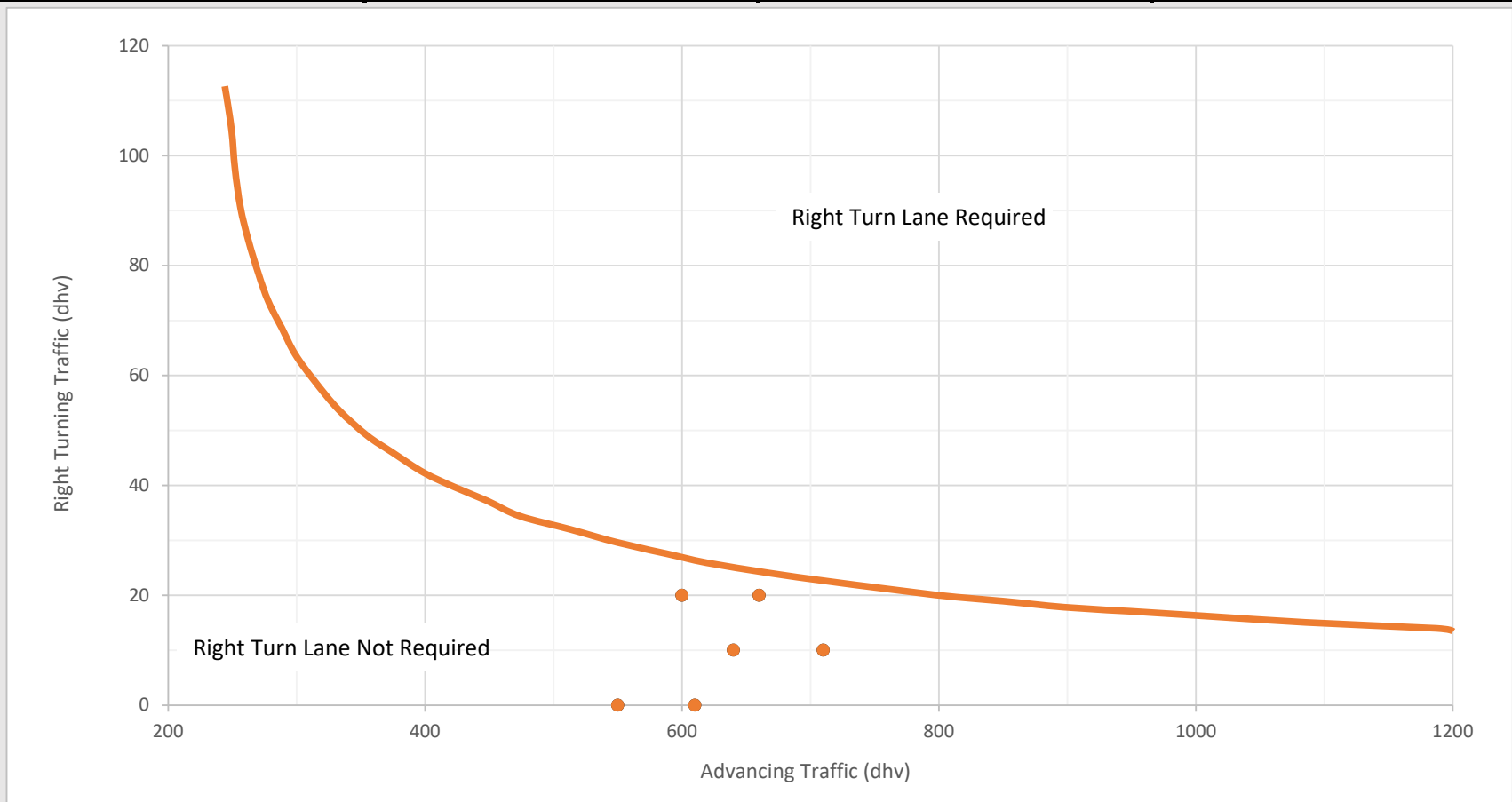
Warrant Satisfied?	NO	NO	-	-	NO	NO
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Struktol East Dr (Westbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	20	20	10	10	0	0
Advancing Traffic (dhv) [Includes Right Turns]	600	660	640	710	550	610



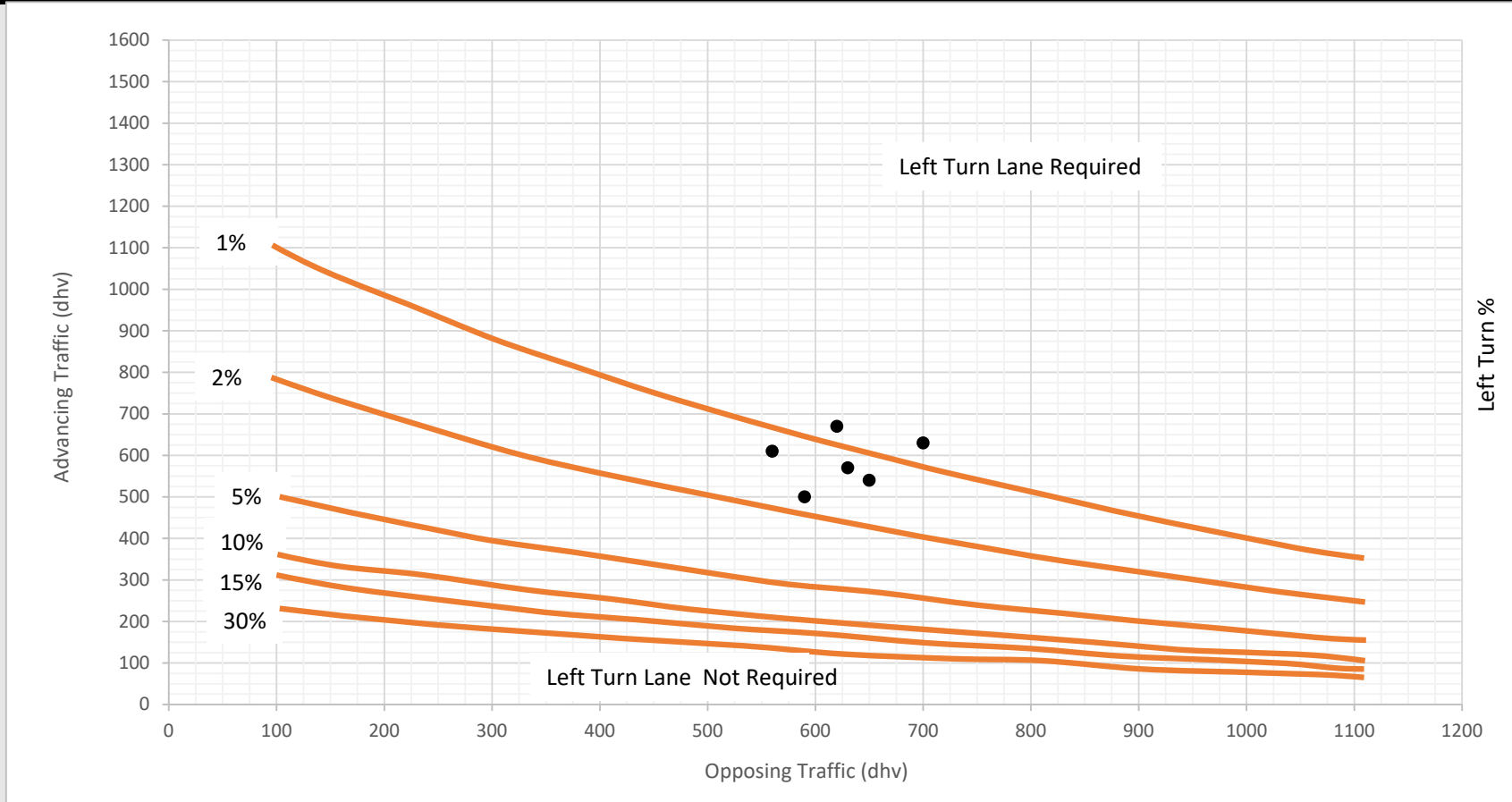
Warrant Satisfied?	NO	NO	NO	NO	-	-
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2-Lane Highway Left Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5b

Steels Corners Rd & Bonnett Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	500	540	570	630	610	670
Opposing Traffic (dhv)	590	650	630	700	560	620
Left Turn %	2%	2%	2%	2%	2%	1%



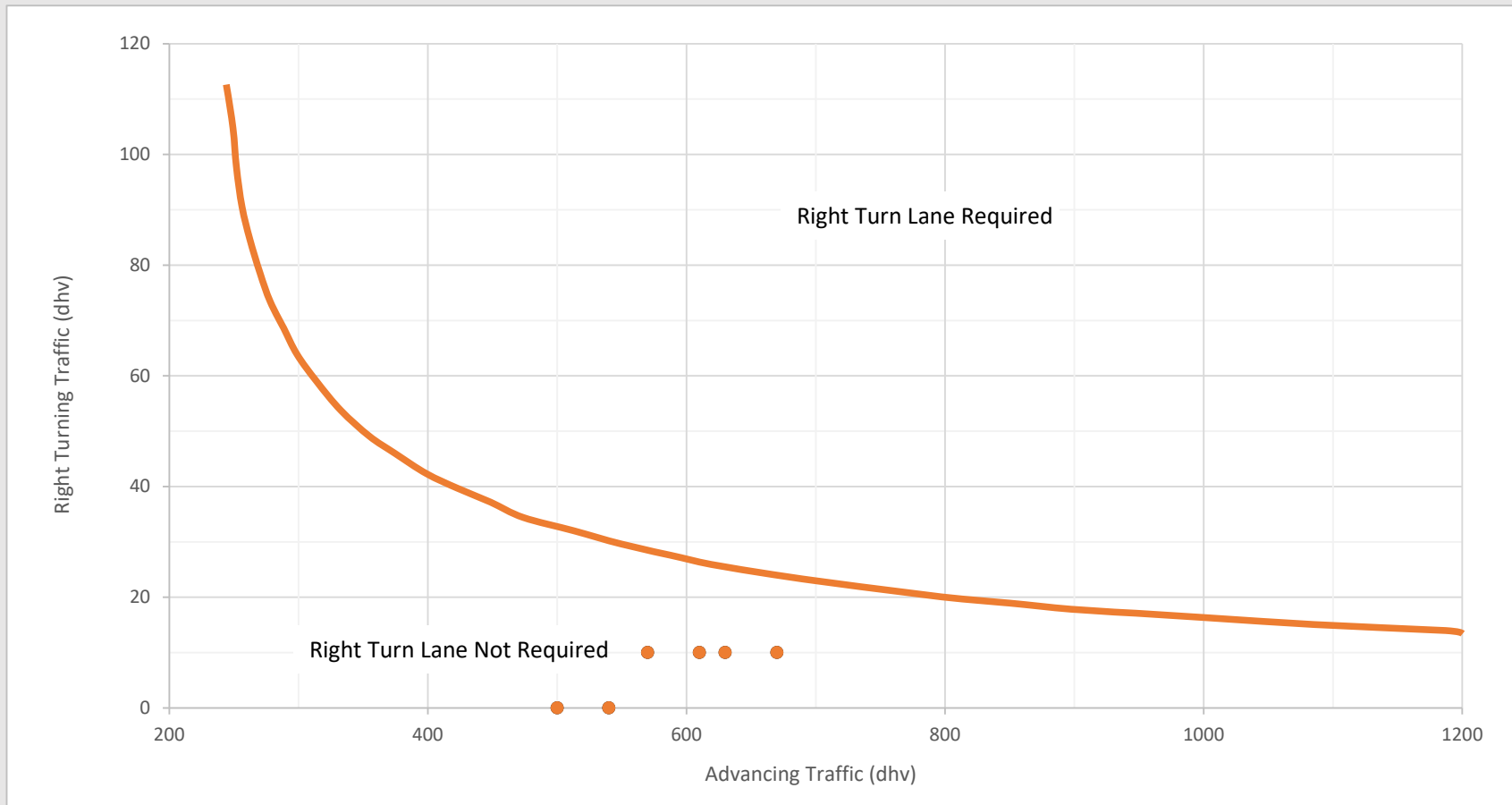
Warrant Satisfied?	YES	YES	YES	Yes	YES	YES
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Bonnett Dr (Eastbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	0	0	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	500	540	570	630	610	670



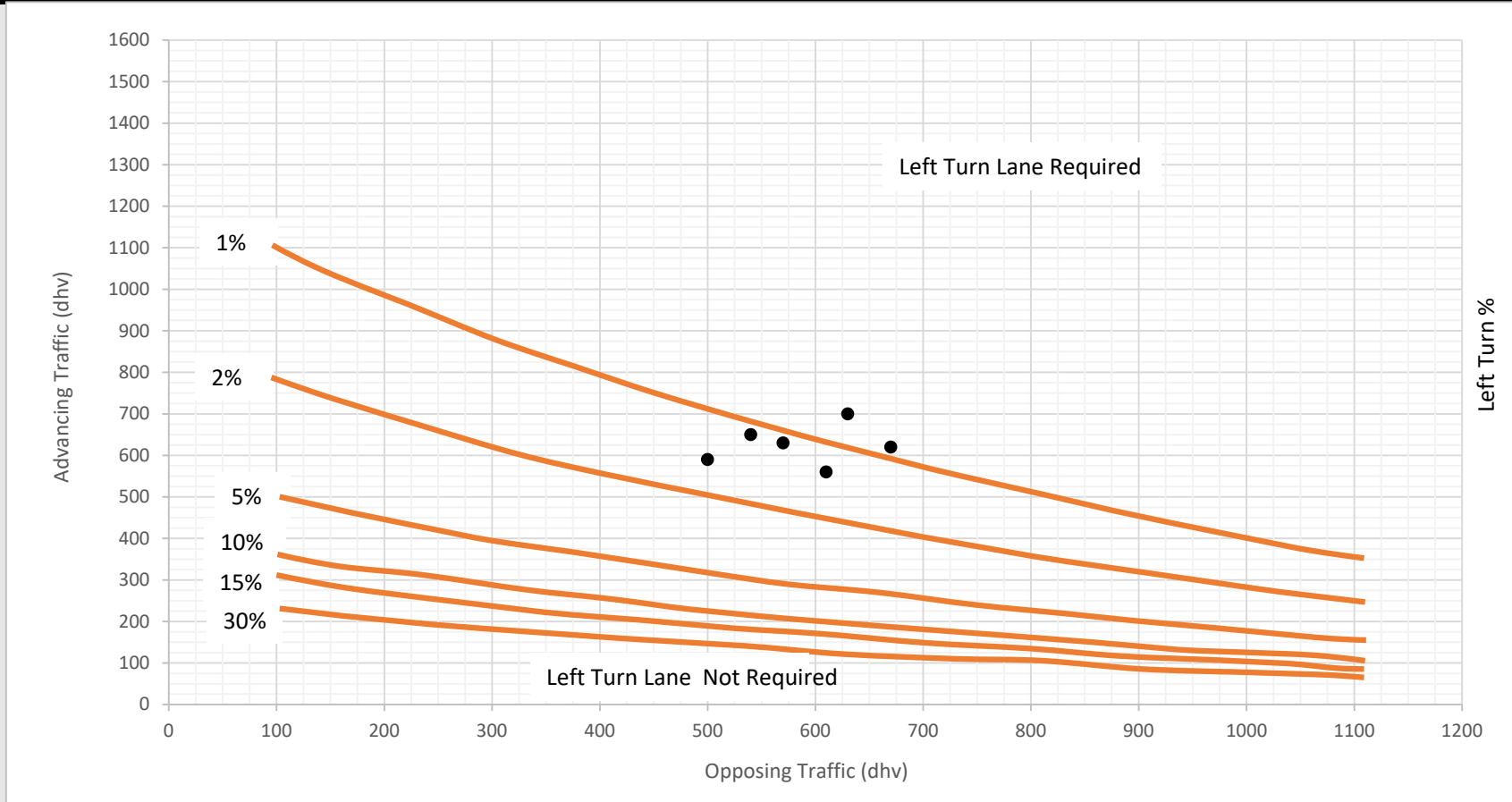
Warrant Satisfied?	-	-	NO	NO	NO	NO
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2-Lane Highway Left Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5b

Steels Corners Rd & Bonnett Dr (Westbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	590	650	630	700	560	620
Opposing Traffic (dhv)	500	540	570	630	610	670
Left Turn %	2%	2%	2%	1%	2%	2%



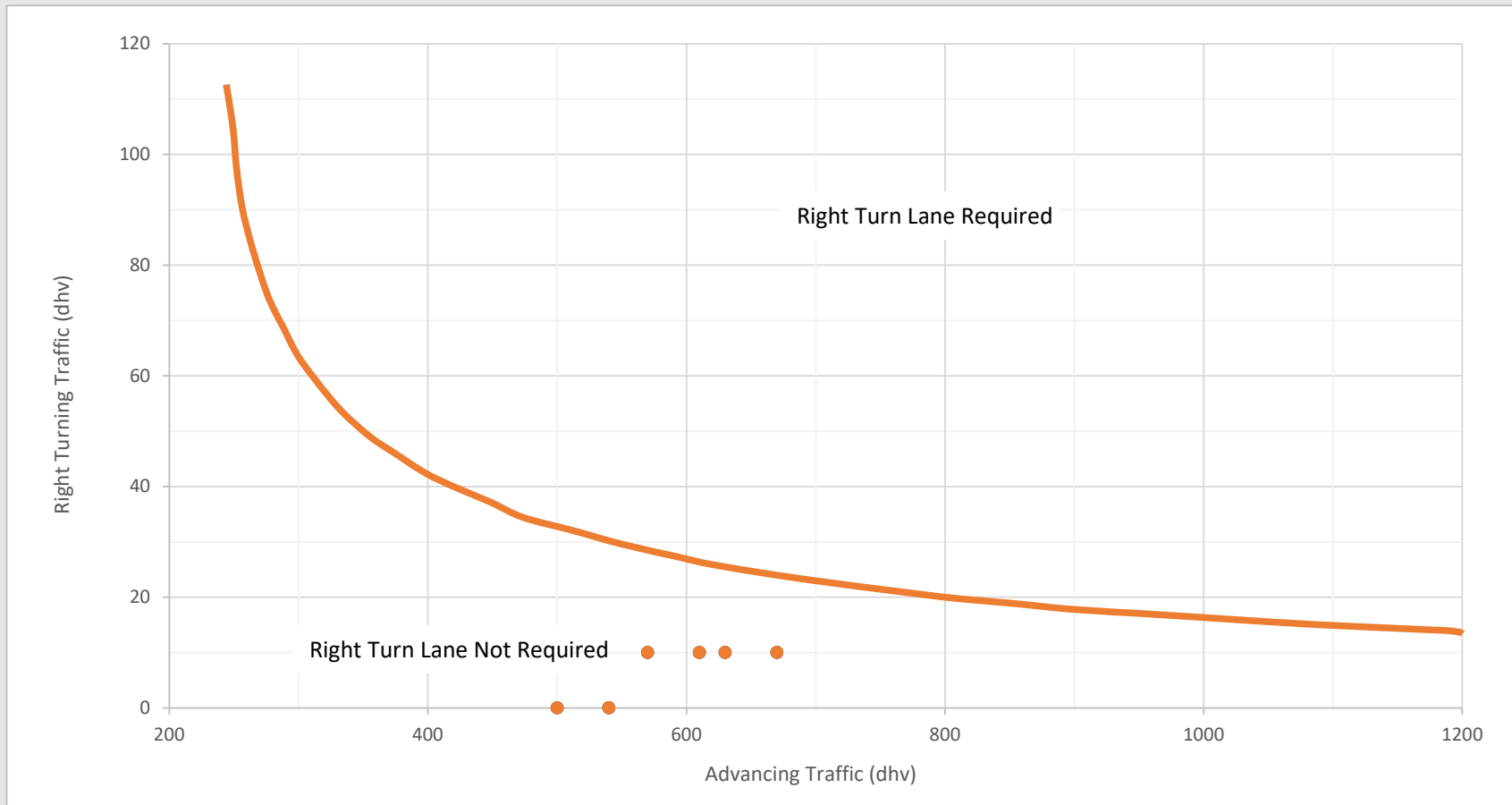
Warrant Satisfied?	YES	YES	YES	Yes	YES	YES
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2-Lane Highway Right Turn Lane Warrant (>40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6b

Steels Corners Rd & Bonnett Dr (Westbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	0	0	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	500	540	570	630	610	670



