Request for Proposal

For

Professional Qualifications

For

THE

IMPROVEMENTS TO STATE ROAD, SEASONS ROAD AND WYOGA LAKE ROAD AT THE TRIANGLE

Statement of Qualifications

Accepted until February 10, 2022

Office of the City Engineer

2310 Second Street

Cuyahoga Falls, Ohio 44221

REQUEST FOR PROPOSAL

For

PROFESSIONAL QUALIFICATIONS

IMPROVEMENTS TO STATE ROAD, SEASONS ROAD AND WYOGA LAKE ROAD AT THE TRIANGLE

I. INTRODUCTION

The City of Cuyahoga Falls proposes the reconstruction of State Road, Seasons Road and Wyoga Lake Road at their intersections, locally known as The Triangle. Cuyahoga Falls must prepare project construction documents for said construction.

Cuyahoga Falls requests proposals to prepare preliminary and final design construction documents and all document preparation associated therewith.

II. BASIC SCOPE OF SERVICES

The basic scope of services shall include providing tools, materials and labor to perform the following work:

It is anticipated the project will include centerline and right-of-way survey, field location survey, new typical pavement section, storm sewers as required and traffic signals as needed. Improvements will be in accordance with recommendations presented in the attached traffic study from July 2021, for this corridor, and will also include considerations for pedestrian and bicycle facilities.

The work shall be in two (2) phases. Phase One will include preliminary drawings, meetings with City personnel for comments and estimate of probable cost. Phase Two shall be submittal of final construction drawings in a format suitable for bidding purposes by the City, including but not limited to, construction drawings, specifications, bid quantities and estimate. The final submittal shall address all comments. The work shall include but is not limited to:

A. Prepare centerline layout drawings based on previous surveys and design work, supplemented as needed by field surveys plus any proposed right-of-way acquisitions. At this time the Consultant shall recommend to the City a proposed typical pavement section that is in keeping with the character of the area and stays within existing right-of-way and budget, as much as possible.

B. Prepare plan and profile sheets for the reconstruction of The Triangle.

III. GENERAL PROJECT PARAMETERS

1. Design

   All design and drafting work shall be performed in accordance with Ohio Department of Transportation (ODOT) L&D Design Standards for review and approval by the City.

2. Progress Documents

   Submit three (3) interim sets of documents to the City.

3. Governmental Approval

   Submit one (1) complete set of plans to all utility companies within the project area and revised in accordance with their comments. A letter from each utility acknowledging acceptance of the improvements shall be submitted to the City.

IV. OBJECTIVE

The objective is to request a Statement of Qualifications (SOQ's) to select a qualified engineering firm to complete the engineering services required to design and prepare construction documents for the reconstruction of State Road, Seasons Road, and Wyoga Lake Road in The Triangle. Because the services are professional services, because qualified consulting engineering efforts could reduce the overall project cost and because the quality of the public improvements depends on the qualifications of the consultant, selection of the engineering consulting firm will be based upon a predetermined set of weighted criteria.

V. EVALUATION CRITERIA

The following are the primary evaluation criteria the City plans to utilize to select the best-qualified firm. In addition to the evaluation criteria, the city will be looking at design and engineering experience in roadway design. Selection is very subjective in many areas and the decision of the City Administration will be final and not subject to re-evaluation by the firms submitting a Statement of Qualifications.

- Responsibility and stability – such considerations as length of time firm has been in business, length of time principals have been with firm, financial responsibility, professional liability coverage, etc.
- Experience – such considerations as other similar projects completed by the firm, similar design projects completed by key personnel of the firm, support staff abilities, range of in-house capabilities, etc.
- Location – Such consideration as location of firm's office that will be responsible for project coordination, previous work in the general geographic area, key project personnel office location, etc. Lower project costs should result if limited travel expenses are required and better communication can be maintained which should result in a higher quality project.
- Quality of work – Such considerations as adequateness of material supplied to permit evaluation, evaluation, quality of presentation, cooperation, concern, etc.
- Time schedule and anticipated man-hours to complete the project.

The City will accept SOQ's until 4:00 p.m., February 10, 2022. Consultants must submit their SOQ's electronically to the City of Cuyahoga Falls Engineering Department Email, at Engineering@cityofcf.com. The subject line of the email should read "Statement of Qualifications for Professional Engineering Services, Design of the Reconstruction of The Triangle."

The City retains the option of rejecting or accepting any Statement of Qualifications. Should a firm be selected and the City can not negotiate a contract with the selected firm ranked best qualified, the City shall inform the firm in writing of the termination of negotiations and enter into negotiations with the firm ranked next best qualified. If negotiations again fail, the same procedure shall be followed with each next best-qualified firm selected until a contract is negotiated. However, the City retains the right to reject all SOQ's and initiate the process of obtaining SOQ's from qualified engineering firms at a later date.