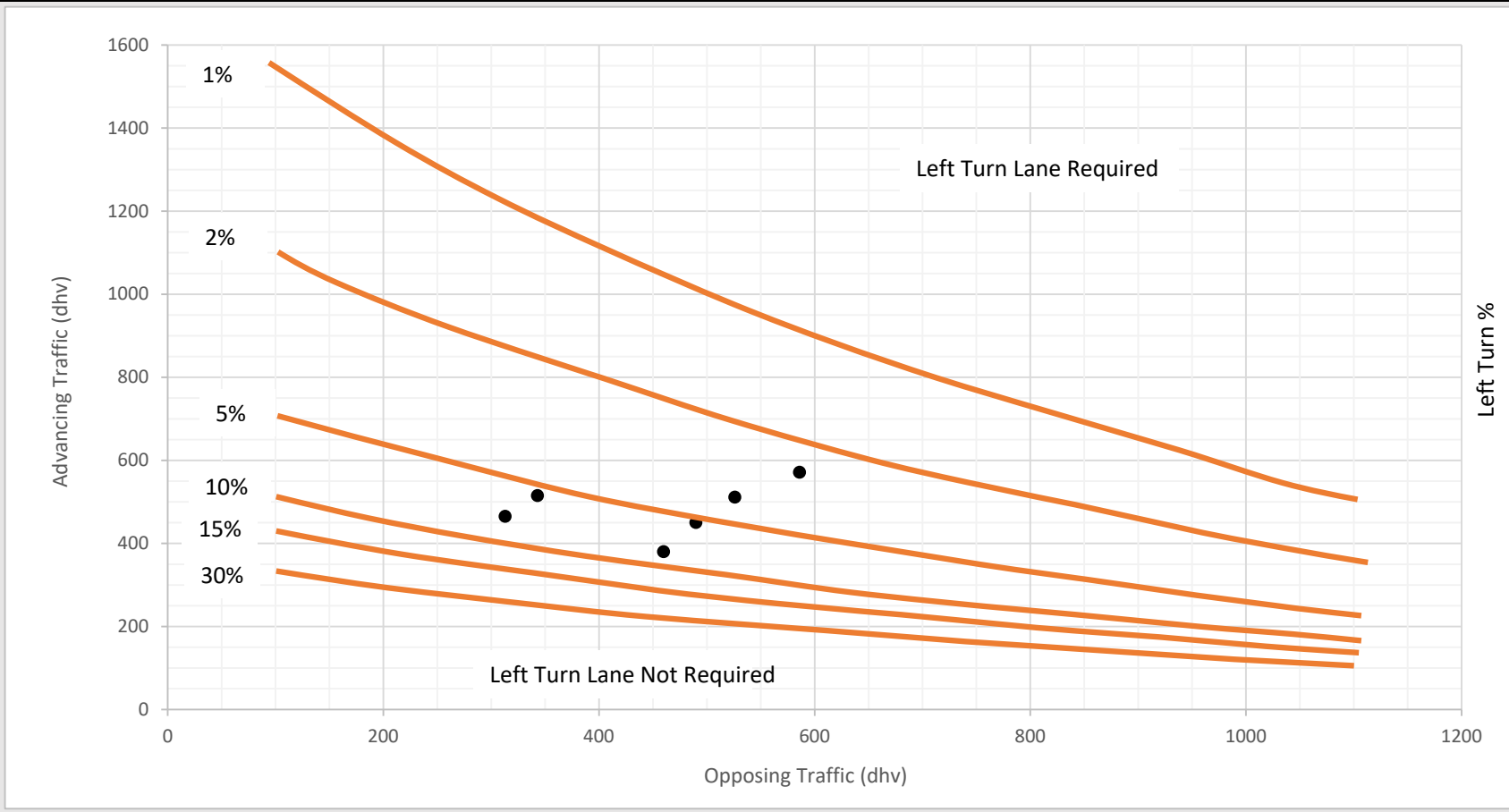
Warrant Satisfied?	-	-	NO	NO	NO	NO
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2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & CVCA North/Falls Commerce Pkwy (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	511	571	380	450	465	515
Opposing Traffic (dhv)	526	586	460	490	313	343
Left Turn %	4%	4%	5%	7%	4%	6%



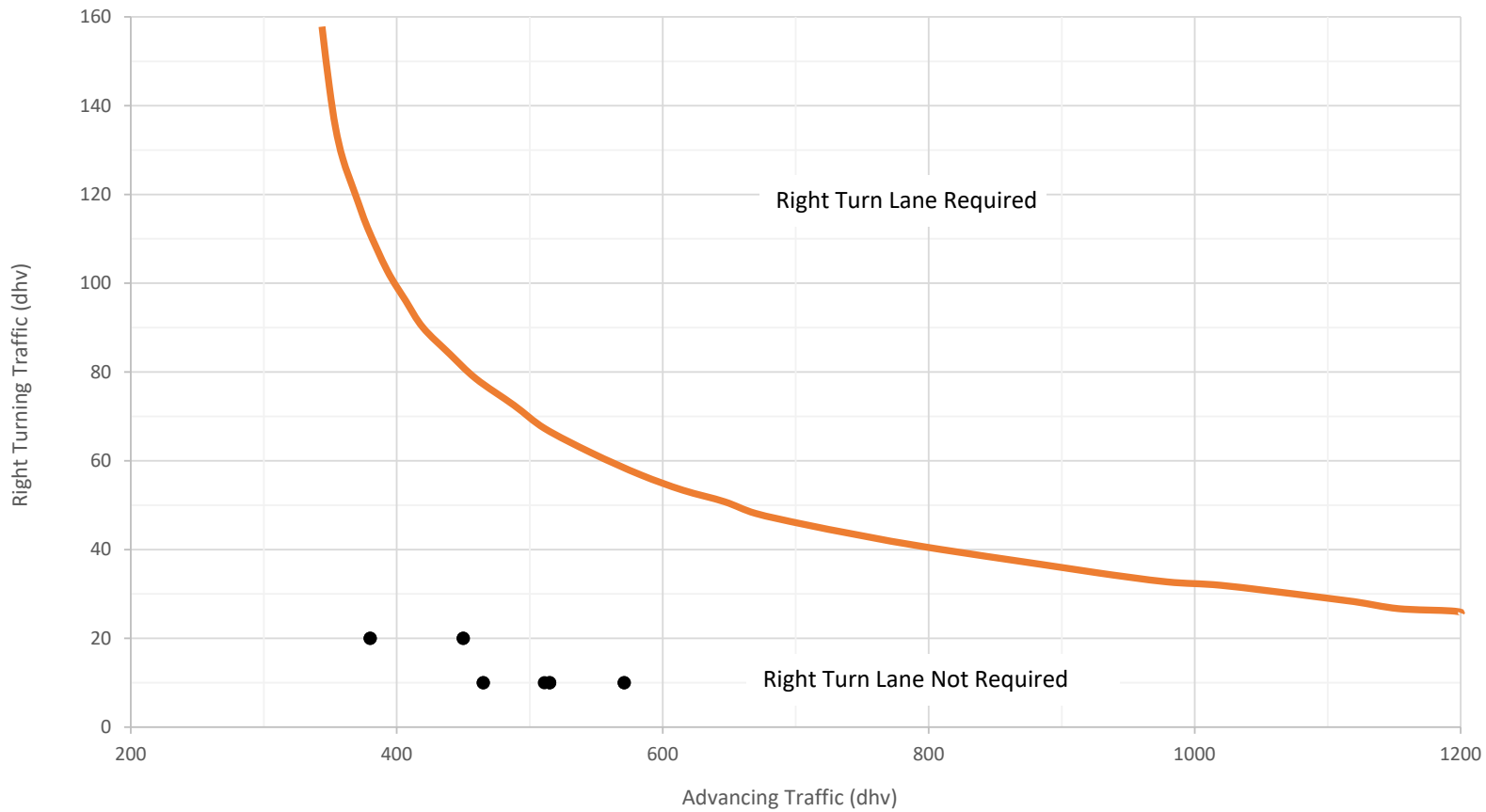
Warrant Satisfied?	YES	YES	NO	YES	NO	YES
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & CVCA North/Falls Commerce Pkwy (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	20	20	10	10
Advancing Traffic (dhv) [Includes Right Turns]	511	571	380	450	465	515



Warrant Satisfied?

NO

NO

NO

NO

NO

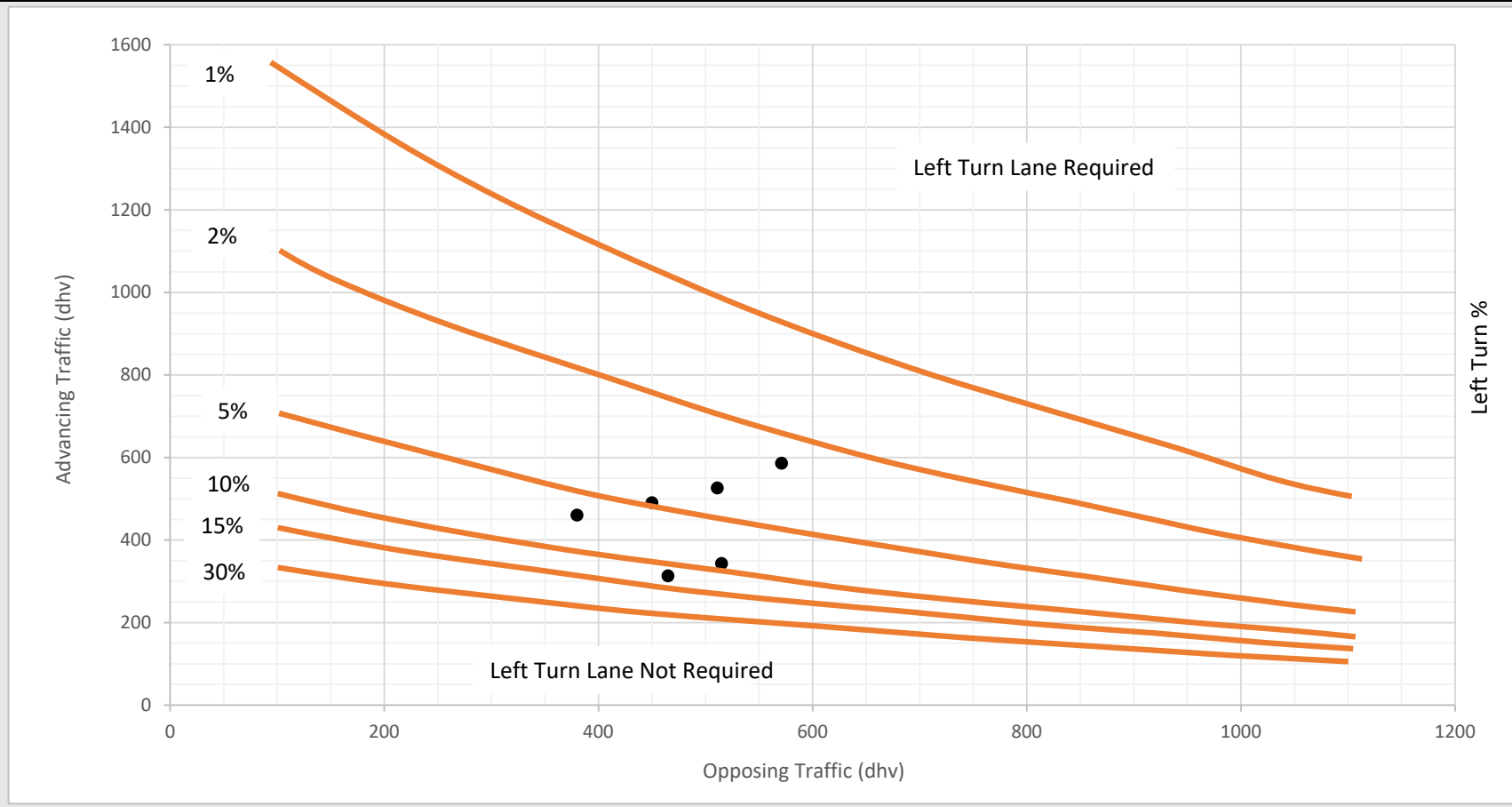
NO

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & CVCA North/Falls Commerce Pkwy (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	526	586	460	490	313	343
Opposing Traffic (dhv)	511	571	380	450	465	515
Left Turn %	2%	2%	4%	4%	3%	3%



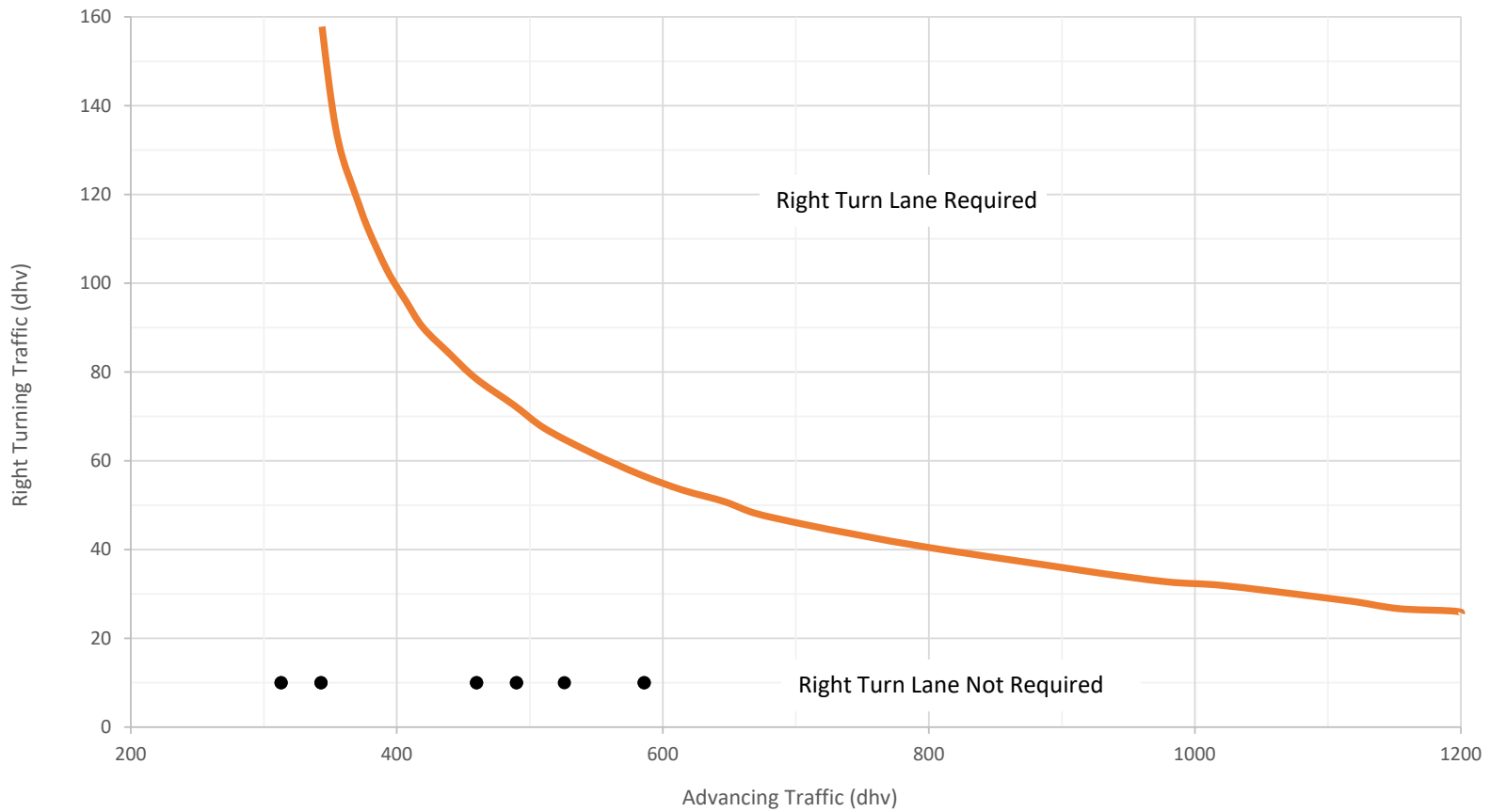
Warrant Satisfied?	NO	NO	NO	NO	NO	NO
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & CVCA North/Falls Commerce Pkwy (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	10	10	10	10
Advancing Traffic (dhv) [Includes Right Turns]	526	586	460	490	313	343



Warrant Satisfied?

NO

NO

NO

NO

NO

NO

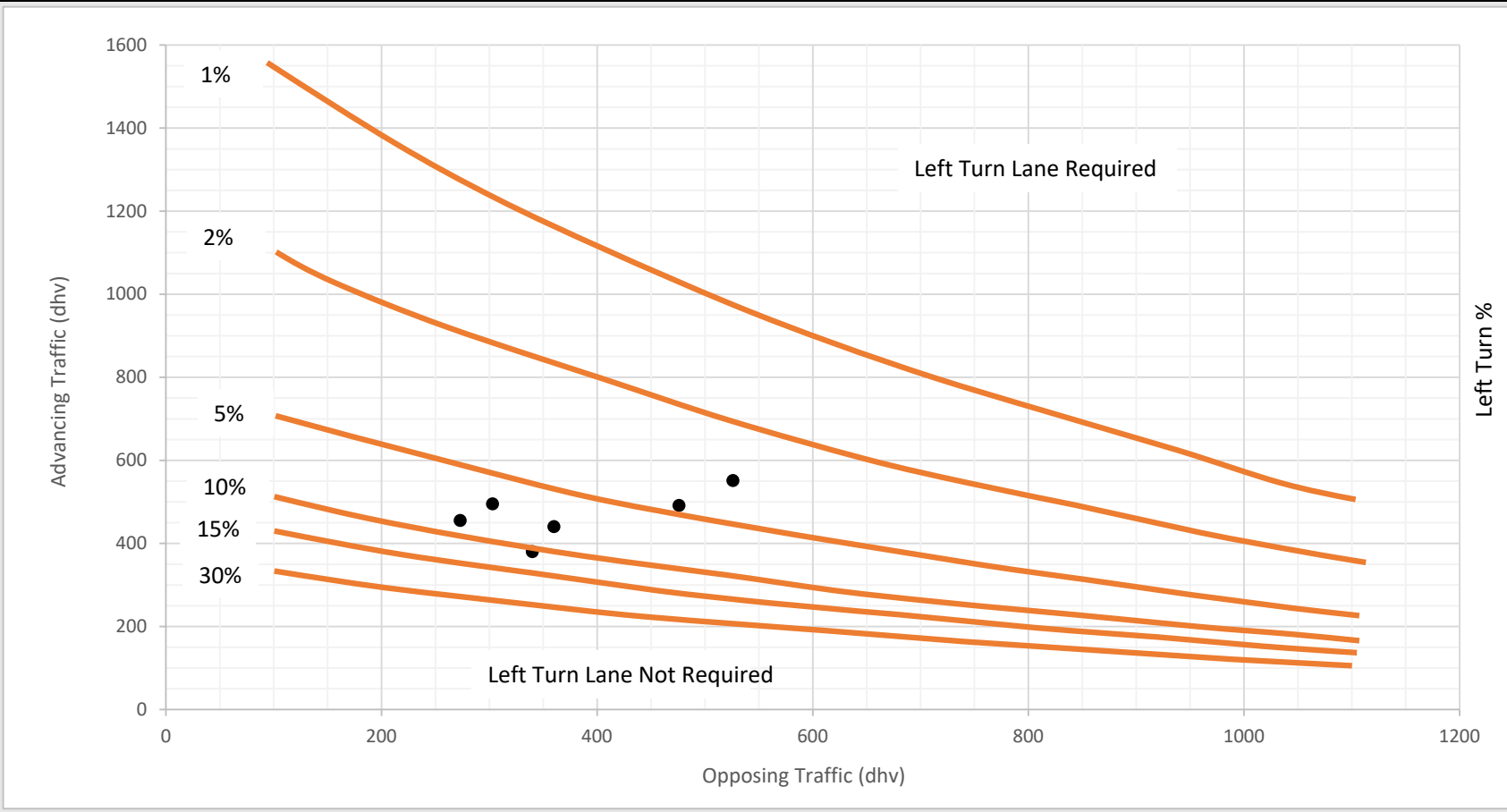
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & CVCA North Dr. - SB
2021	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	20
% of Approach Volume	5%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	30
% of Approach Volume	7%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & CVCA Center (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	491	551	380	440	455	495
Opposing Traffic (dhv)	476	526	340	360	273	303
Left Turn %	0%	0%	0%	0%	0%	0%



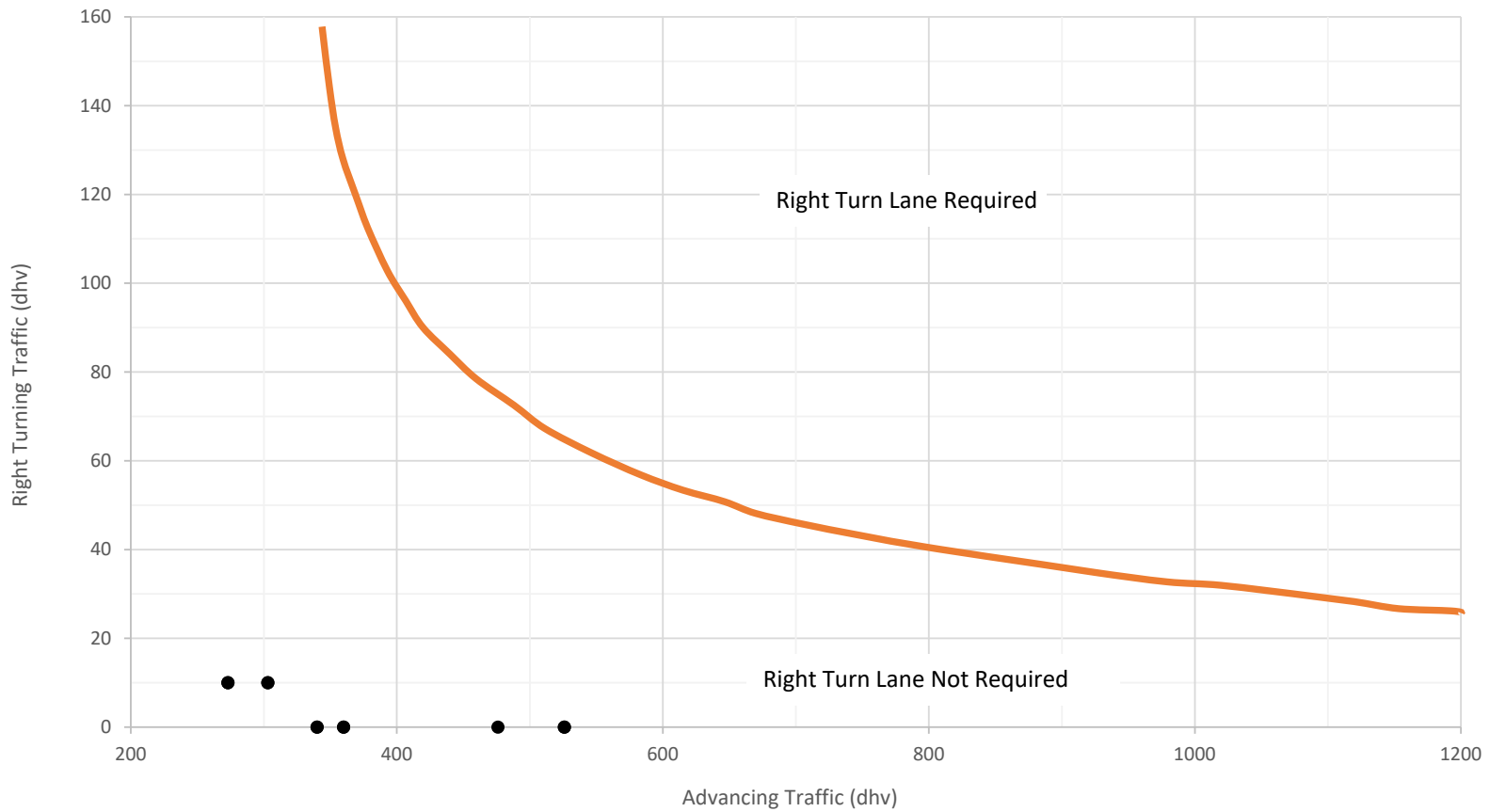
Warrant Satisfied?	N/A	N/A	N/A	N/A	N/A	N/A
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & CVCA Center (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	0	0	0	0	10	10
Advancing Traffic (dhv) [Includes Right Turns]	476	526	340	360	273	303



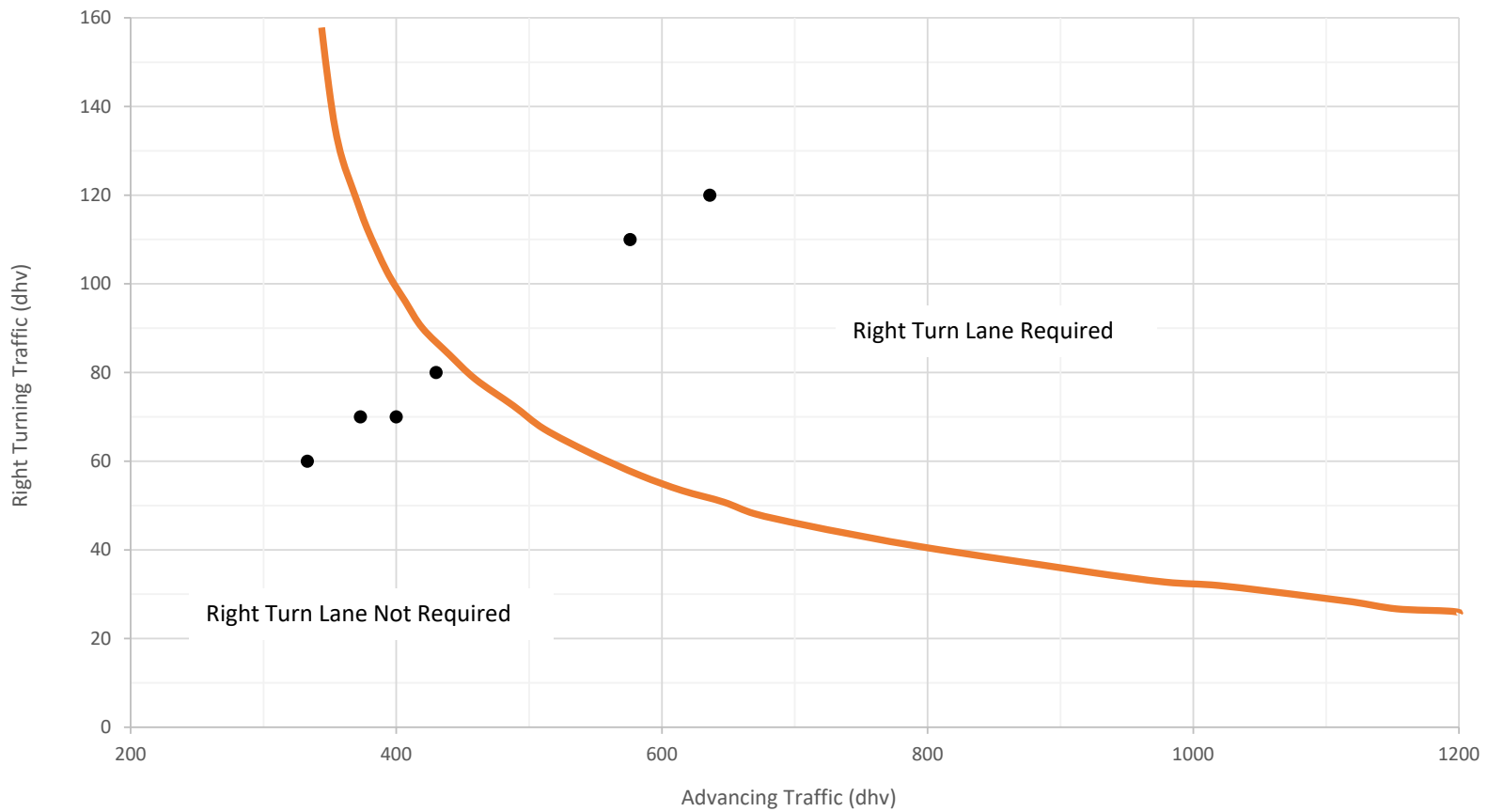
Warrant Satisfied?	N/A	N/A	N/A	N/A	NO	NO
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & CVCA South (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	110	120	70	80	60	70
Advancing Traffic (dhv) [Includes Right Turns]	576	636	400	430	333	373



Warrant Satisfied?

YES

YES

NO

NO

NO

NO

Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & CVCA South Dr. - SB
2021	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	80
% of Approach Volume	16%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	90
% of Approach Volume	16%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

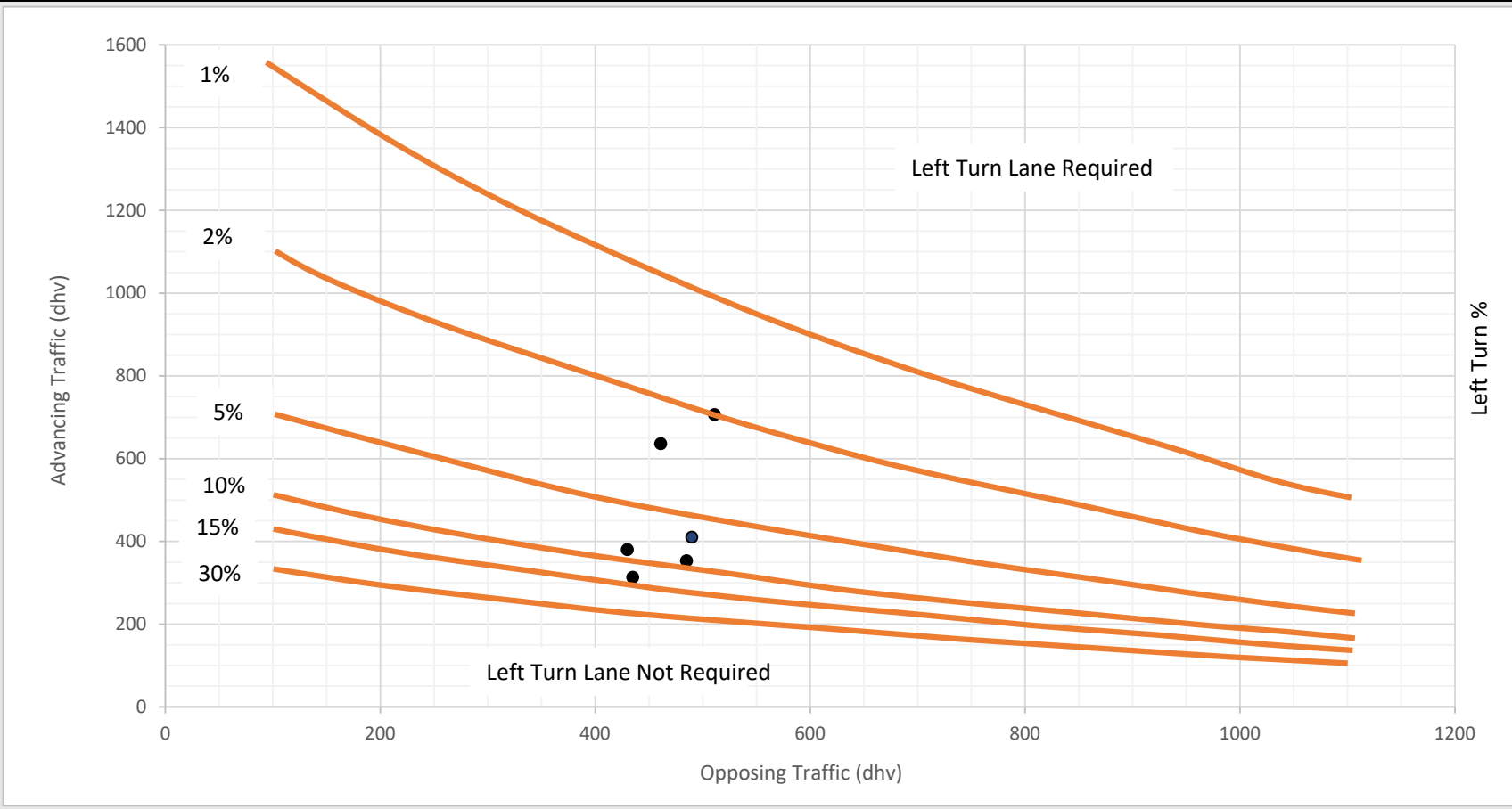
Right Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & CVCA South Dr. - NB
2021	PM Volumes
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	110
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	PM Volumes
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	120
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Walsh North (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	636	706	380	410	313	353
Opposing Traffic (dhv)	461	511	430	490	435	485
Left Turn %	11%	11%	8%	10%	3%	3%



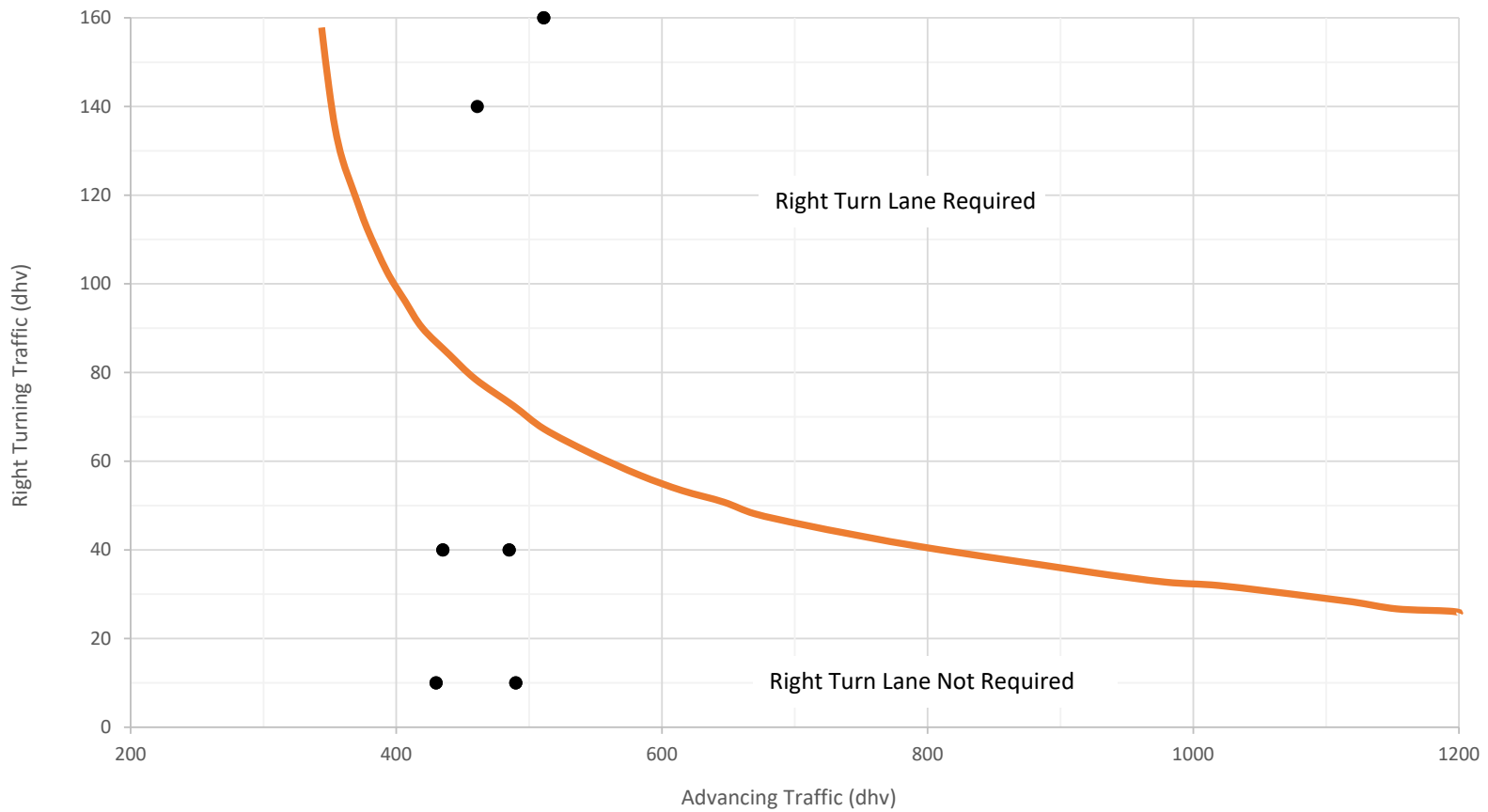
Warrant Satisfied?	YES	YES	NO	YES	NO	NO
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Walsh North (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	140	160	10	10	40	40
Advancing Traffic (dhv) [Includes Right Turns]	461	511	430	490	435	485



Warrant Satisfied?	YES	YES	NO	NO	NO	NO
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Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh North Dr. - NB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	70
% of Approach Volume	11%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	80
% of Approach Volume	11%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

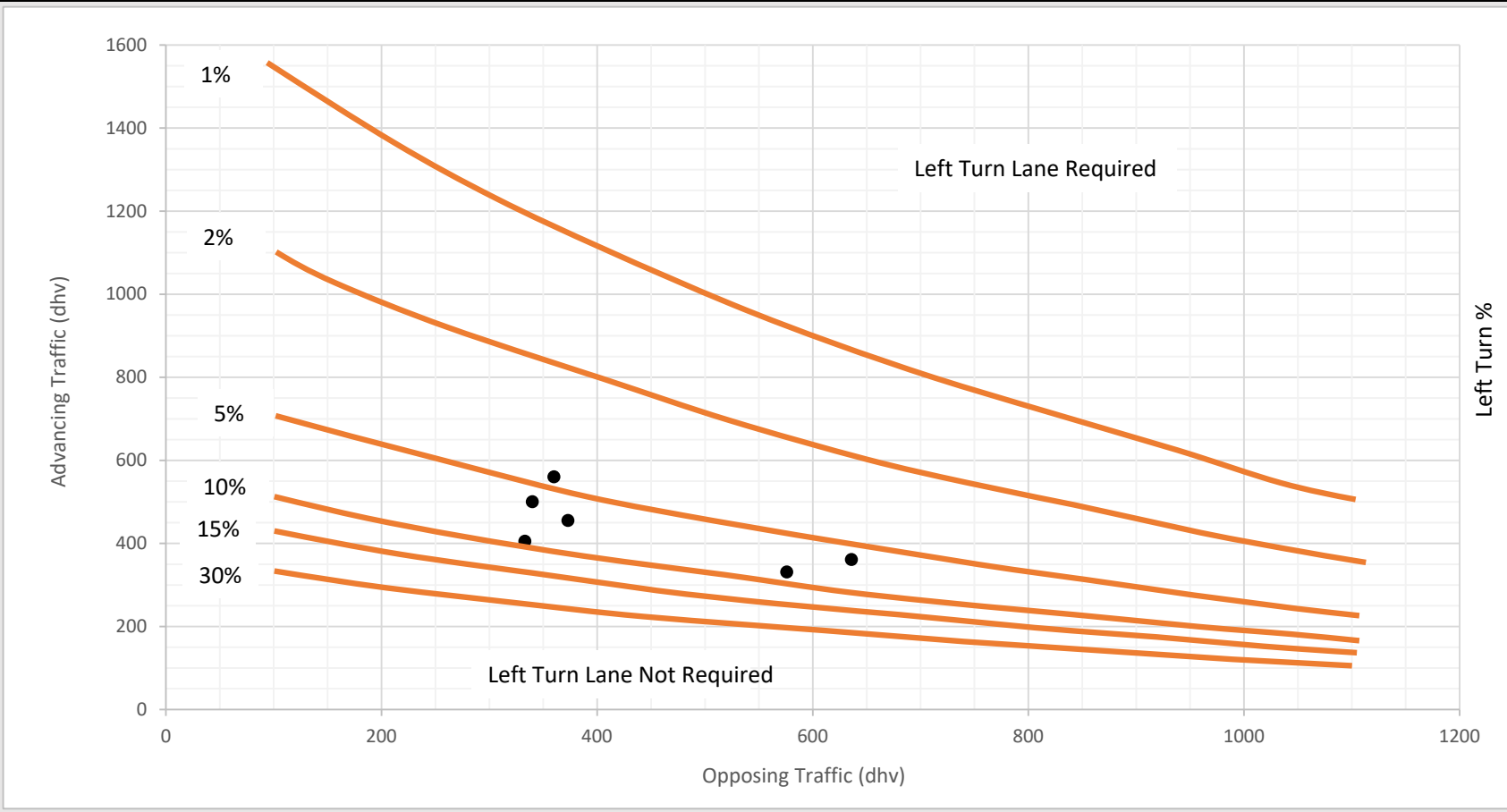
Right Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh North Dr. - SB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	140
% of Approach Volume	30%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	265 (Includes 50' taper)
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	160
% of Approach Volume	31%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	265 (Includes 50' taper)
Minimum Length Required [ft.]	265 (Includes 50' taper)

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Walsh Center (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	331	361	500	560	405	455
Opposing Traffic (dhv)	576	636	340	360	333	373
Left Turn %	6%	6%	16%	16%	5%	4%



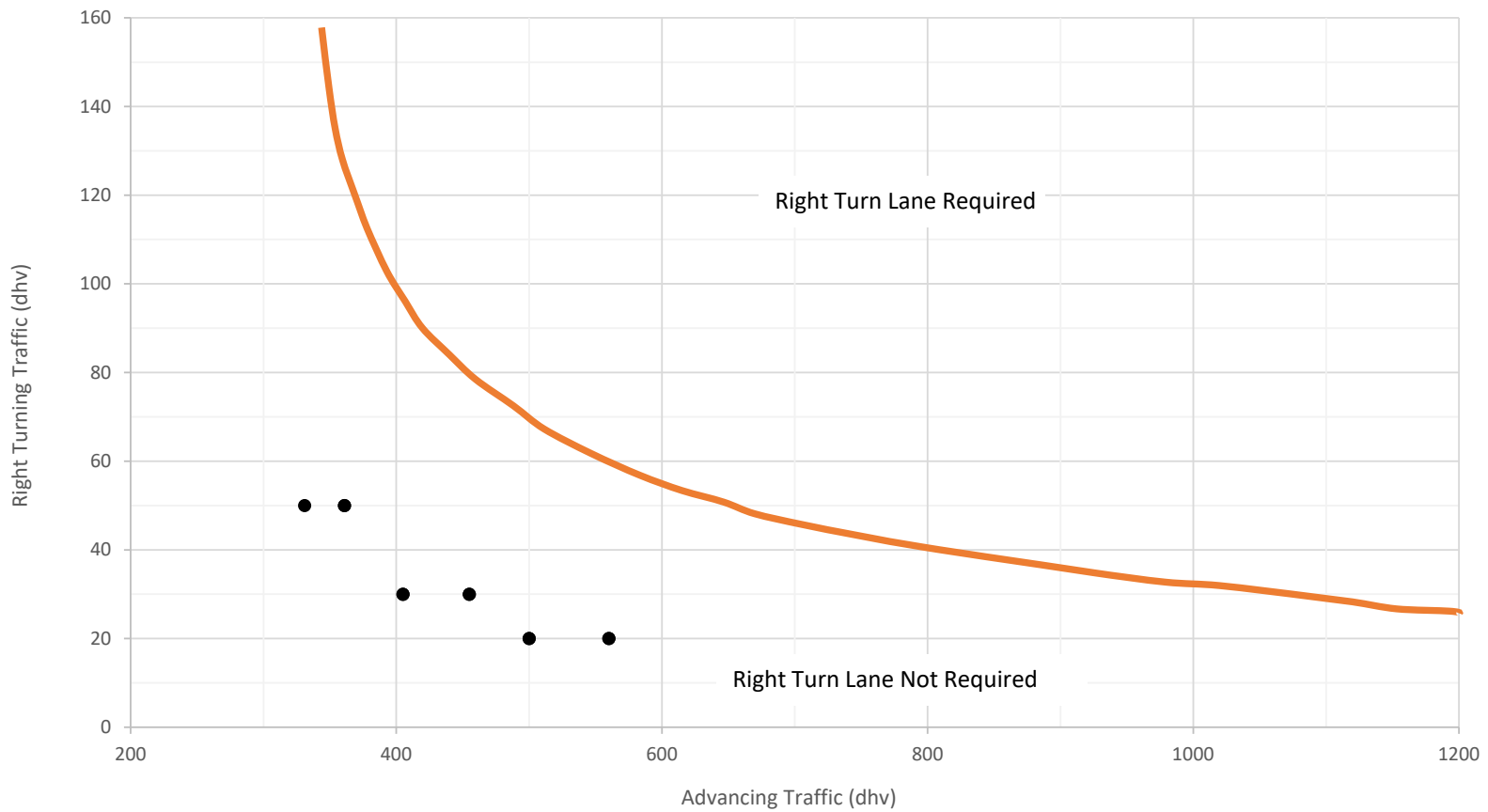
Warrant Satisfied?	NO	YES	YES	YES	NO	NO
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Walsh Center (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	50	50	20	20	30	30
Advancing Traffic (dhv) [Includes Right Turns]	331	361	500	560	405	455



Warrant Satisfied?