VI. Statement of Qualifications

The specific format of the Statement of Qualifications (SOQ's) shall be per the responding firm's judgment. However, shall include the following data:

1. Two-page project summary narrative defining the firm's interpretation of the scope of the project and approach to engineering and design.
2. Project personnel organization.
3. Firm Profile.
4. Principal Profile.
5. Technical Expertise Profile.
6. General anticipated project schedule or time line.
7. General anticipated man-hours to complete the project based on past experience.
8. Additional pertinent information

The City requests that, in addition to a general list of representative projects, responding firms select one or two of its completed projects of similar size and scope. The selected project shall be a project that has been completed for at least three years but no more than five years. A detailed description of services rendered, the name, mailing address and phone number of the client's project manager, and the name and mailing of the general contractor.

The responding firms are also requested to provide a proposed project team that will most likely work on this project. Members should include personnel from the partner down to the engineer-in-training level. Sub-professional: level employees not providing a significant role on the project do not need to be included.

A resume of each member of the team is needed and should detail relevant experience, length of service with the firm, educational background, and professional background. Sub-consultant's roles on the project should also be listed.

VII. INTERVIEWS

The City reserves the right to conduct face-to-face interviews with any, all, or none of the responding firms. In the event the City selection committee deems interviews necessary to select the best firm, the City will establish a meeting at a mutually acceptable time at City office. The City selection committee will meet key members of the firm's proposed project team. It shall be the selection committee's sole decision on whether any interviews are held and with which firms interviews are held.

Engineering Design Services to Improve State Road, Seasons Road and Wyoga Lake Road at The Triangle

EVALUATION CRITERIA	Max Points	Firm A	Firm B	Firm C	Firm D	Firm E	Firm F
Section 1 - Min Qualifications							
Prequalification Met	**Yes/No**						
Section 2 - Firm's Experience	**30**						
Section 3 - Staff Experience							
Project Manager	**20**						
Support Staff	**20**						
Section 4 - Primary Firm Location	**10**						
Project Schedule	**20**						
TOTAL	**100**	**X**	**X**	**X**	**X**	**X**	**X**

The Triangle – Traffic Study

State Road, Seasons Road & Wyoga Lake Road

City of Cuyahoga Falls, Ohio

Prepared By:

PRIME AE®

JULY 2021

The Triangle – Traffic Study

State Road, Seasons Road & Wyoga Lake Road

City of Cuyahoga Falls, Summit County, Ohio

Prepared For:

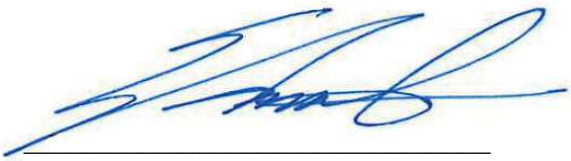
CITY OF Cuyahoga Falls

MAYOR DON WALTERS

City of Cuyahoga Falls, Ohio

July 2021

Prepared By:



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Executive Summary

The intersection of State Road, Seasons Road, and Wyoga Lake Road (The Triangle) is a remnant of days past when Tamsin Park was the main attraction, State Road was State Route 8, Seasons Road was very lightly traveled, and Wyoga Lake Road did not serve two major high schools. Over the decades, academic, industrial, commercial, and residential development has occurred in the area spurred by the annexation of Northampton Township by Cuyahoga Falls, extension of utilities and the Seasons Road interchange with State Route 8 to the east. As a result, traffic has increased in the area and the geometric layout of the triangle no longer provides for efficient traffic operations. Further, past development access roads such as Hidden Lakes Lane were located in a manner that complicates turning movements making for difficult access. Further demand for development in the area, including the Pine Ridge subdivision, is driving a need to address the triangle and propose ways to increase its capacity, safety and ability to accommodate future growth. The ability to make improvements at the triangle have been impeded by right-of-way concerns and the ability to acquire any additional land needed to make improvements. This right-of-way issue will be taken into consideration when proposing recommendations.

Recently, Petros Development, LLC has proposed construction of additional housing units on State Road which may further exacerbate access and traffic issues near the triangle. Petros Development has teamed with the City of Cuyahoga Falls to conduct this traffic study with the goals of gaining approval for the access and development of their Pine Ridge subdivision, and to identify a long-term solution to traffic issues in this area.

Study Approach

The general approach to this study follows industry standards and uses accepted ODOT criteria. The most recent data available was used in the analysis and traffic counts were collected at all study area intersections. Planning level design concepts were prepared using Summit County GIS data which cannot be relied upon for final design.