NO

NO

NO

NO

NO

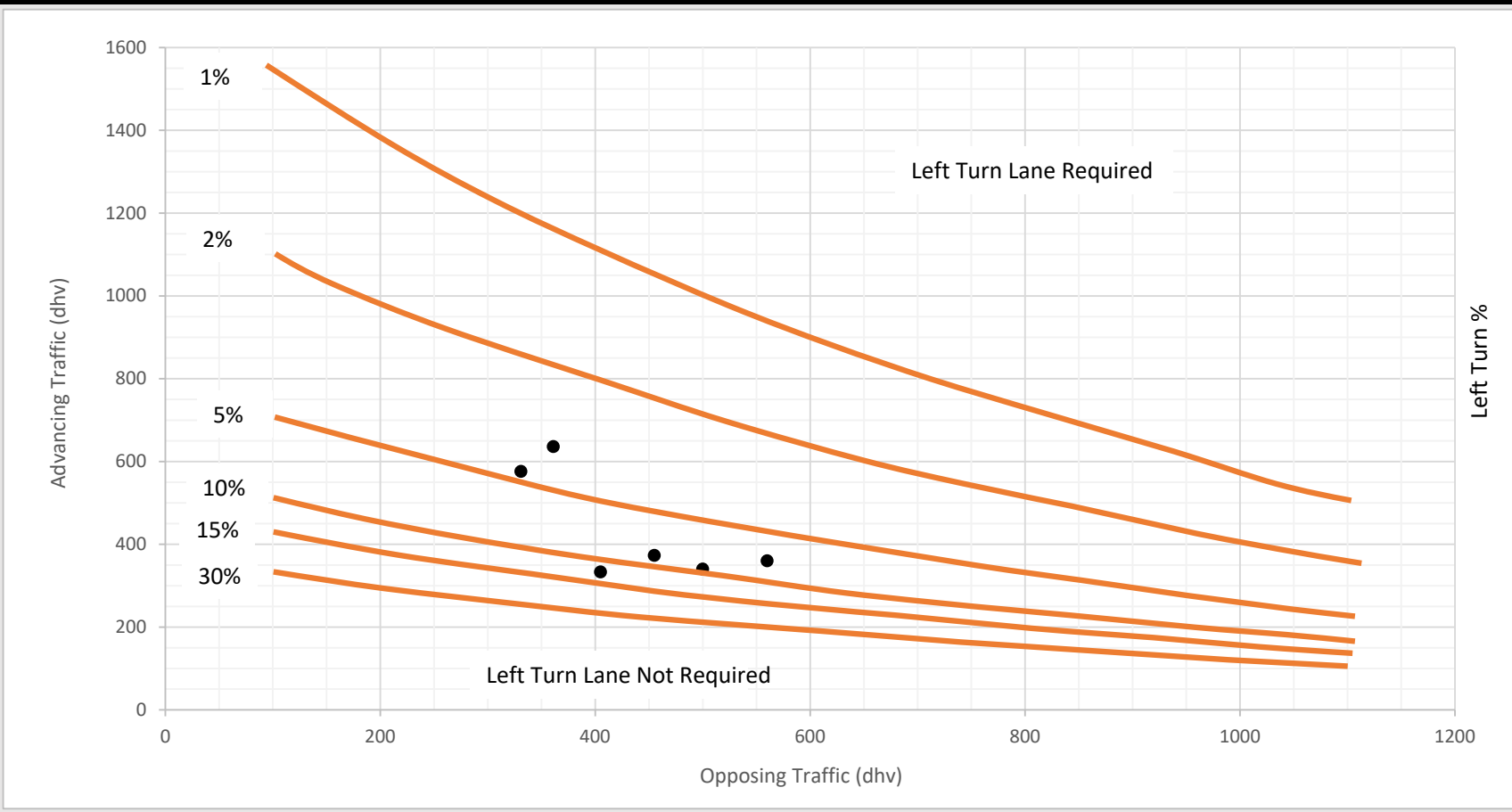
NO

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Walsh Center (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	576	636	340	360	333	373
Opposing Traffic (dhv)	331	361	500	560	405	455
Left Turn %	19%	19%	3%	3%	12%	11%



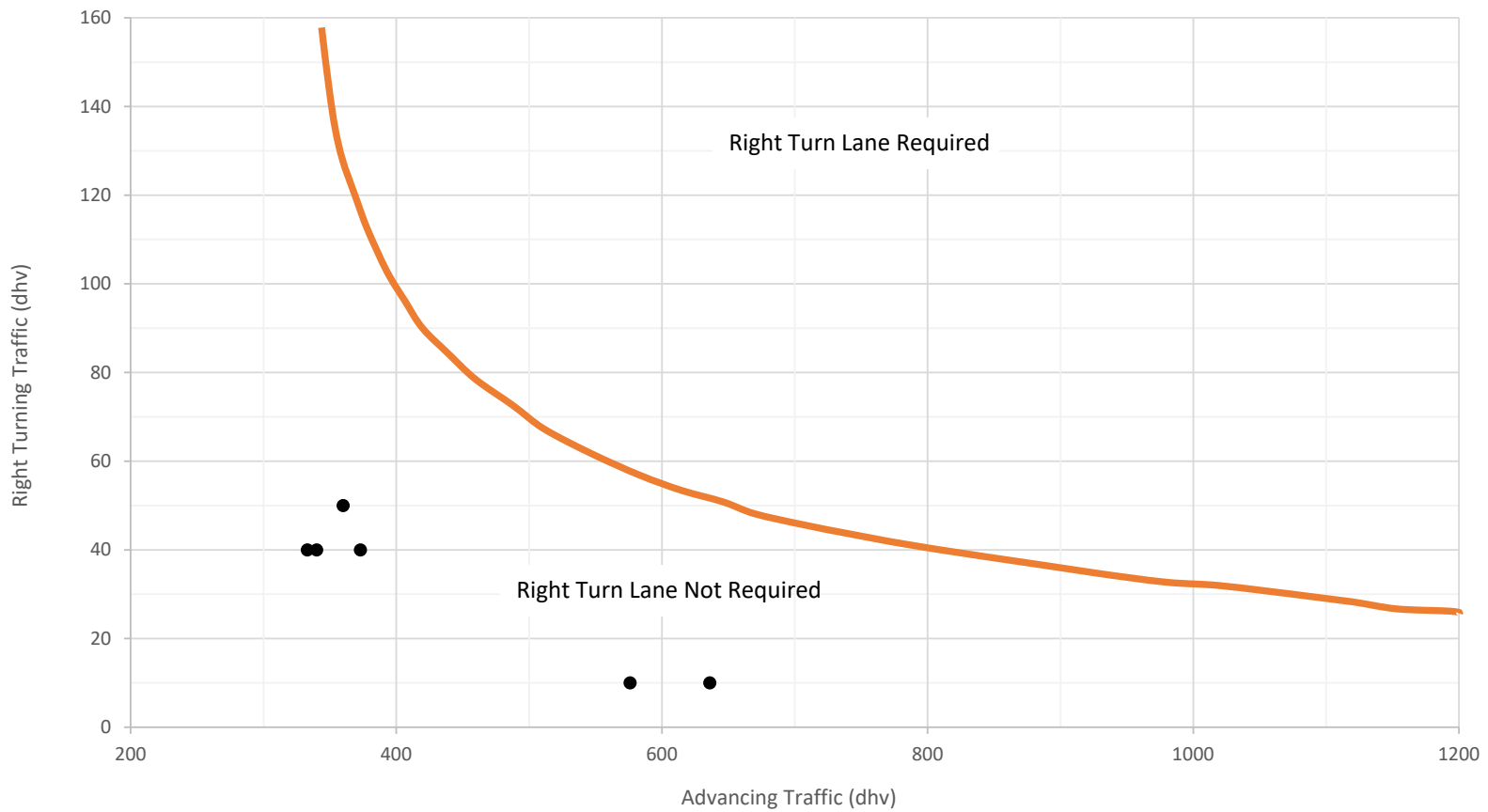
Warrant Satisfied?	YES	YES	NO	NO	YES	YES
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Walsh Center (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	40	50	40	40
Advancing Traffic (dhv) [Includes Right Turns]	576	636	340	360	333	373



Warrant Satisfied?

NO

NO

NO

NO

NO

NO

Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh Center Dr. - NB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	110
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	120
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

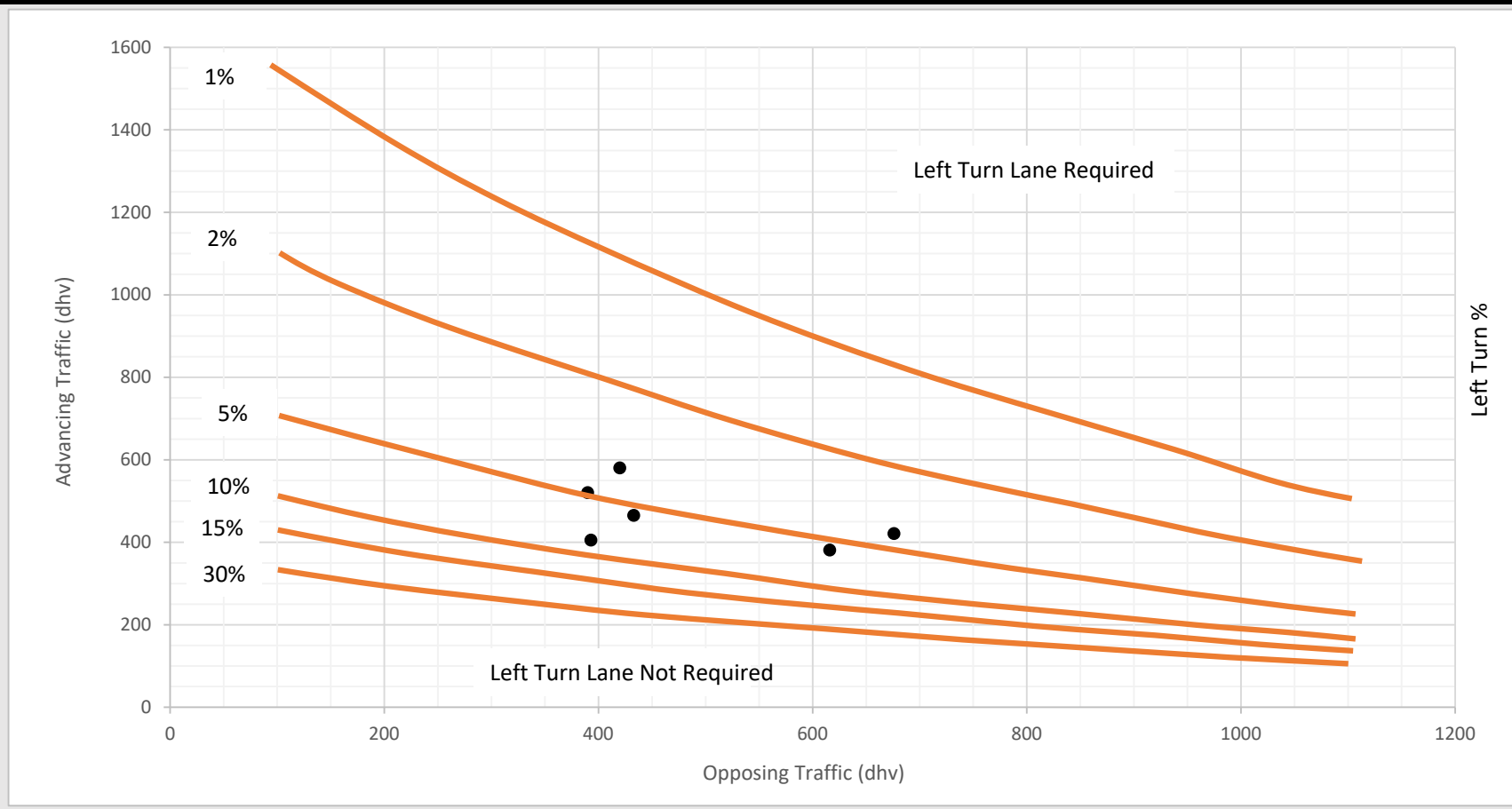
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh Center Dr. - SB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	110
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	120
% of Approach Volume	19%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Walsh South (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	381	421	520	580	405	465
Opposing Traffic (dhv)	616	676	390	420	393	433
Left Turn %	3%	2%	6%	5%	10%	9%



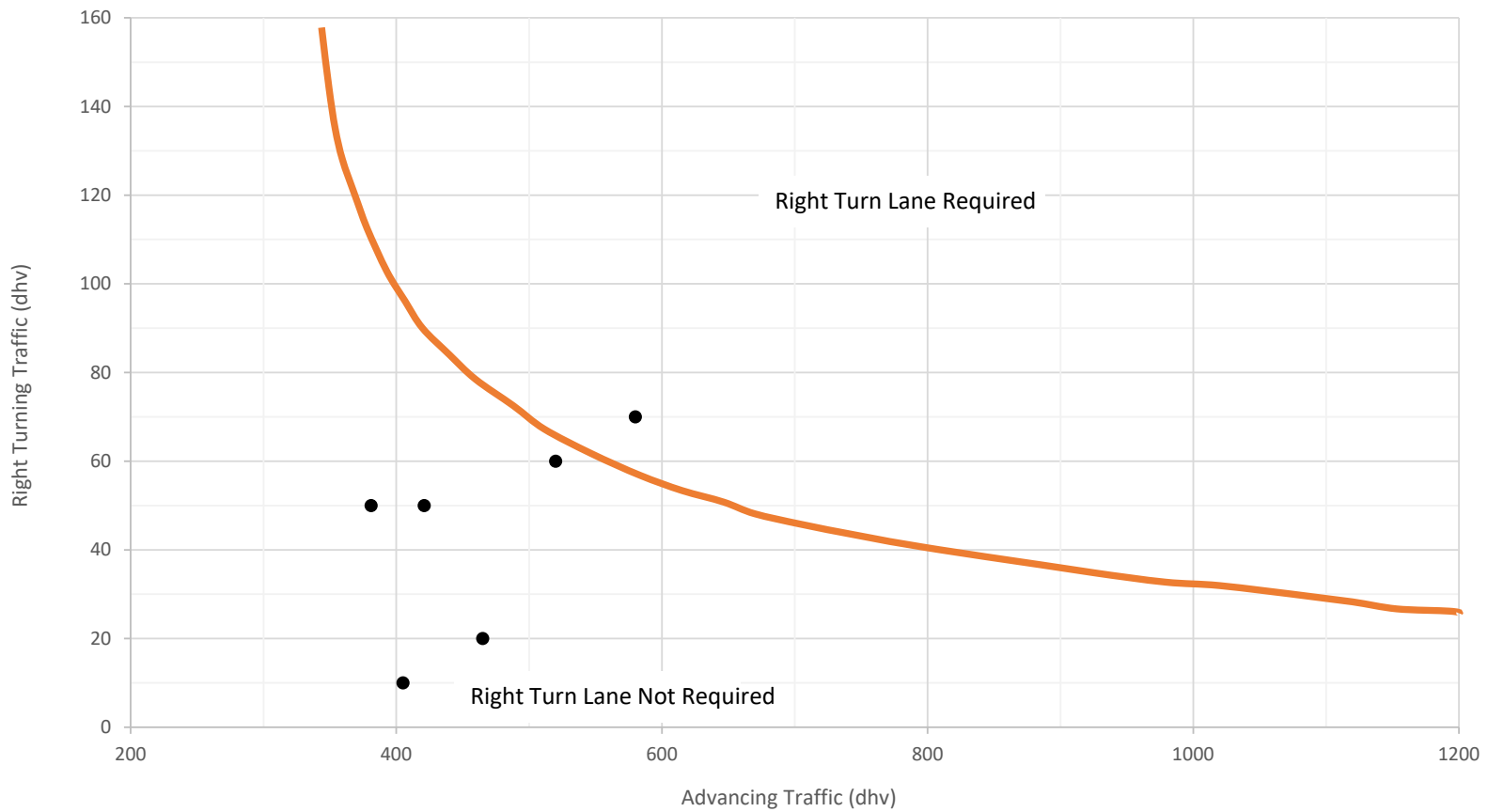
Warrant Satisfied?	NO	NO	YES	YES	YES	YES
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Walsh South (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	50	50	60	70	10	20
Advancing Traffic (dhv) [Includes Right Turns]	381	421	520	580	405	465



Warrant Satisfied?