Findings

This report has been prepared to evaluate the impact of the Pine Ridge development and to evaluate the triangle intersection. It has been found that the Pine Ridge development will not have a significant impact on traffic in the study area and that no roadway improvements are needed for that access. The larger issue addressed by this study is that of the triangle. The current configuration is not conducive to accommodating current and future traffic and alternatives were evaluated to provide a safer and more efficient operation. This study puts forth a preferred alternative which is to sever Wyoga Lake Road from State Road to Seasons Road and make necessary improvements to State Road, Seasons Road, and Wyoga Lake Road. This includes coordinated traffic signals along Seasons Road at State Road and Wyoga Lake Road.

Introduction

The intersection of State Road, Seasons Road, and Wyoga Lake Road (The Triangle) in the City of Cuyahoga Falls has long been a source of traffic issues. Over the past decade, several housing developments have been constructed in the area, increasing the amount of traffic movements and overall congestion. Access to the Hidden Lakes subdivision is just north of the triangle which creates poor access due to its relative location to the intersection of State Road and Wyoga Lake Road. Boulder Drive, which is located south of the triangle, is also the source of traffic movements to and from State Road through the triangle. Further, the construction of the Seasons Road interchange at S.R. 8, just east of the triangle, has resulted in additional traffic. Residents and city leadership have recognized a need to evaluate traffic operations at the triangle to seek short and long-range improvements.

Recently, Petros Development, LLC has proposed construction of additional housing units on State Road which may further exacerbate access and traffic issues near the triangle. Petros Development has teamed with the City of Cuyahoga Falls to conduct this traffic study with the goals of gaining approval for the access and development of their Pine Ridge subdivision, and to identify a long-term solution to traffic issues in this area.

This report will be organized in a fashion to address the overall triangle intersection, taking into consideration the Pine Ridge development. The impact of the Pine Ridge development will be clearly addressed. This study conforms with generally accepted traffic engineering study criteria and the State Highway Access Management Manual (SHAMM)[1]. Additionally, this scope is approved by the City of Cuyahoga Falls.

Site Location and Study Area

The intersection is located in northern Cuyahoga Falls in what was formerly known as Northampton Township at the three intersections of State Road, Seasons Road and Wyoga Lake Road. The Pine Ridge development is located just north of the triangle with proposed access from the West onto State Road just north of the State Road/Wyoga Lake Road and Hidden Lakes Lane intersection.

Proposed New Development

Petros Development has proposed construction of a 49-unit, multi-family housing project in northern Cuyahoga Falls. Traffic access is proposed via State Road, just north of Hidden Lakes Lane. A copy of the Site Plan is contained in Appendix A.

[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

The triangle intersection is a remnant of days past when Tamsin Park was the main attraction, State Road was State Route 8, Seasons Road was very lightly traveled, and Wyoga Lake Road did not serve two major high schools. Over the decades, academic, industrial, commercial, and residential development has occurred in the area spurred by the annexation of Northampton Township by Cuyahoga Falls, extension of utilities and the Seasons Road interchange with State Route 8 to the east. As a result, traffic has increased in the area and the geometric layout of the triangle no longer provides for efficient traffic operations. Further, past development access roads such as Hidden Lakes Lane were located in a manner that complicates turning movements making for difficult access. Further demand for development in the area, including the Pine Ridge subdivision, is driving a need to address the triangle and propose ways to increase its capacity, safety and ability to accommodate future growth. The ability to make improvements at the triangle have been impeded by right-of-way concerns and the ability to acquire any additional land needed to make improvements. This right-of-way issue will be taken into consideration when proposing recommendations.

State Road is a two-lane minor arterial within the study area carrying an average daily traffic volume of 11,000 vehicles. The road is essentially flat and straight within the study area and the pavement condition is average. The posted speed limit is 35 mph and existing right-of-way is approximately 80 feet.

Seasons Road is a two-lane minor arterial within the study area carrying average daily traffic volume of approximately 3,200 vehicles per day. Seasons Road runs east/west and is generally flat and straight within the study area with a posted speed limit of 35 miles per hour. Pavement condition is average. Just east of the study area, Seasons Road interchanges with S.R. 8 and functions as a service road for access to the cities of Cuyahoga Falls, Hudson, and Stow. The existing right-of-way on Seasons Road is approximately 70 feet.

Wyoga Lake Road is classified as a major collector and runs north-south from the city of Cuyahoga Falls to the study area. Carrying an average daily traffic volume of 5,000 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 the city of Cuyahoga Falls in general via Oakwood Drive. Wyoga Lake Road has a posted speed limit of 35 mph, and the pavement condition is less than average. The existing right-of-way is approximately 60 feet. Just south of Seasons Road there exists a low area on Wyoga Lake Road that is prone to flooding.

Existing Traffic Control

Traffic at the triangle is controlled by stop signs. The intersection of Seasons Road and Wyoga Lake Road is operated with a four-way stop configuration. At the intersection of State Road and Seasons Road, Seasons Road is controlled with a stop sign, with State Road operating freely. The intersection of State Road with Wyoga Lake Road has a signal flasher and a stop sign on Wyoga Lake Road. The signal flashes yellow on State Road and red on Wyoga Lake Road. Left turns are also prohibited from Wyoga Lake Road to State Road.

An intersection ahead caution sign has been placed for the southbound State Road traffic at the Cuyahoga Falls city boundary. Additionally, stop sign ahead caution signs are posted prior to each of the stop signs within the triangle. See Appendix B for an existing conditions diagram.

Crashes

Traffic crash data for the study area was gathered through the ODOT Transportation Information Management System (TIMS) for the most recent three years. A summary of that crash data for the years 2018, 2019 and 2020 is provided below. As indicated, relatively few crashes occurred at the State/Wyoga intersection, with the majority taking place at the Seasons Road intersections. Of the 26 total crashes, 80% were property damage only (PDO) and angle crashes were the predominant variety. See Appendix C for more crash data details and diagrams.

Triangle Area Crash Summary (2018 – 2020)

LOCATION	TOTAL CRASHES	SEVERITY		CRASH TYPE		
		Inj./Fat.	PDO	Angle	Rear End	Other
State at Wyoga/Hidden Lake	5*	1*	4	3	1	1
State at Seasons	10	2	8	5	2	3
State at Boulder	0	0	0	0	0	0
Seasons at Wyoga	11	2	9	8	3	0
Total	26	5	21	16	6	4

*Includes crash occurring on Saturday, June 12, 2021.

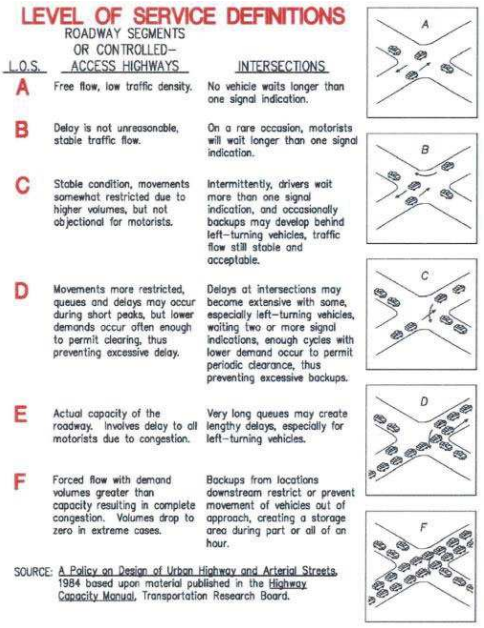
Traffic Counts

Turning movement counts were conducted by PRIME via Miovision Scout data collection units at the five 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. All but one count was collected on the same day, resulting in each study intersection utilizing a DHV factor of 1.12 except for State Road at Wyoga Lake Road / Hidden Lake Lane which used a factor of 1.09. These factored existing traffic volumes establish the Existing design Year Traffic for use in analysis. Based on 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 D contains copies of all turning movement count data and design volume calculations.

When the traffic counts were conducted, how Department of Transportation was reconstructing sections of State Route eight. The southbound State Route 303 ramps and the southbound exit ramp to Steeles 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 11[2] 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 Manual[3].



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 (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.

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 table below indicates, LOS F is assigned to a movement if its volume-to-capacity ratio exceeds 1.0, regardless of the control delay.

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 Criteriaapply to each lane on a give approach annd to each approach on the minor street LOS is not calculated for major street approaches or for the itersection as a qhole.

[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 the study area intersections under the existing geometric and traffic conditions. The following table demonstrates the corresponding level of service based on intersection and study period.

Intersection & Traffic Control		Approach	AM Peak 2021		School Peak 2021		PM Peak 2021	
			LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)
Existing Conditions								
AWSC	**Wyoga Lake Rd. & Seasons Rd.**	Eastbound	F	67.6	C	19.2	C	20.0
		Westbound	F	152.1	F	70.4	F	89.8
		Northbound	F	166.3	F	83.6	C	21.7
		Southbound	F	159.9	E	38.8	F	61.4
		TOTAL	***F***	***141.4***	***F***	***61.5***	***F***	***58.2***
TWSC	**Seasons Rd. & State Rd.**	Westbound	F	85.2	F	53.1	F	76.3
TWSC	**State Rd. & Hidden Lake Ln.**	Eastbound	D	33.1	C	20.3	C	21.9
TWSC	**State Rd. & Boulder Blvd.**	Eastbound	C	15.6	C	19.5	C	15.1
	Unnacceptable	TWSC = Two-Way Stop Control						
	Failing	AWSC = All-Way Stop Control						

As indicated above, several intersections within the study area are currently operating at failing levels of service throughout multiple study periods. The all-way stop controlled intersection of Wyoga Lake Road and Seasons Road suffers most during the AM Peak hour, however several legs operate poorly throughout the entire day resulting in failing service levels in all study periods. The westbound approach of Seasons Road at State Road also suffers throughout each of the study period analyses. The existing development drives of both Hidden Lake Lane and Boulder Boulevard operate acceptably in all study periods. Appendix E contains a compilation of the Synchro reports detailing the existing conditions capacity analysis at each intersection for each scenario.