NO

NO

NO

YES

NO

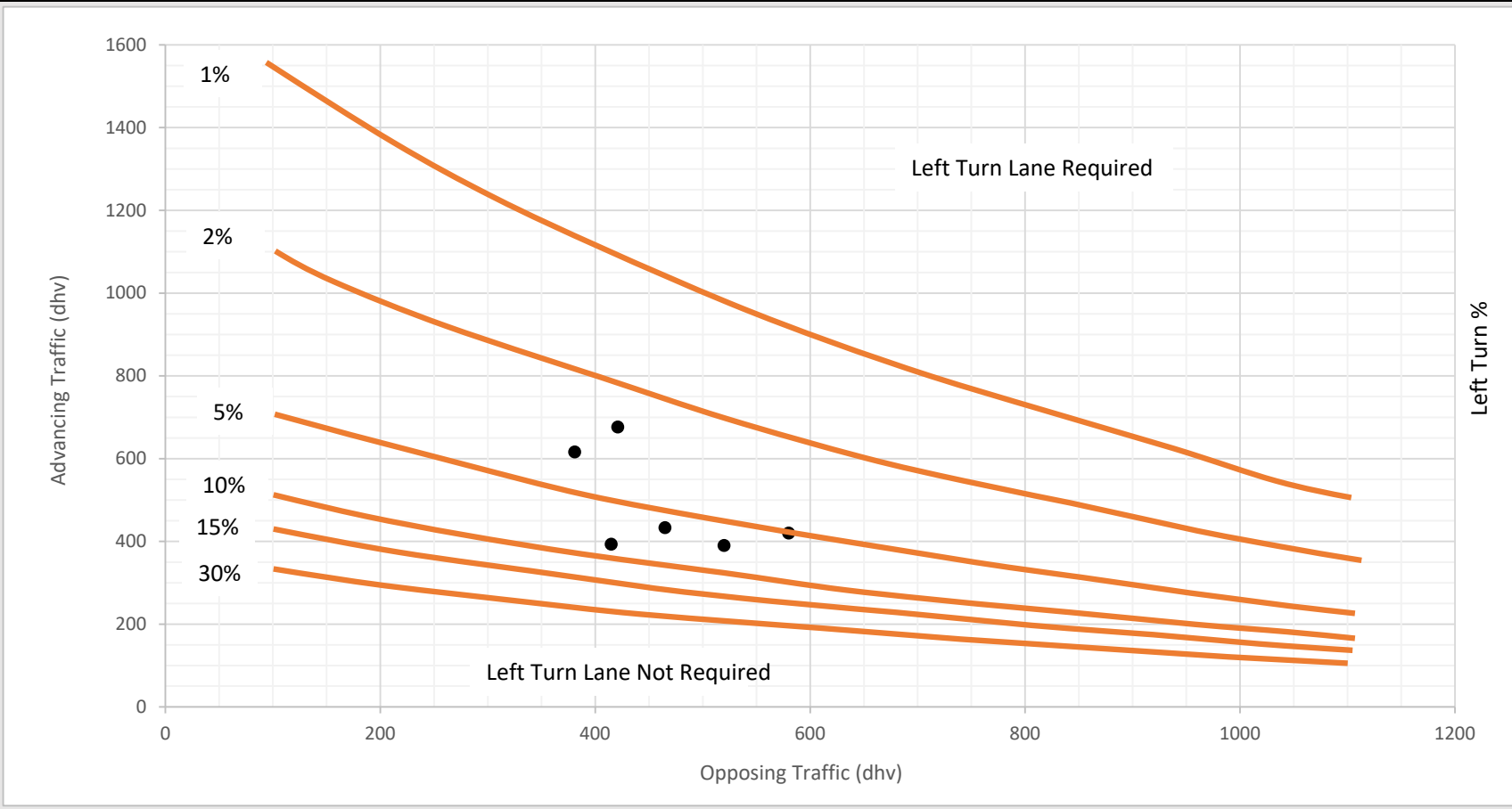
NO

2-Lane Highway Left Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Walsh South (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	616	676	390	420	393	433
Opposing Traffic (dhv)	381	421	520	580	415	465
Left Turn %	13%	13%	15%	17%	5%	5%



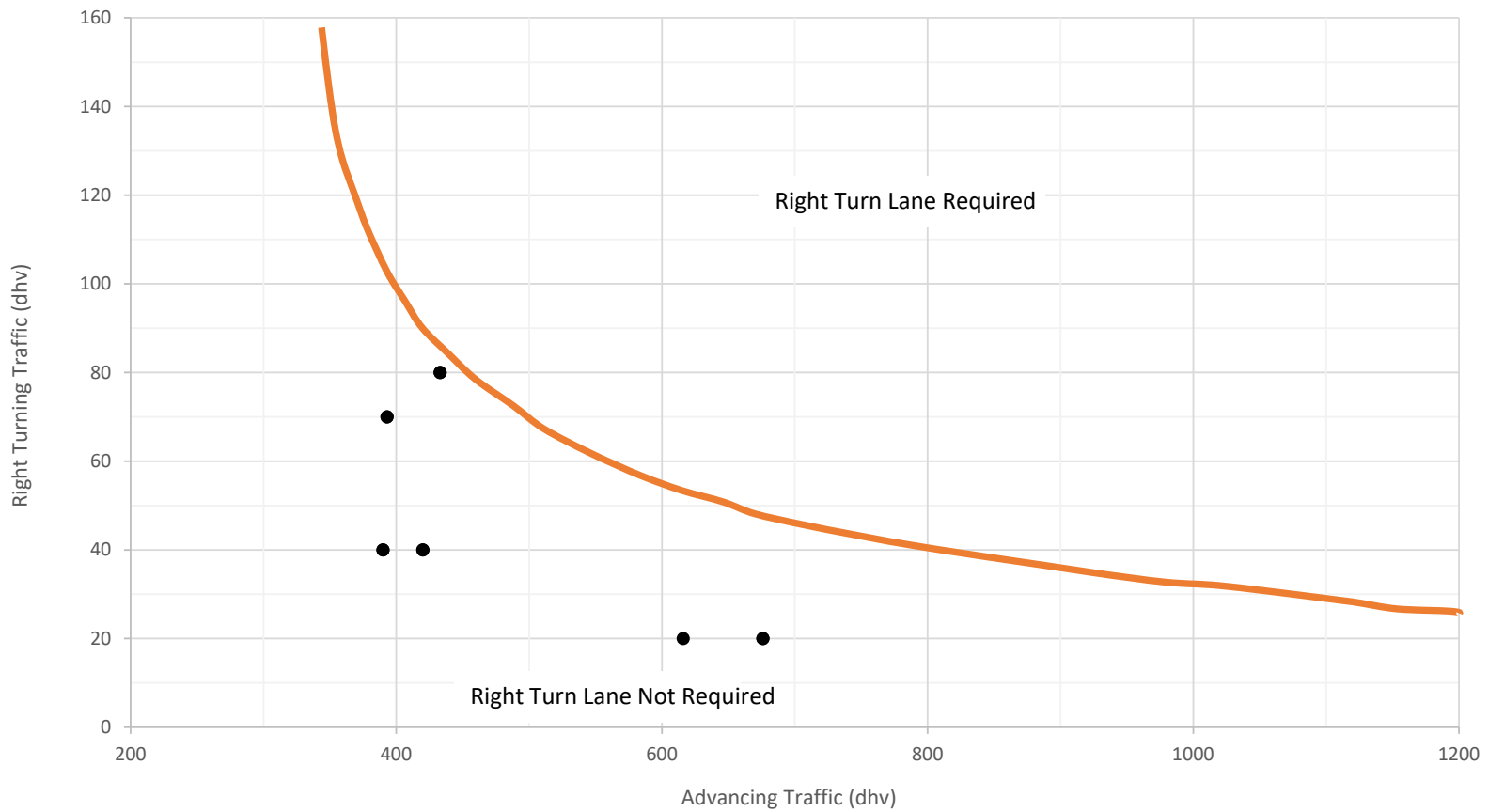
Warrant Satisfied?	YES	YES	YES	YES	NO	NO
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2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Walsh South (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	20	20	40	40	70	80
Advancing Traffic (dhv) [Includes Right Turns]	616	676	390	420	393	433



Warrant Satisfied?

NO

NO

NO

NO

NO

NO

Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh South Dr. - NB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	80
% of Approach Volume	13%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	90
% of Approach Volume	13%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh South Dr. - SB
2021	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	80
% of Approach Volume	16%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	90
% of Approach Volume	16%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

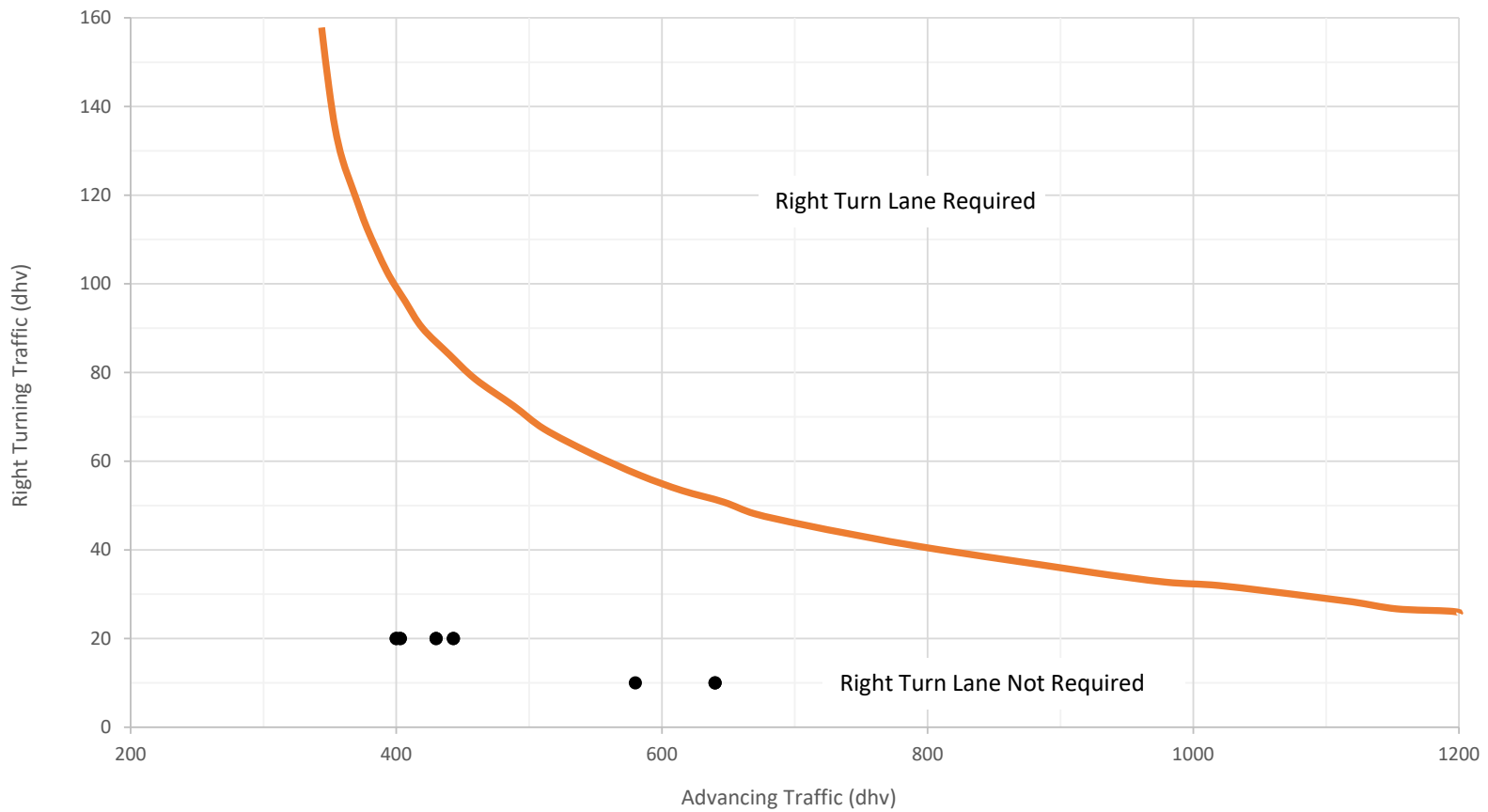
Right Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Walsh South Dr. - SB
2021	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	60
% of Approach Volume	12%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
2041	School Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Right Turn DHV	70
% of Approach Volume	12%
Turn Demand Volume	High
Condition	B or C
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	215 (Includes 50' taper)
Minimum Length Required [ft.]	215 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Wyoga Lake Townhomes (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	10	10	20	20	20	20
Advancing Traffic (dhv) [Includes Right Turns]	580	640	400	430	403	443



Warrant Satisfied?

NO

NO

NO

NO

NO

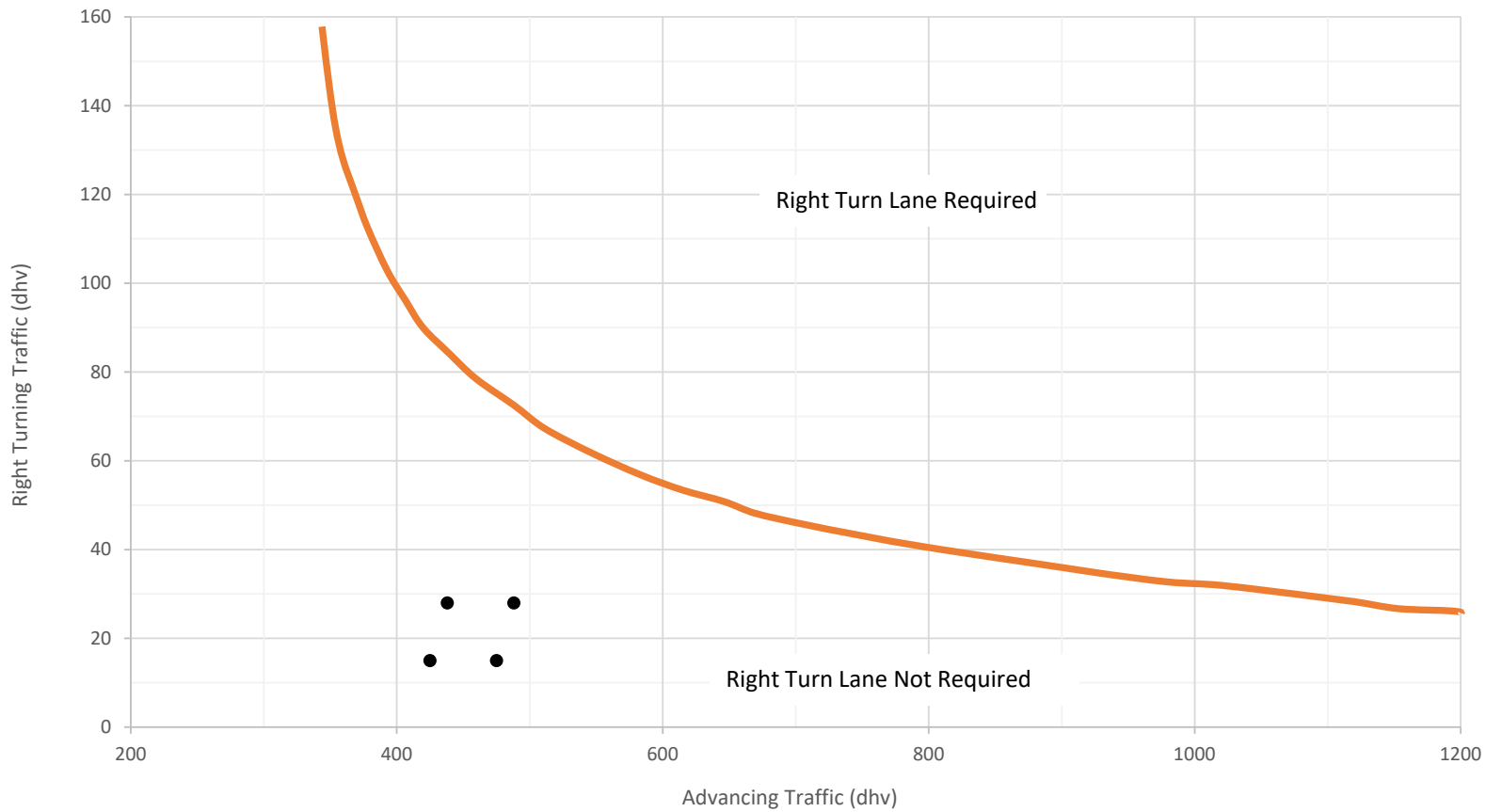
NO

2-Lane Highway Right Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Princeton Place North (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	28	28	-	-	15	15
Advancing Traffic (dhv) [Includes Right Turns]	438	488	-	-	425	475



Warrant Satisfied?

NO

NO

-

-

NO

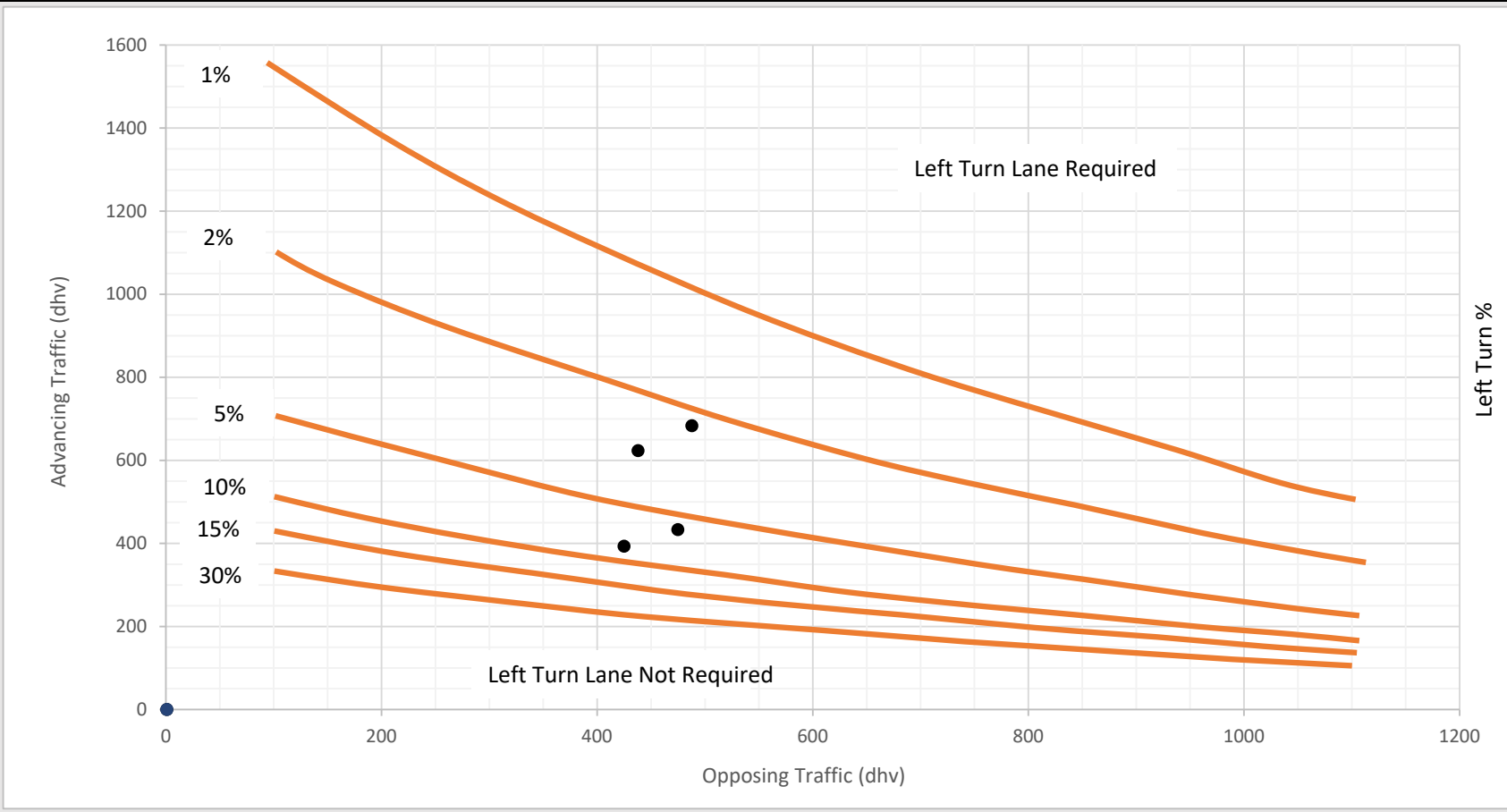
NO

2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Princeton Place North (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	623	683	-	-	393	433
Opposing Traffic (dhv)	438	488	-	-	425	475
Left Turn %	7%	6%	-	-	6%	5%



Warrant Satisfied?	YES	YES	-	-	NO	NO
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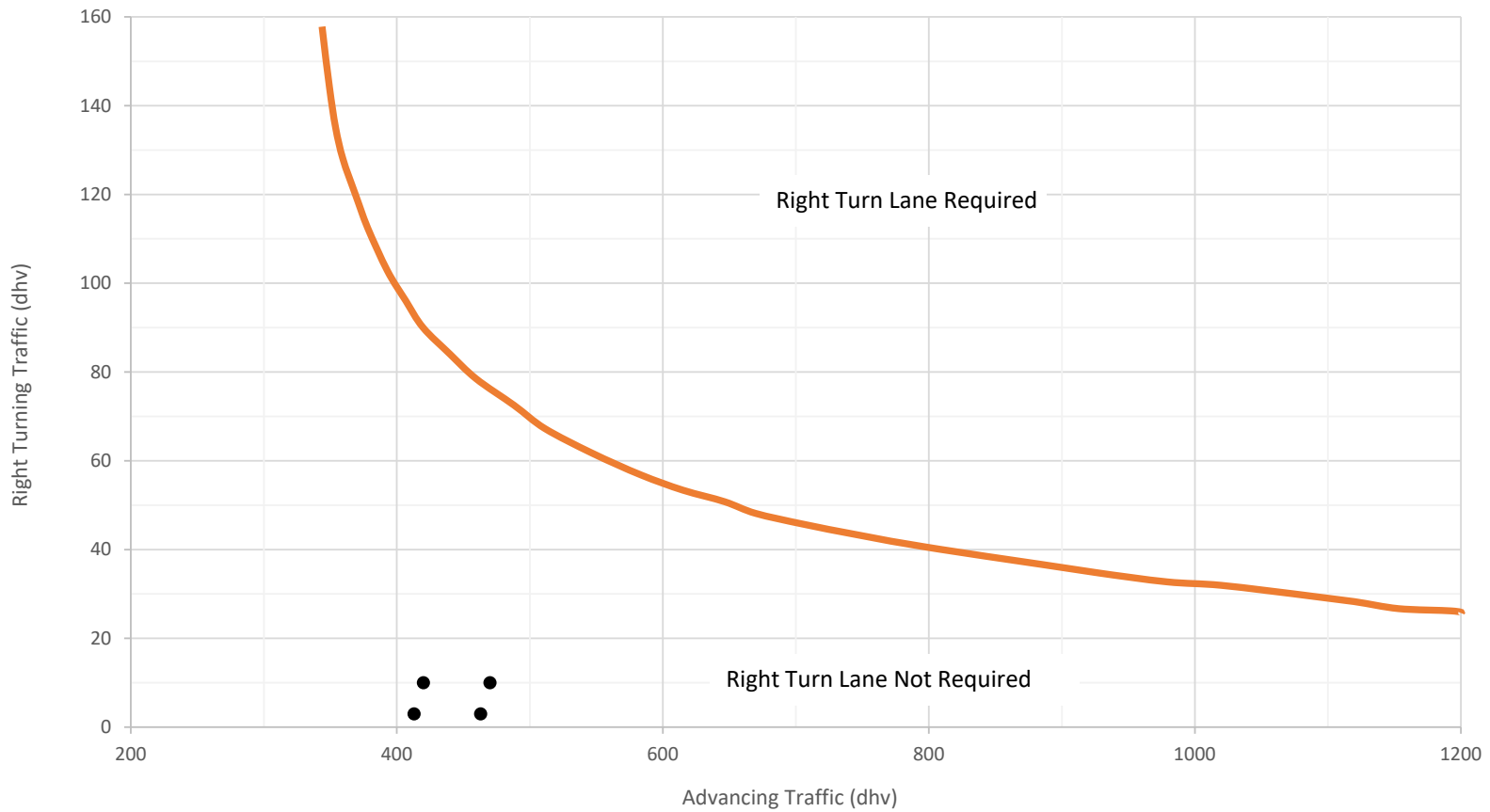
Left Turn Lane Length (Based On ODOT L&D Vol. 1)	
Intersection	Wyoga Lake Rd. & Princeton North Dr. - NB
2021	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	43
% of Approach Volume	7%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
2041	AM Peak
Traffic Control	Unsignalized Through Road
Design Speed	40 mph
Left Turn DHV	43
% of Approach Volume	6%
Turn Demand Volume	Low
Condition	B
Turn Lane Length [ft.] (Condition A)	N/A
Turn Lane Length [ft.] (Condition B)	125 (Includes 50' taper)
Turn Lane Length [ft.] (Condition C)	N/A
Minimum Length Required [ft.]	125 (Includes 50' taper)