Pine Ridge Development

Given the nature of this study, as it is also intended to serve as an impact study for the Pine Ridge multifamily housing development north of Hidden Lake Lane, an analysis was performed regarding the future traffic conditions of the study area assuming the proposed development were to be constructed. This analysis requires an estimation of future site-generated traffic volumes which are then superimposed onto project local traffic volumes. These combined traffic volumes are used to test the adequacy of the access plan and roadways within the study area. This chapter summarizes and presents the methodologies used to determine the anticipated traffic volumes associated with the proposed development. This study is focused on two scenarios, an Existing/Opening Year (2021) and a 20-year Design Year (2041) study scenario.

Site Traffic Generation

The developer proposes construction of 49 multifamily housing units. Traffic anticipated to be generated by these sites 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)* was used to generate the site trips. As indicated below, the development is expected to generate an average of 330 total weekday trips. Of those total new trips, 24 are anticipated to occur in the AM Peak and 31 in the PM Peak. Appendix F contains Trip Generation tables and graphs.

Trip Description	Weekday	AM Peak		PM Peak	
		Enter	Exit	Enter	Exit
Primary Trips	330	5	19	19	12

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. For residential developments such as these, approximately half of the trips are work oriented, with the remaining trips allocated to shopping, educational or recreational trips. By analyzing the existing traffic data, PRIME determined that 50% of the site trips will begin/end to the north with the other 50% being to the south.

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. PRIME assumed a 0.5% annual growth rate over the 20-year study period for all volumes in the study area. This rate was determined in conjunction with the Akron Metropolitan Area Transportation Study (AMATS), the local Metropolitan Planning Organization (MPO).

The Existing Design Year Traffic was projected into the 2041 Design Yoar Traffic volumes by applying the 0.5 percent annual growth rate. Pine Ridge generated traffic was absorbed into the overall projections. The distribution and analysis of the Pine Ridge traffic focused solely on the proposed development drive. The Existing and Future volumes were then used to assess the anticipated future traffic conditions in the study area and the site drive and evaluate the need for turn lanes.

Future Conditions Capacity Analysis

Capacity analysis was also performed for the study area intersections under the existing geometric and traffic conditions to determine the anticipated future capacity assuming normal regional growth and the construction of the Pine Ridge development. The following table demonstrates the corresponding level of service based on intersection and study period in comparison to the existing conditions analysis.

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														
AWSC	**Wyoga Lake Rd. & Seasons Rd.**	Eastbound	F	67.6	F	100.1	C	19.2	C	24.2	C	20.0	D	25.3
		Westbound	F	152.1	F	206.1	F	70.4	F	127.7	F	89.8	F	150.8
		Northbound	F	166.3	F	232.8	F	83.6	F	137.2	C	21.7	D	27.8
		Southbound	F	159.9	F	234.4	E	38.8	F	60.9	F	61.4	F	100.5
		TOTAL	***F***	***141.4***	***F***	***199.9***	***F***	***61.5***	***F***	***102.7***	***F***	***58.2***	***F***	***94.0***
TWSC	**Seasons Rd. & State Rd.**	Westbound	F	85.2	F	179.0	F	53.1	F	103.1	F	76.3	F	166.9
TWSC	**State Rd. & Hidden Lake Ln.**	Eastbound	D	33.1	E	48.7	C	20.3	D	28.4	C	21.9	D	26.6
TWSC	**State Rd. & Boulder Blvd.**	Eastbound	C	15.6	C	17.0	C	19.5	C	23.4	C	15.1	C	16.3
TWSC	**State Rd. & Pine Ridge Dr.**	Eastbound	C	23.4	D	27.6	-	-	-	-	C	20.5	C	21.4
	Unnacceptable	TWSC = Two-Way Stop Control												
	Failing	AWSC = All-Way Stop Control												

As expected, and indicated in the table above, the failing levels of service observed under the existing year analysis along Seasons Road at Wyoga Lake Road and State Road are anticipated to worsen into the design year. The existing development drives of both Hidden Lake Lane and Boulder Boulevard are expected to continue to operate acceptably in most study periods. However, the eastbound approach of Hidden Lake Lane is projected to drop to an *E* in the design year analysis. The eastbound approach of the proposed development, Pine Ridge Drive, is expected to operate acceptably in all study periods. The capacity issues experienced along Seasons Road are caused by existing traffic and not a result of the additional traffic generated by the proposed development. Appendix G contains a compilation of the 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 or signalized 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.[4] Those charts were used to evaluate the need for left and right turn lanes at the proposed site drive on Akron-Cleveland Road. Charts were analyzed under the existing conditions/opening year AM and PM Peak as well as the 2041 AM and PM Peak design year scenarios. Those analyses indicate that neither a northbound left turn nor a southbound right turn lane are warranted under any scenario. These worksheets are provided in Appendix H.