2-Lane Highway Right Turn Lane Warrant (≤ 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

Wyoga Lake Rd & Princeton Place South (Southbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Right Turning Traffic (dhv)	3	3	-	-	10	10
Advancing Traffic (dhv) [Includes Right Turns]	413	463	-	-	420	470



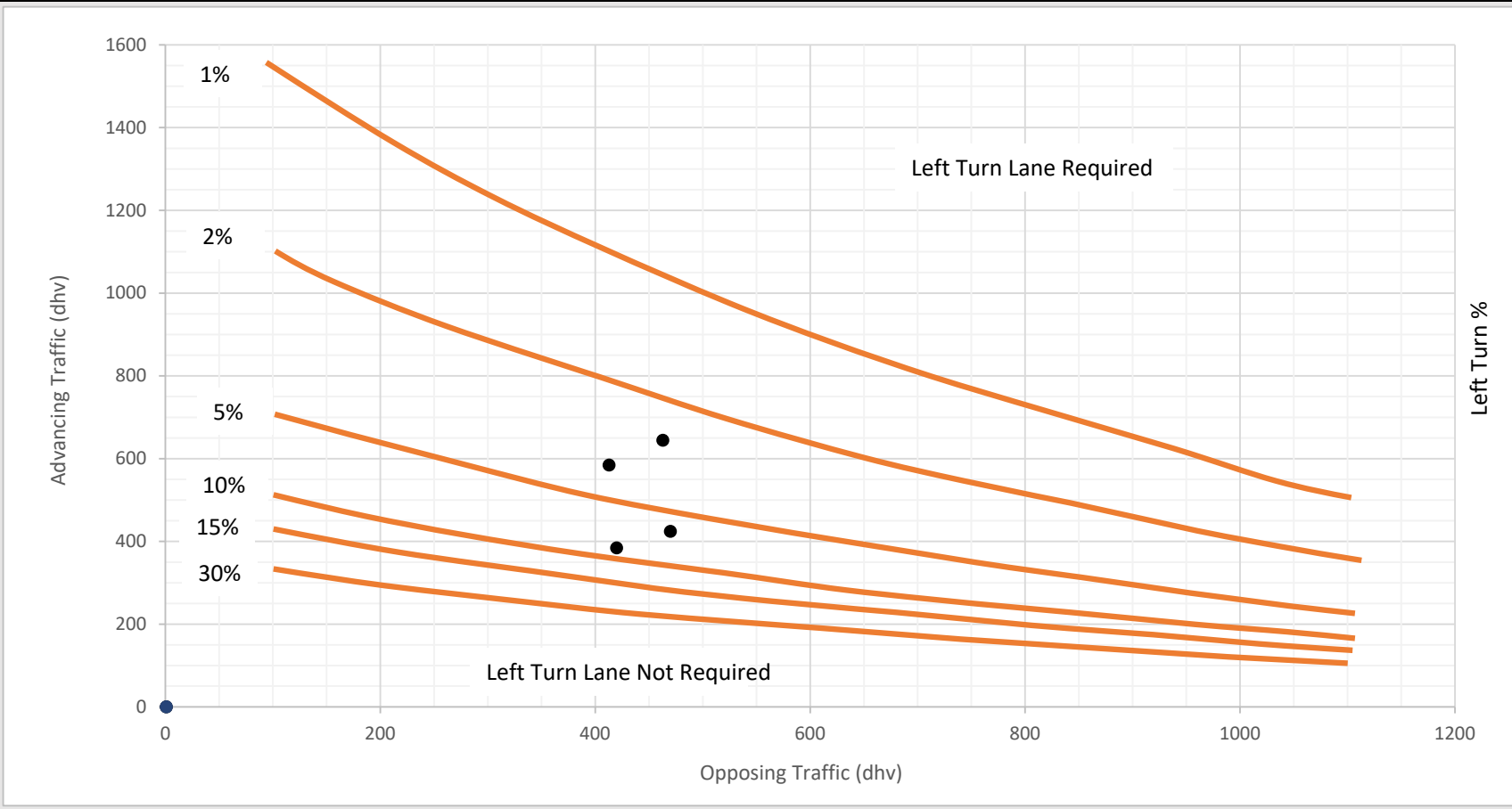
Warrant Satisfied?	NO	NO	-	-	NO	NO
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2-Lane Highway Left Turn Lane Warrant (= < 40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

Wyoga Lake Rd & Princeton Place South (Northbound)

Design Period	AM Peak		School Peak		PM Peak	
	2021	2041	2021	2041	2021	2041
Advancing Traffic (dhv) [Includes Left Turns]	584	644	-	-	384	424
Opposing Traffic (dhv)	413	463	-	-	420	470
Left Turn %	1%	1%	-	-	4%	3%



Warrant Satisfied?	NO	NO	-	-	NO	NO
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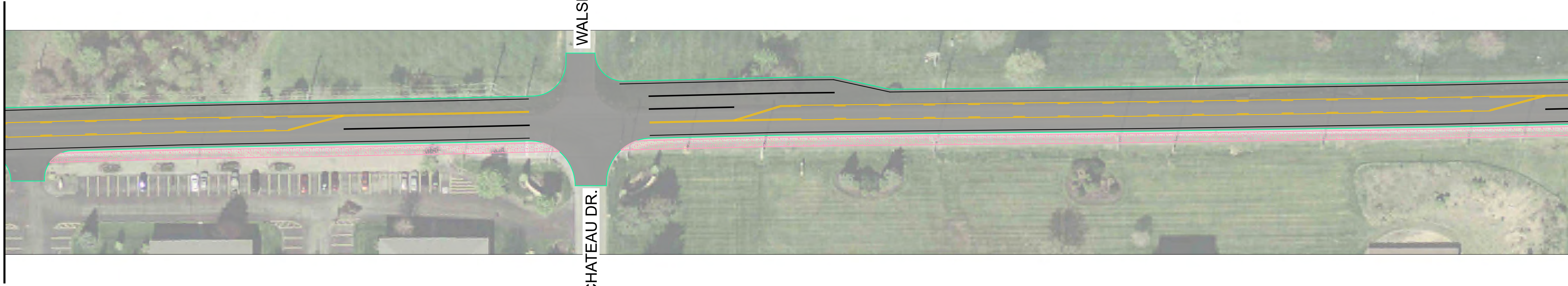
APPENDIX J
PRELIMINARY CONCEPT DRAWINGS,
ANALYSIS & COST ESTIMATE

WYOGA LAKE RD. - PRELIMINARY CONCEPT

MODEL: WLR - Concept 001 PAPER SIZE: 34x22 (in.) DATE: 10/13/2021 TIME: 2:12:11 PM USER: bmorgan
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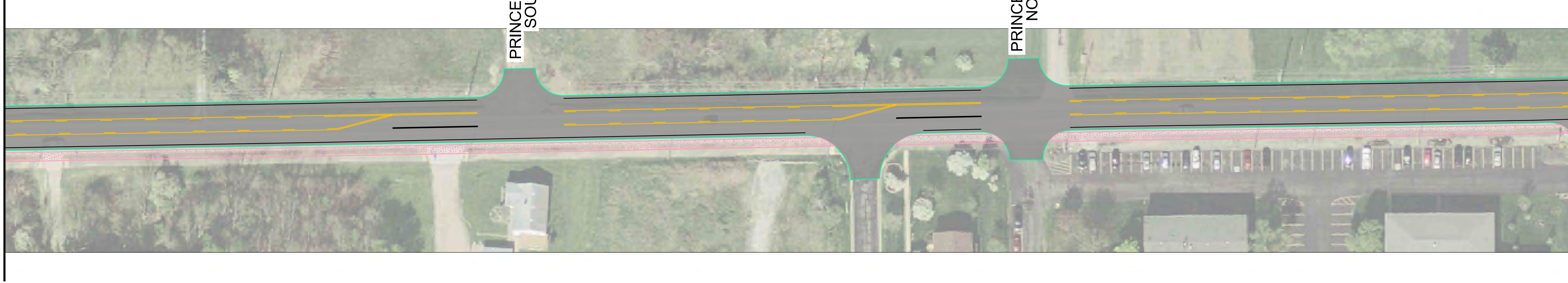


MATCH LINE
SEE ABOVE

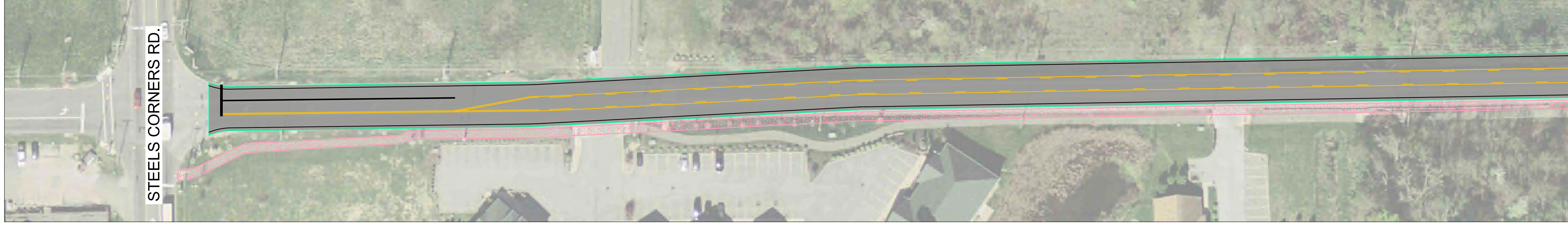


MATCH LINE
SEE SHEET 2

MATCH LINE
SEE ABOVE



MATCH LINE
SEE BELOW



MATCH LINE
SEE BELOW

WYOGA LAKE RD. - PRELIMINARY CONCEPT

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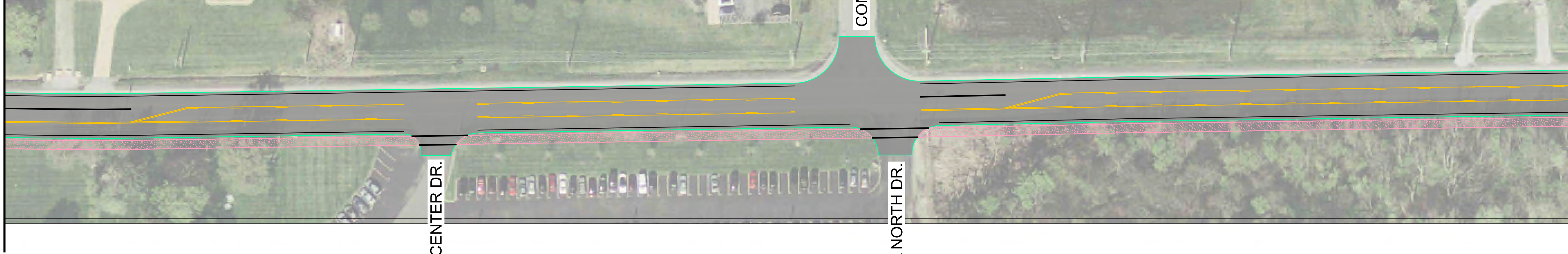


MATCH LINE
SEE ABOVE



SEASONS RD.

MATCH LINE
SEE ABOVE



CVCA CENTER DR.

CVCA NORTH DR.

FALLS
COMMERCE PKWY.

MATCH LINE
SEE SHEET 1



WYOGA
LAKE
BLVD.

WALSH
CENTER
DR.

WALSH
NORTH DR.

CVCA SOUTH DR.

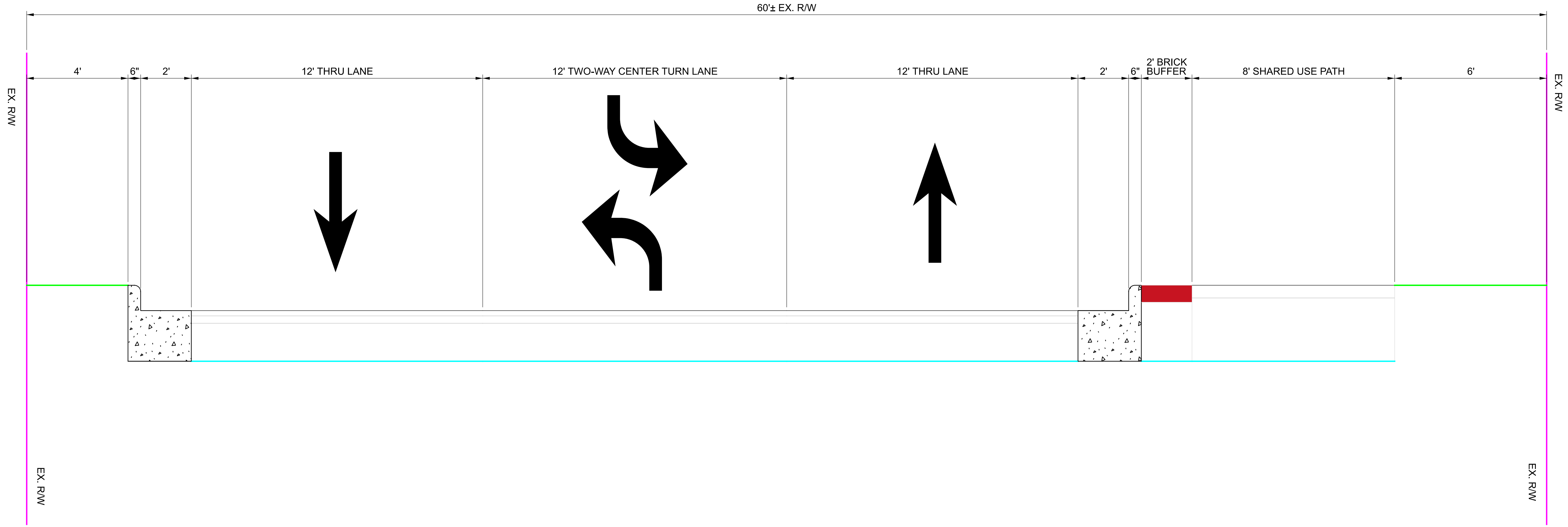
MATCH LINE
SEE BELOW

MATCH LINE
SEE BELOW

WYOGA LAKE RD. - TYPICAL SECTION CONCEPT



MODEL: WLR - Typical Section PAPER SIZE: 34x42 (in.) DATE: 10/13/2021 TIME: 2:13:20 PM USER: bmorogan
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EX. R/W

EX. R/W

Estimate Wyoga Lake Rd

Estimated Cost:\$5,576,936.29

Contingency: 30.00%

Estimated Total: \$7,250,017.18

Widening of Wyoga Lake Road from Steels Corners Road to Seasons Road from a two-lane section to a three-lane section.

Base Date: 10/22/21

Spec Year: 19

Unit System: E

Work Type: ASPHALT

Highway Type:

Urban/Rural Type: URBAN CLASS

Season: SPRING

County: SUMMIT

Latitude of Midpoint: 0

Longitude of Midpoint: 0

District: 04

Federal/State Project Number:

Prepared by System Administrator



<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					

Group 0001: Roadway

0001	201E11000	1.000	LS	\$100,000.00000	\$100,000.00
0002	202E23000 PAVEMENT REMOVED	4,000.000	SY	\$8.94773	\$35,790.92
0003	203E10000 EXCAVATION	6,000.000	CY	\$14.49528	\$86,971.68
0004	203E20000 EMBANKMENT	6,000.000	CY	\$10.35287	\$62,117.22
0005	204E10000 SUBGRADE COMPACTION	17,000.000	SY	\$1.27066	\$21,601.22
0027	SUBGRADE STABILIZATION	1.000	LS	\$200,000.00000	\$200,000.00
0028	ROADWAY MISC: REMOVALS & GUARDRAIL	1.000	LS	\$200,000.00000	\$200,000.00

Total for Group 0001:\$706,481.04

Group 0002: Erosion Control

0006	EROSION CONTROL	1.000	LS	\$350,000.00000	\$350,000.00
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Total for Group 0002:\$350,000.00

Group 0003: Drainage

0014	602E20000 CONCRETE MASONRY	72.000	CY	\$887.15678	\$63,875.29
0015	605E14020 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	16,000.000	FT	\$8.59469	\$137,515.04
0016	611E04400 12" CONDUIT, TYPE B	2,900.000	FT	\$62.35414	\$180,827.01
0017	611E16200 36" CONDUIT, TYPE A	4,000.000	FT	\$249.84000	\$999,360.00
0018	611E98180 CATCH BASIN, NO. 3A	160.000	EACH	\$2,752.54000	\$440,406.40
0019	611E99574 MANHOLE, NO. 3	80.000	EACH	\$3,181.36086	\$254,508.87
0022	895E10040 MANUFACTURED WATER QUALITY STRUCTURE, TYPE 4	3.000	EACH	\$39,050.29000	\$117,150.87

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
0033	611E95500 10' X 8' CONDUIT, TYPE A, 706.05	35.000	FT	\$534.15398	\$18,695.39

Total for Group 0003:\$2,212,338.87

Group 0004: *Pavement*

0007	301E46000 ASPHALT CONCRETE BASE, PG64-22	2,900.000	CY	\$104.95853	\$304,379.74
0008	304E20000 AGGREGATE BASE	4,160.000	CY	\$54.62979	\$227,259.93
0009	407E10000 TACK COAT	3,950.000	GAL	\$2.04720	\$8,086.44
0010	441E50000 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	1,750.000	CY	\$152.46629	\$266,816.01
0011	441E50300 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)	150.000	CY	\$180.96619	\$27,144.93
0013	609E12000 COMBINATION CURB AND GUTTER, TYPE 2	16,000.000	FT	\$18.98751	\$303,800.16
0032	452E12010 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P	2,200.000	SY	\$70.93927	\$156,066.39

Total for Group 0004:\$1,293,553.60

Group 0005: *Waterwork*

0030	638E10200 6" FIRE HYDRANT	18.000	EACH	\$4,982.83000	\$89,690.94
0031	638E00700 6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS	216.000	FT	\$207.74000	\$44,871.84

Total for Group 0005:\$134,562.78

Group 0006: *Traffic Control*

0023	TRAFFIC CONTROL Traffic Control	1.000		\$50,000.00000	\$50,000.00
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Total for Group 0006:\$50,000.00

Group 0007: *Traffic Signals*

0024	Traffic Signals	1.000		\$200,000.00000	\$200,000.00
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<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
---------------	--------------------	-----------------	--------------	-------------------	------------------

Description
Supplemental Description

Total for Group 0007:\$200,000.00

Group 0008: Maintenance of Traffic

0025		1.000		\$130,000.00000	\$130,000.00
	MAINTENANCE OF TRAFFIC MOT				

Total for Group 0008:\$130,000.00




















Group 0009: Incidentals

0026		1.000		\$500,000.00000	\$500,000.00
	INCIDENTALS Incidentals				

Total for Group 0009:\$500,000.00

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

1_2021 AM Peak
 Existing Year - Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	10	90	30	20	110	110	456	10	20	261	50
Future Volume (veh/h)	70	10	90	30	20	110	110	456	10	20	261	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	12	112	38	25	138	138	570	12	25	326	62
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	42	320	124	63	220	602	883	19	427	618	118
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.12	0.48	0.48	0.04	0.40	0.40
Sat Flow, veh/h	1140	207	1585	185	312	1089	1781	1825	38	1781	1528	291
Grp Volume(v), veh/h	100	0	112	201	0	0	138	0	582	25	0	388
Grp Sat Flow(s),veh/h/ln	1346	0	1585	1586	0	0	1781	0	1863	1781	0	1818
Q Serve(g_s), s	0.0	0.0	3.0	2.0	0.0	0.0	1.9	0.0	11.6	0.4	0.0	8.0
Cycle Q Clear(g_c), s	3.0	0.0	3.0	5.6	0.0	0.0	1.9	0.0	11.6	0.4	0.0	8.0
Prop In Lane	0.88		1.00	0.19		0.69	1.00		0.02	1.00		0.16
Lane Grp Cap(c), veh/h	409	0	320	407	0	0	602	0	902	427	0	736
V/C Ratio(X)	0.24	0.00	0.35	0.49	0.00	0.00	0.23	0.00	0.65	0.06	0.00	0.53
Avail Cap(c_a), veh/h	616	0	577	657	0	0	640	0	902	606	0	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	16.9	17.9	0.0	0.0	6.4	0.0	9.6	8.3	0.0	11.1
Incr Delay (d2), s/veh	0.3	0.0	0.7	0.9	0.0	0.0	0.2	0.0	1.6	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.1	2.0	0.0	0.0	0.5	0.0	3.7	0.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	17.6	18.9	0.0	0.0	6.6	0.0	11.2	8.4	0.0	11.7
LnGrp LOS	B	A	B	B	A	A	A	A	B	A	A	B
Approach Vol, veh/h		212			201			720			413	
Approach Delay, s/veh		17.4			18.9			10.3			11.5	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	28.4		14.5	10.4	24.5		14.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	2.4	13.6		5.0	3.9	10.0		7.6				
Green Ext Time (p_c), s	0.0	2.4		0.5	0.1	1.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				12.7								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	596	10	10	421
Future Vol, veh/h	20	20	596	10	10	421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	25	745	13	13	526

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1304	752	0	0	758
Stage 1	752	-	-	-	-
Stage 2	552	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	177	410	-	-	853
Stage 1	466	-	-	-	-
Stage 2	577	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	173	410	-	-	853
Mov Cap-2 Maneuver	311	-	-	-	-
Stage 1	466	-	-	-	-
Stage 2	564	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.8	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	853
HCM Lane V/C Ratio	-	-	0.141	0.015
HCM Control Delay (s)	-	-	16.8	9.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Vol, veh/h	30	0	70	40	0	30	80	516	20	10	321	50
Future Vol, veh/h	30	0	70	40	0	30	80	516	20	10	321	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	0	88	50	0	38	100	645	25	13	401	63

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1304	1297	401	1348	1335	645	464	0	0	670	0	0
Stage 1	427	427	-	845	845	-	-	-	-	-	-	-
Stage 2	877	870	-	503	490	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	137	162	649	128	154	472	1097	-	-	920	-	-
Stage 1	606	585	-	357	379	-	-	-	-	-	-	-
Stage 2	343	369	-	551	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	116	145	649	102	138	472	1097	-	-	920	-	-
Mov Cap-2 Maneuver	116	145	-	102	138	-	-	-	-	-	-	-
Stage 1	551	577	-	325	345	-	-	-	-	-	-	-
Stage 2	287	335	-	470	541	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	28.9		55.4		1.1		0.2	
HCM LOS	D		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	273	154	920	-
HCM Lane V/C Ratio	0.091	-	-	0.458	0.568	0.014	-
HCM Control Delay (s)	8.6	-	-	28.9	55.4	9	-
HCM Lane LOS	A	-	-	D	F	A	-
HCM 95th %tile Q(veh)	0.3	-	-	2.3	2.9	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	↔
Traffic Vol, veh/h	10	10	70	566	321	140
Future Vol, veh/h	10	10	70	566	321	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	88	708	401	175

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1285	401	576	0	-	0
Stage 1	401	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	182	649	997	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	166	649	997	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	404	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	997	-	405	-	-
HCM Lane V/C Ratio	0.088	-	0.062	-	-
HCM Control Delay (s)	9	-	14.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↑
Traffic Vol, veh/h	10	10	466	110	60	451
Future Vol, veh/h	10	10	466	110	60	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	583	138	75	564

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1297	583	0	0	721
Stage 1	583	-	-	-	-
Stage 2	714	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	179	512	-	-	881
Stage 1	558	-	-	-	-
Stage 2	485	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	164	512	-	-	881
Mov Cap-2 Maneuver	299	-	-	-	-
Stage 1	558	-	-	-	-
Stage 2	444	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	378	881
HCM Lane V/C Ratio	-	-	0.066	0.085
HCM Control Delay (s)	-	-	15.2	9.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0.3

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	50	476	0	0	491
Future Vol, veh/h	20	50	476	0	0	491
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	63	595	0	0	592

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1187	595	0	0	595
Stage 1	595	-	-	-	-
Stage 2	592	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	208	504	-	-	981
Stage 1	551	-	-	-	-
Stage 2	553	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	208	504	-	-	981
Mov Cap-2 Maneuver	347	-	-	-	-
Stage 1	551	-	-	-	-
Stage 2	553	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	446	981
HCM Lane V/C Ratio	-	-	0.196	-
HCM Control Delay (s)	-	-	15	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	0	10	0	0	0	10	506	10	20	481	10
Future Vol, veh/h	10	0	10	0	0	0	10	506	10	20	481	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	0	0	0	13	633	13	25	601	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1324	1330	608	1330	1330	640	614	0	0	646	0	0
Stage 1	658	658	-	666	666	-	-	-	-	-	-	-
Stage 2	666	672	-	664	664	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	133	155	496	132	155	475	965	-	-	939	-	-
Stage 1	453	461	-	449	457	-	-	-	-	-	-	-
Stage 2	449	454	-	450	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	128	148	496	124	148	475	965	-	-	939	-	-
Mov Cap-2 Maneuver	128	148	-	124	148	-	-	-	-	-	-	-
Stage 1	443	449	-	440	447	-	-	-	-	-	-	-
Stage 2	440	444	-	427	446	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	25.2		0		0.2		0.3	
HCM LOS	D		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	965	-	-	203	-	939	-	-
HCM Lane V/C Ratio	0.013	-	-	0.123	-	0.027	-	-
HCM Control Delay (s)	8.8	0	-	25.2	0	8.9	-	-
HCM Lane LOS	A	A	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑	↑	
Traffic Vol, veh/h	16	24	43	580	410	28
Future Vol, veh/h	16	24	43	580	410	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	26	47	630	446	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1185	461	476	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	209	600	1086	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	600	1086	-	-	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	455	-	-
HCM Lane V/C Ratio	0.043	-	0.096	-	-
HCM Control Delay (s)	8.5	-	13.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑	↑	
Traffic Vol, veh/h	10	14	4	580	410	3
Future Vol, veh/h	10	14	4	580	410	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	15	4	630	446	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1086	448	449	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	239	611	1111	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	238	611	1111	-	-	-
Mov Cap-2 Maneuver	371	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	526	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1111	-	481	-	-
HCM Lane V/C Ratio	0.004	-	0.054	-	-
HCM Control Delay (s)	8.3	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

1_2041 AM Peak
 Design Year - Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗		↖	↗	
Traffic Volume (veh/h)	80	10	100	30	20	120	120	506	10	20	291	50
Future Volume (veh/h)	80	10	100	30	20	120	120	506	10	20	291	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	12	125	38	25	150	150	632	12	25	364	62
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	358	35	319	120	59	222	578	888	17	387	628	107
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.12	0.49	0.49	0.04	0.40	0.40
Sat Flow, veh/h	1094	176	1585	171	291	1102	1781	1829	35	1781	1557	265
Grp Volume(v), veh/h	112	0	125	213	0	0	150	0	644	25	0	426
Grp Sat Flow(s),veh/h/ln	1270	0	1585	1564	0	0	1781	0	1864	1781	0	1823
Q Serve(g_s), s	0.0	0.0	3.4	2.4	0.0	0.0	2.0	0.0	13.5	0.4	0.0	9.0
Cycle Q Clear(g_c), s	3.8	0.0	3.4	6.2	0.0	0.0	2.0	0.0	13.5	0.4	0.0	9.0
Prop In Lane	0.89		1.00	0.18		0.70	1.00		0.02	1.00		0.15
Lane Grp Cap(c), veh/h	393	0	319	400	0	0	578	0	905	387	0	735
V/C Ratio(X)	0.28	0.00	0.39	0.53	0.00	0.00	0.26	0.00	0.71	0.06	0.00	0.58
Avail Cap(c_a), veh/h	596	0	575	649	0	0	609	0	905	565	0	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	17.2	18.2	0.0	0.0	6.6	0.0	10.0	8.7	0.0	11.5
Incr Delay (d2), s/veh	0.4	0.0	0.8	1.1	0.0	0.0	0.2	0.0	2.6	0.1	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.2	2.2	0.0	0.0	0.5	0.0	4.6	0.1	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.7	0.0	18.0	19.3	0.0	0.0	6.9	0.0	12.7	8.8	0.0	12.5
LnGrp LOS	B	A	B	B	A	A	A	A	B	A	A	B
Approach Vol, veh/h		237			213			794			451	
Approach Delay, s/veh		17.8			19.3			11.6			12.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	28.6		14.5	10.6	24.5		14.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	2.4	15.5		5.8	4.0	11.0		8.2				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.1	1.5		0.5				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	20	656	10	10	471
Future Vol, veh/h	20	20	656	10	10	471
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	25	820	13	13	589

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1442	827	0	0	833
Stage 1	827	-	-	-	-
Stage 2	615	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	146	371	-	-	800
Stage 1	430	-	-	-	-
Stage 2	539	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	142	371	-	-	800
Mov Cap-2 Maneuver	280	-	-	-	-
Stage 1	430	-	-	-	-
Stage 2	526	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	319	800
HCM Lane V/C Ratio	-	-	0.157	0.016
HCM Control Delay (s)	-	-	18.4	9.6
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Intersection												
Int Delay, s/veh	9.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Vol, veh/h	30	0	80	40	0	40	90	566	20	10	361	50
Future Vol, veh/h	30	0	80	40	0	40	90	566	20	10	361	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	0	100	50	0	50	113	708	25	13	451	63

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1449	1436	451	1493	1474	708	514	0	0	733	0	0
Stage 1	477	477	-	934	934	-	-	-	-	-	-	-
Stage 2	972	959	-	559	540	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	109	133	608	102	127	435	1052	-	-	872	-	-
Stage 1	569	556	-	319	345	-	-	-	-	-	-	-
Stage 2	304	335	-	513	521	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	88	117	608	77	112	435	1052	-	-	872	-	-
Mov Cap-2 Maneuver	88	117	-	77	112	-	-	-	-	-	-	-
Stage 1	508	548	-	285	308	-	-	-	-	-	-	-
Stage 2	240	299	-	422	513	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	40.5		90		1.2		0.2	
HCM LOS	E		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	233	131	872	-
HCM Lane V/C Ratio	0.107	-	-	0.59	0.763	0.014	-
HCM Control Delay (s)	8.8	-	-	40.5	90	9.2	-
HCM Lane LOS	A	-	-	E	F	A	-
HCM 95th %tile Q(veh)	0.4	-	-	3.4	4.5	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	↔
Traffic Vol, veh/h	10	10	80	626	351	160
Future Vol, veh/h	10	10	80	626	351	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	100	783	439	200

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1422	439	639	0	-	0
Stage 1	439	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	150	618	945	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	134	618	945	-	-	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	362	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	945	-	366	-	-
HCM Lane V/C Ratio	0.106	-	0.068	-	-
HCM Control Delay (s)	9.3	-	15.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↑
Traffic Vol, veh/h	10	10	516	120	70	501
Future Vol, veh/h	10	10	516	120	70	501
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	645	150	88	626

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1447	645	0	0	795
Stage 1	645	-	-	-	-
Stage 2	802	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	145	472	-	-	826
Stage 1	522	-	-	-	-
Stage 2	441	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	129	472	-	-	826
Mov Cap-2 Maneuver	262	-	-	-	-
Stage 1	522	-	-	-	-
Stage 2	394	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	1.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	337	826
HCM Lane V/C Ratio	-	-	0.074	0.106
HCM Control Delay (s)	-	-	16.5	9.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	60	526	0	0	551
Future Vol, veh/h	20	60	526	0	0	551
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	75	658	0	0	664

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1322	658	0	0	658
Stage 1	658	-	-	-	-
Stage 2	664	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	173	464	-	-	930
Stage 1	515	-	-	-	-
Stage 2	512	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	173	464	-	-	930
Mov Cap-2 Maneuver	313	-	-	-	-
Stage 1	515	-	-	-	-
Stage 2	512	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	414	930
HCM Lane V/C Ratio	-	-	0.242	-
HCM Control Delay (s)	-	-	16.4	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	0	10	0	0	0	10	566	10	20	541	10
Future Vol, veh/h	10	0	10	0	0	0	10	566	10	20	541	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	0	0	0	13	708	13	25	676	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1474	1480	683	1480	1480	715	689	0	0	721	0	0
Stage 1	733	733	-	741	741	-	-	-	-	-	-	-
Stage 2	741	747	-	739	739	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	105	125	449	104	125	431	905	-	-	881	-	-
Stage 1	412	426	-	408	423	-	-	-	-	-	-	-
Stage 2	408	420	-	409	424	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	101	119	449	97	119	431	905	-	-	881	-	-
Mov Cap-2 Maneuver	101	119	-	97	119	-	-	-	-	-	-	-
Stage 1	402	414	-	398	413	-	-	-	-	-	-	-
Stage 2	398	410	-	386	412	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	30.7		0		0.2		0.3	
HCM LOS	D		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	905	-	-	165	-	881	-
HCM Lane V/C Ratio	0.014	-	-	0.152	-	0.028	-
HCM Control Delay (s)	9	0	-	30.7	0	9.2	-
HCM Lane LOS	A	A	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	24	43	640	460	28
Future Vol, veh/h	16	24	43	640	460	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	26	47	696	500	30

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1305	515	530	0	-	0
Stage 1	515	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	177	560	1037	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	169	560	1037	-	-	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	420	-	-
HCM Lane V/C Ratio	0.045	-	0.104	-	-
HCM Control Delay (s)	8.6	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	14	4	640	460	3
Future Vol, veh/h	10	14	4	640	460	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	15	4	696	500	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1206	502	503	0	-	0
Stage 1	502	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	203	569	1061	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	569	1061	-	-	-
Mov Cap-2 Maneuver	338	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	490	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1061	-	443	-	-
HCM Lane V/C Ratio	0.004	-	0.059	-	-
HCM Control Delay (s)	8.4	-	13.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

2_2021 School Peak
 Existing Year - Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗		↖	↗	
Traffic Volume (veh/h)	70	30	90	30	10	20	10	290	40	80	400	20
Future Volume (veh/h)	70	30	90	30	10	20	10	290	40	80	400	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	38	112	34	11	23	11	322	44	100	500	25
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.90	0.90	0.90	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	121	321	213	80	93	448	664	91	608	882	44
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.02	0.41	0.41	0.11	0.50	0.50
Sat Flow, veh/h	998	595	1585	503	392	458	1781	1611	220	1781	1766	88
Grp Volume(v), veh/h	126	0	112	68	0	0	11	0	366	100	0	525
Grp Sat Flow(s),veh/h/ln	1592	0	1585	1353	0	0	1781	0	1831	1781	0	1854
Q Serve(g_s), s	0.0	0.0	2.9	0.0	0.0	0.0	0.2	0.0	7.1	1.3	0.0	9.6
Cycle Q Clear(g_c), s	2.9	0.0	2.9	2.9	0.0	0.0	0.2	0.0	7.1	1.3	0.0	9.6
Prop In Lane	0.70		1.00	0.50		0.34	1.00		0.12	1.00		0.05
Lane Grp Cap(c), veh/h	449	0	321	386	0	0	448	0	755	608	0	926
V/C Ratio(X)	0.28	0.00	0.35	0.18	0.00	0.00	0.02	0.00	0.48	0.16	0.00	0.57
Avail Cap(c_a), veh/h	700	0	588	625	0	0	670	0	811	675	0	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	16.6	16.0	0.0	0.0	8.2	0.0	10.5	6.0	0.0	8.5
Incr Delay (d2), s/veh	0.3	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	1.0	0.6	0.0	0.0	0.1	0.0	2.3	0.3	0.0	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	0.0	17.2	16.3	0.0	0.0	8.2	0.0	11.0	6.1	0.0	9.3
LnGrp LOS	B	A	B	B	A	A	A	A	B	A	A	A
Approach Vol, veh/h		238			68			377			625	
Approach Delay, s/veh		17.1			16.3			10.9			8.8	
Approach LOS		B			B			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	24.5		14.3	5.5	28.7		14.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	3.3	9.1		4.9	2.2	11.6		4.9				
Green Ext Time (p_c), s	0.1	1.8		0.6	0.0	1.9		0.1				

Intersection Summary												
HCM 6th Ctrl Delay				11.3								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	380	20	10	470
Future Vol, veh/h	10	10	380	20	10	470
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	475	25	13	588

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1102	488	0	0	500
Stage 1	488	-	-	-	-
Stage 2	614	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	234	580	-	-	1064
Stage 1	617	-	-	-	-
Stage 2	540	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	230	580	-	-	1064
Mov Cap-2 Maneuver	364	-	-	-	-
Stage 1	617	-	-	-	-
Stage 2	530	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	447	1064
HCM Lane V/C Ratio	-	-	0.056	0.012
HCM Control Delay (s)	-	-	13.5	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Vol, veh/h	10	0	30	20	10	40	60	290	40	30	430	60
Future Vol, veh/h	10	0	30	20	10	40	60	290	40	30	430	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	38	25	13	50	75	363	50	38	538	75

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1184	1177	538	1184	1202	363	613	0	0	413	0	0
Stage 1	614	614	-	513	513	-	-	-	-	-	-	-
Stage 2	570	563	-	671	689	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	166	191	543	166	185	682	966	-	-	1146	-	-
Stage 1	479	483	-	544	536	-	-	-	-	-	-	-
Stage 2	506	509	-	446	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	133	170	543	142	165	682	966	-	-	1146	-	-
Mov Cap-2 Maneuver	133	170	-	142	165	-	-	-	-	-	-	-
Stage 1	442	467	-	502	494	-	-	-	-	-	-	-
Stage 2	422	469	-	401	431	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19		24.7		1.4		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	966	-	-	307	269	1146	-
HCM Lane V/C Ratio	0.078	-	-	0.163	0.325	0.033	-
HCM Control Delay (s)	9	-	-	19	24.7	8.2	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1.4	0.1	-

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	Y
Traffic Vol, veh/h	50	80	30	350	420	10
Future Vol, veh/h	50	80	30	350	420	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	100	35	407	525	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1002	525	538	0	-	0
Stage 1	525	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	269	552	1030	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	260	552	1030	-	-	-
Mov Cap-2 Maneuver	391	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	624	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1030	-	477	-	-
HCM Lane V/C Ratio	0.034	-	0.341	-	-
HCM Control Delay (s)	8.6	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↑
Traffic Vol, veh/h	10	10	330	70	80	420
Future Vol, veh/h	10	10	330	70	80	420
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	413	88	100	525

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1138	413	0	0	501
Stage 1	413	-	-	-	-
Stage 2	725	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	223	639	-	-	1063
Stage 1	668	-	-	-	-
Stage 2	479	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	202	639	-	-	1063
Mov Cap-2 Maneuver	326	-	-	-	-
Stage 1	668	-	-	-	-
Stage 2	434	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	1063
HCM Lane V/C Ratio	-	-	0.058	0.094
HCM Control Delay (s)	-	-	13.8	8.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.3

Intersection						
Int Delay, s/veh	5.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	120	340	0	0	380
Future Vol, veh/h	120	120	340	0	0	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	150	425	0	0	475

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	900	425	0	0	425	0
Stage 1	425	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	309	629	-	-	1134	-
Stage 1	659	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	309	629	-	-	1134	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	514	1134
HCM Lane V/C Ratio	-	-	0.584	-
HCM Control Delay (s)	-	-	21.4	0
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	3.7	0

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	0	10	30	10	80	20	430	10	20	340	20
Future Vol, veh/h	10	0	10	30	10	80	20	430	10	20	340	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	38	13	100	25	538	13	25	425	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1139	1089	438	1089	1095	545	450	0	0	551	0	0
Stage 1	488	488	-	595	595	-	-	-	-	-	-	-
Stage 2	651	601	-	494	500	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	178	215	619	193	214	538	1110	-	-	1019	-	-
Stage 1	561	550	-	491	492	-	-	-	-	-	-	-
Stage 2	457	489	-	557	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	132	203	619	181	202	538	1110	-	-	1019	-	-
Mov Cap-2 Maneuver	132	203	-	181	202	-	-	-	-	-	-	-
Stage 1	543	536	-	475	476	-	-	-	-	-	-	-
Stage 2	351	473	-	532	529	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	23.6		24.7		0.4		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	218	330	1019	-
HCM Lane V/C Ratio	0.023	-	-	0.115	0.455	0.025	-
HCM Control Delay (s)	8.3	0	-	23.6	24.7	8.6	-
HCM Lane LOS	A	A	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.3	0.1	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	480	0
Future Vol, veh/h	0	0	0	400	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	435	522	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	957	522	522	0	-	0
Stage 1	522	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	286	555	1044	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	555	1044	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1044	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	400	480	0
Future Vol, veh/h	0	0	0	400	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	435	522	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	957	522	522	0	-	0
Stage 1	522	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	286	555	1044	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	286	555	1044	-	-	-
Mov Cap-2 Maneuver	414	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	653	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1044	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