Conclusions – Pine Ridge Development

As it relates to the proposed development of the multifamily housing complex north of Hidden Lake Lane on State Road, this study finds that the development will not produce any significant impact to the surrounding roadway network. Regardless of any improvements to the study area, the proposed site drive is anticipated to operate efficiently during all study periods. There are no turn lanes warranted by this development. Traffic should be controlled by a standard R1-1 STOP sign on the eastbound approach.

Triangle Alternatives Analysis

Thus far this study has addressed existing and future traffic within the triangle and at the proposed Pine Ridge Drive. It has been shown that there will be little to no impact to traffic in the area with the addition of the Pine Ridge Drive. However, the greater goal of this study is to evaluate traffic conditions at the triangle and make recommendations for improvements that will accommodate future development and growth in the area. To that end, both short and long-term recommendations have been evaluated and are presented below.

Short-Term Recommendations

Short-term recommendations for this project center on items that are low cost and can be immediately implemented. Such recommendations typically include items like pavement markings and signage. While these types of recommendations typically will not address capacity, they can enhance intersection awareness and safety. The following short-term recommendations for the triangle are:

1. Install a southbound 35 mph speed limit sign at the City corporation limit.
2. Install a northbound intersection ahead warning sign approximately 350 feet south of the Wyoga Lake Road intersection with State Road.

Long-Term Recommendations

Long-term recommendations for the triangle have been discussed for many years, yet opportunities for significant changes have been limited due to funding and right-of-way constraints. PRIME and the City developed two alternatives that could potentially address the issues outlined in this report and are listed below:

1. Convert all legs of the triangle to one-way operation, requiring vehicles to travel around the triangle in a roundabout fashion. This would also require a four-leg roundabout at the Seasons Road and Wyoga Lake Road intersection.

[4] ODOT Location and Design Manual, Volume 1 – Office of Roadway Design. 2021.

2. Remove the Wyoga Lake Road leg from Seasons Road to State Road. Make improvements to State Road, Seasons Road, and Wyoga Lake Road to accommodate this reconfiguration including coordinated traffic signals along Seasons Road at State Road and Wyoga Lake Road.

Alternative 1 was modeled in Synchro to determine the efficiency of the configuration, however it was found that there will be too much traffic demand to be handled by this concept. It would result in long queues throughout the study area, further exacerbating the issues at Hidden Lakes Lane. Alternative 2, which appears to be the most logical solution, remove turning movements just south of Hidden Lake Lane and would allow for northbound left turning storage into Hidden Lake Lane and the proposed Pine Ridge development. The question has always been how to handle traffic destined to and from Seasons Road and Wyoga Lake Road if Wyoga Lake Road no longer intersected State Road. PRIME has developed a preliminary layout of Alternative 2 and a display of that concept is provided in Appendix I.

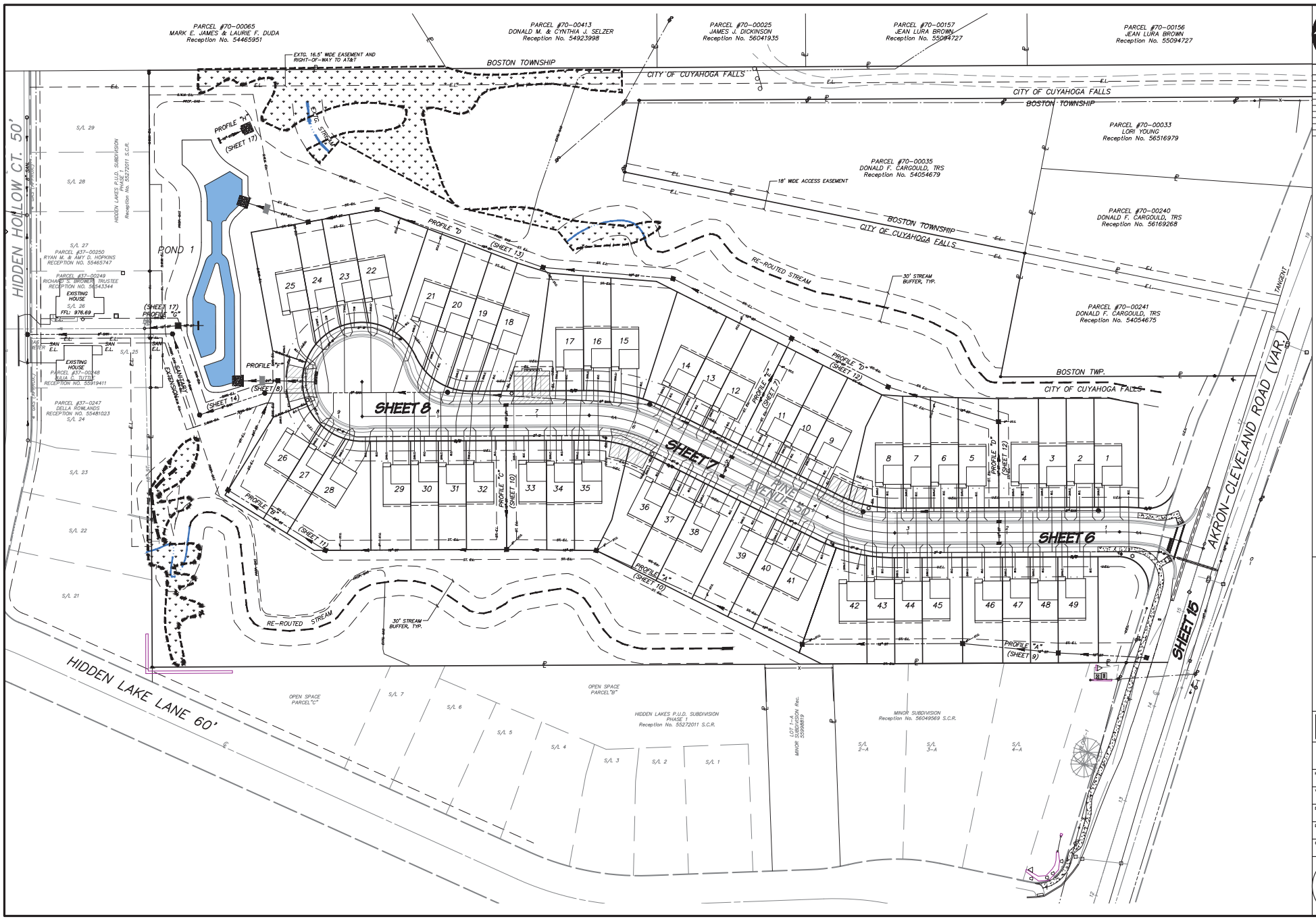
PRIME developed a traffic simulation model of this design and has found that good levels of service can be provided with room for future growth. The table below illustrates the future levels of service derived from the model. The need for right-of-way associated with this concept has not been fully vetted since detailed survey and preliminary engineering have not taken place. It may be necessary to acquire some right-of-way and/or some corners to achieve this design. The next step in pursuing this recommendation would be to conduct a survey of the study area to establish accurate right-of-way, then prepare a preliminary design to evaluate the need for right-of-way, environmental impacts and estimated construction cost. Once that is established, a source of funding can be identified.

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.)
Alternative 1														
Signalized	**Wyoga Lake Rd. & Seasons Rd.**	Eastbound	A	1.5	A	1.4	A	2.4	A	2.5	A	2.6	A	2.5
		Westbound	A	4.7	A	4.4	A	5.6	A	5.7	A	6.0	A	6.3
		Northbound	C	29.2	C	31.1	C	22.0	C	22.1	B	16.4	B	16.8
		TOTAL	***B***	***10.3***	***B***	***10.8***	***A***	***9.7***	***A***	***9.8***	***A***	***6.5***	***A***	***6.6***
Signalized	**Seasons Rd. & State Rd.**	Westbound	B	12.8	B	14.3	B	12.4	B	11.6	C	21.8	C	23.9
		Northbound	C	21.9	C	23.0	B	18.7	B	18.3	B	18.0	B	19.8
		Southbound	B	15.3	C	17.5	A	9.0	A	8.5	A	9.1	B	11.8
		TOTAL	***B***	***17.2***	***B***	***18.9***	***B***	***12.9***	***B***	***12.4***	***B***	***15.1***	***B***	***17.3***
TWSC	**State Rd. & Hidden Lake Ln.**	Eastbound	D	29.4	D	33.1	C	21.9	D	27.6	C	23.9	D	26.0
TWSC	**State Rd. & Boulder Blvd.**	Eastbound	B	12.9	B	13.3	B	14.6	C	15.5	B	12.8	B	13.2
TWSC	**State Rd. & Pine Ridge Dr.**	Eastbound	C	24.5	D	27.5	-	-	-	-	C	21.9	C	23.5
	Unnacceptable	TWSC = Two-Way Stop Control												
	Failing	AWSC = All-Way Stop Control												

Conclusions

This report has been prepared to evaluate the impact of the Pine Ridge development and to evaluate the triangle intersection. It has been found that the Pine Ridge development will not have a significant impact on traffic in the study area and that no roadway improvements are needed for that access. The larger issue addressed by this study is that of the triangle. The current configuration is not conducive to accommodating current and future traffic and alternatives were evaluated to provide a safer and more efficient operation. This study puts forth a preferred alternative which is to remove Wyoga Lake Road from State Road to Seasons Road and make necessary improvements to State Road, Seasons Road, and Wyoga Lake Road. This includes coordinated traffic signals along Seasons Road at State Road and Wyoga Lake Road.