2_2041 School Peak
 Design Year - Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗		↖	↗	
Traffic Volume (veh/h)	80	30	100	30	10	30	10	300	50	90	450	20
Future Volume (veh/h)	80	30	100	30	10	30	10	300	50	90	450	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	38	125	34	11	34	11	333	56	112	562	25
Peak Hour Factor	0.80	0.80	0.80	0.88	0.88	0.88	0.90	0.90	0.90	0.80	0.80	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	110	321	190	78	123	407	639	107	594	891	40
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.02	0.41	0.41	0.11	0.50	0.50
Sat Flow, veh/h	1045	540	1585	418	383	605	1781	1561	262	1781	1777	79
Grp Volume(v), veh/h	138	0	125	79	0	0	11	0	389	112	0	587
Grp Sat Flow(s),veh/h/ln	1585	0	1585	1406	0	0	1781	0	1823	1781	0	1856
Q Serve(g_s), s	0.0	0.0	3.3	0.0	0.0	0.0	0.2	0.0	7.8	1.4	0.0	11.3
Cycle Q Clear(g_c), s	3.2	0.0	3.3	3.2	0.0	0.0	0.2	0.0	7.8	1.4	0.0	11.3
Prop In Lane	0.72		1.00	0.43		0.43	1.00		0.14	1.00		0.04
Lane Grp Cap(c), veh/h	448	0	321	390	0	0	407	0	746	594	0	930
V/C Ratio(X)	0.31	0.00	0.39	0.20	0.00	0.00	0.03	0.00	0.52	0.19	0.00	0.63
Avail Cap(c_a), veh/h	692	0	584	628	0	0	627	0	802	650	0	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	16.9	16.3	0.0	0.0	8.5	0.0	10.8	6.1	0.0	8.9
Incr Delay (d2), s/veh	0.4	0.0	0.8	0.3	0.0	0.0	0.0	0.0	0.6	0.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.2	0.7	0.0	0.0	0.1	0.0	2.5	0.4	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	17.6	16.5	0.0	0.0	8.5	0.0	11.4	6.3	0.0	10.3
LnGrp LOS	B	A	B	B	A	A	A	A	B	A	A	B
Approach Vol, veh/h		263			79			400			699	
Approach Delay, s/veh		17.4			16.5			11.3			9.6	
Approach LOS		B			B			B			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	24.5		14.4	5.5	29.0		14.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	3.4	9.8		5.3	2.2	13.3		5.2				
Green Ext Time (p_c), s	0.1	1.8		0.6	0.0	1.9		0.1				

Intersection Summary

HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	10	410	20	10	520
Future Vol, veh/h	10	10	410	20	10	520
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	513	25	13	650

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1202	526	0	0	538	0
Stage 1	526	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	204	552	-	-	1030	-
Stage 1	593	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	200	552	-	-	1030	-
Mov Cap-2 Maneuver	336	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	495	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	418	1030
HCM Lane V/C Ratio	-	-	0.06	0.012
HCM Control Delay (s)	-	-	14.2	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↑	↑	↕	↑	↕
Traffic Vol, veh/h	10	0	30	20	10	40	70	310	40	30	480	70
Future Vol, veh/h	10	0	30	20	10	40	70	310	40	30	480	70
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	38	25	13	50	88	388	50	38	600	88

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1297	1290	600	1303	1328	388	688	0	0	438	0	0
Stage 1	676	676	-	564	564	-	-	-	-	-	-	-
Stage 2	621	614	-	739	764	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	139	163	501	138	155	660	906	-	-	1122	-	-
Stage 1	443	453	-	510	508	-	-	-	-	-	-	-
Stage 2	475	483	-	409	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	108	142	501	115	135	660	906	-	-	1122	-	-
Mov Cap-2 Maneuver	108	142	-	115	135	-	-	-	-	-	-	-
Stage 1	400	438	-	461	459	-	-	-	-	-	-	-
Stage 2	386	436	-	366	399	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22		30.5		1.6		0.4	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	906	-	-	262	227	1122	-
HCM Lane V/C Ratio	0.097	-	-	0.191	0.385	0.033	-
HCM Control Delay (s)	9.4	-	-	22	30.5	8.3	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	1.7	0.1	-

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	Y
Traffic Vol, veh/h	60	80	40	370	480	10
Future Vol, veh/h	60	80	40	370	480	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	86	86	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	100	47	430	600	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1124	600	613	0	-	0
Stage 1	600	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	227	501	966	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	216	501	966	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	521	-	-	-	-	-
Stage 2	594	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	423	-	-
HCM Lane V/C Ratio	0.048	-	0.414	-	-
HCM Control Delay (s)	8.9	-	19.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↑
Traffic Vol, veh/h	10	10	350	80	90	480
Future Vol, veh/h	10	10	350	80	90	480
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	438	100	113	600

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1264	438	0	0	538
Stage 1	438	-	-	-	-
Stage 2	826	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	187	619	-	-	1030
Stage 1	651	-	-	-	-
Stage 2	430	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	166	619	-	-	1030
Mov Cap-2 Maneuver	288	-	-	-	-
Stage 1	651	-	-	-	-
Stage 2	383	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	393	1030
HCM Lane V/C Ratio	-	-	0.064	0.109
HCM Control Delay (s)	-	-	14.8	8.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.4

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	130	360	0	0	440
Future Vol, veh/h	130	130	360	0	0	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	163	450	0	0	550

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1000	450	0	0	450	0
Stage 1	450	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	270	609	-	-	1110	-
Stage 1	642	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	609	-	-	1110	-
Mov Cap-2 Maneuver	400	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	578	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	483	1110
HCM Lane V/C Ratio	-	-	0.673	-
HCM Control Delay (s)	-	-	26.5	0
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	4.9	0

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	0	10	30	10	80	20	460	10	30	400	20
Future Vol, veh/h	10	0	10	30	10	80	20	460	10	30	400	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	38	13	100	25	575	13	38	500	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1277	1227	513	1227	1233	582	525	0	0	588	0	0
Stage 1	589	589	-	632	632	-	-	-	-	-	-	-
Stage 2	688	638	-	595	601	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	178	561	155	177	513	1042	-	-	987	-	-
Stage 1	494	495	-	468	474	-	-	-	-	-	-	-
Stage 2	436	471	-	491	489	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	102	165	561	143	164	513	1042	-	-	987	-	-
Mov Cap-2 Maneuver	102	165	-	143	164	-	-	-	-	-	-	-
Stage 1	476	476	-	451	457	-	-	-	-	-	-	-
Stage 2	329	454	-	462	470	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	29.3		31.6		0.3		0.6	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1042	-	-	173	281	987	-
HCM Lane V/C Ratio	0.024	-	-	0.145	0.534	0.038	-
HCM Control Delay (s)	8.5	0	-	29.3	31.6	8.8	-
HCM Lane LOS	A	A	-	D	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	2.9	0.1	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	0	0	0	430	530	0
Future Vol, veh/h	0	0	0	430	530	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	467	576	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1043	576	576	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	254	517	997	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	517	997	-	-	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	997	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	430	530	0
Future Vol, veh/h	0	0	0	430	530	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	467	576	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1043	576	576	0	-	0
Stage 1	576	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	254	517	997	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	517	997	-	-	-
Mov Cap-2 Maneuver	387	-	-	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	631	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	997	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

3_2021 PM Peak
 Existing Year - Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↗		↖	↗	
Traffic Volume (veh/h)	30	10	20	30	10	30	40	253	40	20	355	30
Future Volume (veh/h)	30	10	20	30	10	30	40	253	40	20	355	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	12	25	38	12	38	50	316	50	22	390	33
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	90	304	204	81	130	550	747	118	573	747	63
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.07	0.47	0.47	0.04	0.44	0.44
Sat Flow, veh/h	1064	471	1585	473	422	680	1781	1576	249	1781	1701	144
Grp Volume(v), veh/h	50	0	25	88	0	0	50	0	366	22	0	423
Grp Sat Flow(s),veh/h/ln	1535	0	1585	1575	0	0	1781	0	1825	1781	0	1844
Q Serve(g_s), s	0.0	0.0	0.6	0.0	0.0	0.0	0.6	0.0	6.0	0.3	0.0	7.6
Cycle Q Clear(g_c), s	1.0	0.0	0.6	2.0	0.0	0.0	0.6	0.0	6.0	0.3	0.0	7.6
Prop In Lane	0.76		1.00	0.43		0.43	1.00		0.14	1.00		0.08
Lane Grp Cap(c), veh/h	434	0	304	415	0	0	550	0	866	573	0	811
V/C Ratio(X)	0.12	0.00	0.08	0.21	0.00	0.00	0.09	0.00	0.42	0.04	0.00	0.52
Avail Cap(c_a), veh/h	729	0	627	724	0	0	695	0	866	780	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	15.1	15.7	0.0	0.0	6.3	0.0	7.9	6.5	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	0.7	0.0	0.0	0.2	0.0	1.7	0.1	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	15.2	15.9	0.0	0.0	6.3	0.0	8.2	6.6	0.0	9.8
LnGrp LOS	B	A	B	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		75			88			416			445	
Approach Delay, s/veh		15.3			15.9			8.0			9.6	
Approach LOS		B			B			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	26.1		13.2	7.8	24.5		13.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	2.3	8.0		3.0	2.6	9.6		4.0				
Green Ext Time (p_c), s	0.0	1.8		0.1	0.0	1.6		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	383	20	10	415
Future Vol, veh/h	20	10	383	20	10	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	435	23	12	483

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	954	447	0	0	458
Stage 1	447	-	-	-	-
Stage 2	507	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	287	612	-	-	1103
Stage 1	644	-	-	-	-
Stage 2	605	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	283	612	-	-	1103
Mov Cap-2 Maneuver	411	-	-	-	-
Stage 1	644	-	-	-	-
Stage 2	596	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	462	1103
HCM Lane V/C Ratio	-	-	0.081	0.011
HCM Control Delay (s)	-	-	13.5	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖	↗	↖	↖	↗
Traffic Vol, veh/h	10	0	10	60	10	20	20	303	70	40	355	10
Future Vol, veh/h	10	0	10	60	10	20	20	303	70	40	355	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	75	13	25	24	356	82	44	394	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	946	968	394	898	897	356	405	0	0	438	0	0
Stage 1	482	482	-	404	404	-	-	-	-	-	-	-
Stage 2	464	486	-	494	493	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	241	254	655	260	279	688	1154	-	-	1122	-	-
Stage 1	565	553	-	623	599	-	-	-	-	-	-	-
Stage 2	578	551	-	557	547	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	214	239	655	244	263	688	1154	-	-	1122	-	-
Mov Cap-2 Maneuver	214	239	-	244	263	-	-	-	-	-	-	-
Stage 1	553	531	-	610	586	-	-	-	-	-	-	-
Stage 2	534	539	-	525	526	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.1		25.3		0.4		0.8	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1154	-	-	323	288	1122	-
HCM Lane V/C Ratio	0.02	-	-	0.077	0.391	0.04	-
HCM Control Delay (s)	8.2	-	-	17.1	25.3	8.3	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	1.8	0.1	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	↔
Traffic Vol, veh/h	30	10	10	303	395	40
Future Vol, veh/h	30	10	10	303	395	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	11	340	416	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	778	416	458	0	-	0
Stage 1	416	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	365	637	1103	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	704	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	361	637	1103	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	704	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1103	-	507	-	-
HCM Lane V/C Ratio	0.01	-	0.099	-	-
HCM Control Delay (s)	8.3	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑	↗	↖	↑
Traffic Vol, veh/h	10	0	273	60	60	425
Future Vol, veh/h	10	0	273	60	60	425
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	83	83	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	329	72	64	452

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	909	329	0	0	401	0
Stage 1	329	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	305	712	-	-	1158	-
Stage 1	729	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	288	712	-	-	1158	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	405	1158
HCM Lane V/C Ratio	-	-	0.031	0.055
HCM Control Delay (s)	-	-	14.2	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	50	263	10	0	455
Future Vol, veh/h	30	50	263	10	0	455
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	90	90	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	63	292	11	0	495

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	793	298	0	0	303
Stage 1	298	-	-	-	-
Stage 2	495	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	358	741	-	-	1258
Stage 1	753	-	-	-	-
Stage 2	613	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	358	741	-	-	1258
Mov Cap-2 Maneuver	468	-	-	-	-
Stage 1	753	-	-	-	-
Stage 2	613	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	608	1258
HCM Lane V/C Ratio	-	-	0.164	-
HCM Control Delay (s)	-	-	12.1	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	10	10	10	0	10	10	293	10	20	435	10
Future Vol, veh/h	10	10	10	10	0	10	10	293	10	20	435	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	13	13	0	13	12	345	12	22	473	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	905	904	479	911	903	351	484	0	0	357	0	0
Stage 1	523	523	-	375	375	-	-	-	-	-	-	-
Stage 2	382	381	-	536	528	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	257	277	587	255	277	692	1079	-	-	1202	-	-
Stage 1	537	530	-	646	617	-	-	-	-	-	-	-
Stage 2	640	613	-	529	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	246	268	587	235	268	692	1079	-	-	1202	-	-
Mov Cap-2 Maneuver	246	268	-	235	268	-	-	-	-	-	-	-
Stage 1	529	520	-	637	608	-	-	-	-	-	-	-
Stage 2	620	604	-	496	518	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.9		16		0.3		0.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	316	351	1202	-	-
HCM Lane V/C Ratio	0.011	-	-	0.119	0.071	0.018	-	-
HCM Control Delay (s)	8.4	0	-	17.9	16	8.1	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	40	23	370	410	15
Future Vol, veh/h	27	40	23	370	410	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	43	25	402	446	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	906	454	462	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	452	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	307	606	1099	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	300	606	1099	-	-	-
Mov Cap-2 Maneuver	426	-	-	-	-	-
Stage 1	625	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1099	-	518	-	-
HCM Lane V/C Ratio	0.023	-	0.141	-	-
HCM Control Delay (s)	8.4	-	13.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	6	8	14	370	410	10
Future Vol, veh/h	6	8	14	370	410	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	9	15	402	446	11




















Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	884	452	457	0	-	0
Stage 1	452	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	608	1104	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	312	608	1104	-	-	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1104	-	520	-	-
HCM Lane V/C Ratio	0.014	-	0.029	-	-
HCM Control Delay (s)	8.3	-	12.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th Signalized Intersection Summary
 54: Wyoga Lake Rd. & Walsh Center Dr./Wyoga Lake Blvd.

3_2041 PM Peak
 Design Year - Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	10	20	40	10	30	40	293	40	20	405	30
Future Volume (veh/h)	30	10	20	40	10	30	40	293	40	20	405	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	12	25	50	12	38	50	366	50	22	445	33
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	348	92	309	233	73	115	507	761	104	532	753	56
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.07	0.47	0.47	0.04	0.44	0.44
Sat Flow, veh/h	1074	472	1585	588	373	589	1781	1611	220	1781	1720	128
Grp Volume(v), veh/h	50	0	25	100	0	0	50	0	416	22	0	478
Grp Sat Flow(s),veh/h/ln	1546	0	1585	1550	0	0	1781	0	1831	1781	0	1847
Q Serve(g_s), s	0.0	0.0	0.6	0.4	0.0	0.0	0.6	0.0	7.1	0.3	0.0	9.0
Cycle Q Clear(g_c), s	1.0	0.0	0.6	2.3	0.0	0.0	0.6	0.0	7.1	0.3	0.0	9.0
Prop In Lane	0.76		1.00	0.50		0.38	1.00		0.12	1.00		0.07
Lane Grp Cap(c), veh/h	440	0	309	421	0	0	507	0	865	532	0	808
V/C Ratio(X)	0.11	0.00	0.08	0.24	0.00	0.00	0.10	0.00	0.48	0.04	0.00	0.59
Avail Cap(c_a), veh/h	729	0	624	718	0	0	651	0	865	738	0	869
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.2	0.0	15.0	15.7	0.0	0.0	6.6	0.0	8.2	6.7	0.0	9.8
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.2	0.8	0.0	0.0	0.2	0.0	2.0	0.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	0.0	15.2	16.0	0.0	0.0	6.7	0.0	8.7	6.8	0.0	10.7
LnGrp LOS	B	A	B	B	A	A	A	A	A	A	A	B
Approach Vol, veh/h		75			100			466			500	
Approach Delay, s/veh		15.3			16.0			8.4			10.5	
Approach LOS		B			B			A			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	26.1		13.4	7.8	24.5		13.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	7.0	21.5		18.0	7.0	21.5		18.0				
Max Q Clear Time (g_c+I1), s	2.3	9.1		3.0	2.6	11.0		4.3				
Green Ext Time (p_c), s	0.0	2.1		0.1	0.0	1.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				10.5								
HCM 6th LOS				B								

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	423	20	10	465
Future Vol, veh/h	20	10	423	20	10	465
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	88	88	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	481	23	12	541

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1058	493	0	0	504
Stage 1	493	-	-	-	-
Stage 2	565	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	249	576	-	-	1061
Stage 1	614	-	-	-	-
Stage 2	569	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	245	576	-	-	1061
Mov Cap-2 Maneuver	379	-	-	-	-
Stage 1	614	-	-	-	-
Stage 2	560	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	428	1061
HCM Lane V/C Ratio	-	-	0.088	0.011
HCM Control Delay (s)	-	-	14.2	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖	↗	↖	↖	↗
Traffic Vol, veh/h	10	0	10	60	10	30	20	333	80	40	405	20
Future Vol, veh/h	10	0	10	60	10	30	20	333	80	40	405	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	165	-	60	75	-	165
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	13	75	13	38	24	392	94	44	450	22

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1051	1072	450	996	1000	392	472	0	0	486	0	0
Stage 1	538	538	-	440	440	-	-	-	-	-	-	-
Stage 2	513	534	-	556	560	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	220	609	223	243	657	1090	-	-	1077	-	-
Stage 1	527	522	-	596	578	-	-	-	-	-	-	-
Stage 2	544	524	-	515	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	206	609	208	228	657	1090	-	-	1077	-	-
Mov Cap-2 Maneuver	177	206	-	208	228	-	-	-	-	-	-	-
Stage 1	515	501	-	583	565	-	-	-	-	-	-	-
Stage 2	491	512	-	484	490	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.5		30.2		0.4		0.7	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	274	265	1077	-
HCM Lane V/C Ratio	0.022	-	-	0.091	0.472	0.041	-
HCM Control Delay (s)	8.4	-	-	19.5	30.2	8.5	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2.4	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	10	10	343	445	40
Future Vol, veh/h	30	10	10	343	445	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	215
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	89	89	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	13	11	385	468	42

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	875	468	510	0	-	0
Stage 1	468	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	320	595	1055	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	317	595	1055	-	-	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	672	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1055	-	471	-	-
HCM Lane V/C Ratio	0.011	-	0.106	-	-
HCM Control Delay (s)	8.4	-	13.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↗		↑	↗↘	↘↗	↑
Traffic Vol, veh/h	10	0	303	70	60	475
Future Vol, veh/h	10	0	303	70	60	475
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	165	165	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	83	83	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	365	84	64	505

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	998	365	0	0	449
Stage 1	365	-	-	-	-
Stage 2	633	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	270	680	-	-	1111
Stage 1	702	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	254	680	-	-	1111
Mov Cap-2 Maneuver	376	-	-	-	-
Stage 1	702	-	-	-	-
Stage 2	498	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.9	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	376	1111
HCM Lane V/C Ratio	-	-	0.033	0.057
HCM Control Delay (s)	-	-	14.9	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.2

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	40	50	293	10	0	495
Future Vol, veh/h	40	50	293	10	0	495
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	90	90	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	63	326	11	0	538

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	870	332	0	0	337	0
Stage 1	332	-	-	-	-	-
Stage 2	538	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	322	710	-	-	1222	-
Stage 1	727	-	-	-	-	-
Stage 2	585	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	322	710	-	-	1222	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	557	1222
HCM Lane V/C Ratio	-	-	0.202	-
HCM Control Delay (s)	-	-	13.1	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↕	↕	
Traffic Vol, veh/h	10	10	10	10	0	10	10	323	10	30	475	10
Future Vol, veh/h	10	10	10	10	0	10	10	323	10	30	475	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	85	85	85	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	13	13	13	0	13	12	380	12	33	516	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1005	1004	522	1011	1003	386	527	0	0	392	0	0
Stage 1	588	588	-	410	410	-	-	-	-	-	-	-
Stage 2	417	416	-	601	593	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	242	555	218	242	662	1040	-	-	1167	-	-
Stage 1	495	496	-	619	595	-	-	-	-	-	-	-
Stage 2	613	592	-	487	493	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	209	232	555	198	232	662	1040	-	-	1167	-	-
Mov Cap-2 Maneuver	209	232	-	198	232	-	-	-	-	-	-	-
Stage 1	488	482	-	610	586	-	-	-	-	-	-	-
Stage 2	592	583	-	451	479	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.1		17.9		0.2		0.5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1040	-	-	275	305	1167	-
HCM Lane V/C Ratio	0.011	-	-	0.136	0.082	0.028	-
HCM Control Delay (s)	8.5	0	-	20.1	17.9	8.2	-
HCM Lane LOS	A	A	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.3	0.1	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	40	23	410	460	15
Future Vol, veh/h	27	40	23	410	460	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	43	25	446	500	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1004	508	516	0	-	0
Stage 1	508	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	268	565	1050	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	262	565	1050	-	-	-
Mov Cap-2 Maneuver	394	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	481	-	-
HCM Lane V/C Ratio	0.024	-	0.151	-	-
HCM Control Delay (s)	8.5	-	13.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	8	14	410	460	10
Future Vol, veh/h	6	8	14	410	460	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	9	15	446	500	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	982	506	511	0	-	0
Stage 1	506	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	276	566	1054	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	272	566	1054	-	-	-
Mov Cap-2 Maneuver	403	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	482	-	-
HCM Lane V/C Ratio	0.014	-	0.032	-	-
HCM Control Delay (s)	8.5	-	12.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-