APPENDIX A
PINE RIDGE - SITE DEVELOPMENT PLAN



REVISIONS

UTILITY SCHEMATIC PLAN
THE LEDGES OF PINE RIDGE
CITY OF CUYAHOGA FALLS
SUMMIT COUNTY, OHIO

DONALD G. BOHNING & ASSOCIATES, INC.
CIVIL ENGINEERING & SURVEYING
7979 HUB PARKWAY * VALLEY VIEW, OHIO 44125
PHONE: (216) 642-1130 FAX: (216) 642-1132

GRAPHIC SCALE
0' 20' 40'
HORZ. SCALE 1"=40'
VERT. SCALE
DR'N K.C. CKD. T.C.
DATE MAR., 2021
ORDER NO. 5111E

APPENDIX B
EXISTING CONDITIONS EXHIBIT

WYOGA LAKE CORRIDOR STUDY - EXISTING CONDITIONS DIAGRAM

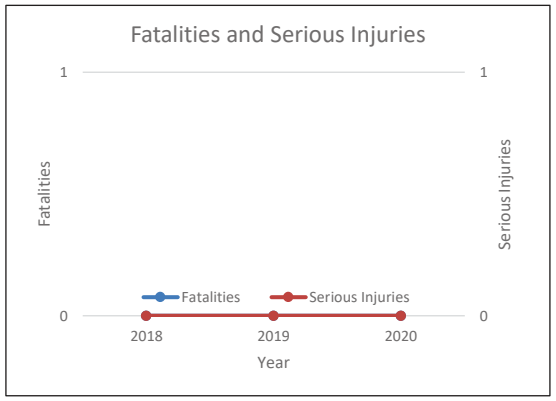
MODEL: Untitled Sheet PAPERSIZE: 17x11 (in.) DATE: 6/21/2021 TIME: 11:30:18 AM USER: bmorgan
O:\Eric Smith_Production\Cuyahoga Falls\Wyoga Triangle Corridor Study\CAD\Existing Conditions Diagram.dgn

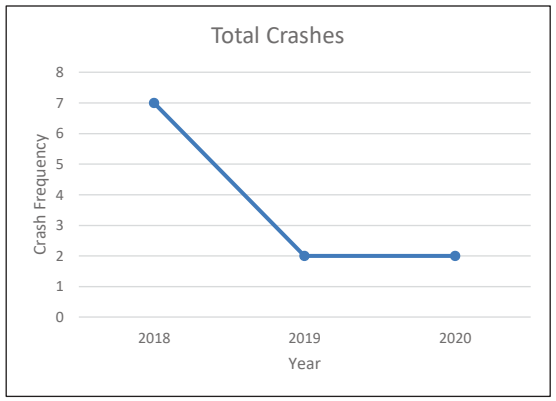
APPENDIX C
EXISTING CRASH DATA

Cuyahoga Falls - Seasons Rd. & Wyoga Lake Rd.

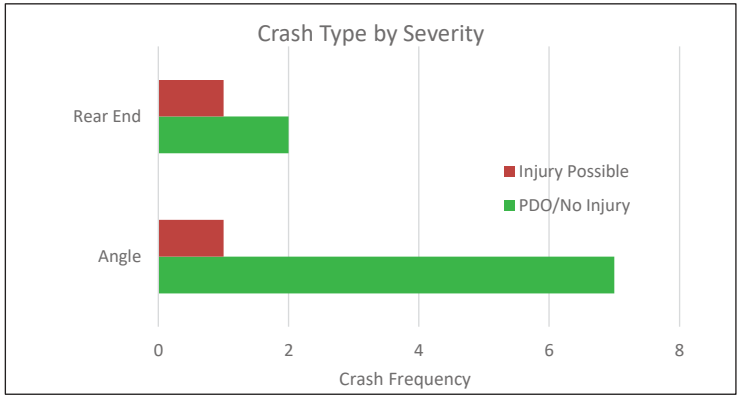
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2018	7	0	0
2019	2	0	0
2020	2	0	0
Grand Total	11	0	0





Total Crashes Crash Type	Injury Level PDO/No Injury	Injury Possible	Grand Total
Angle	7	1	8
Rear End	2	1	3
Grand Total	9	2	11



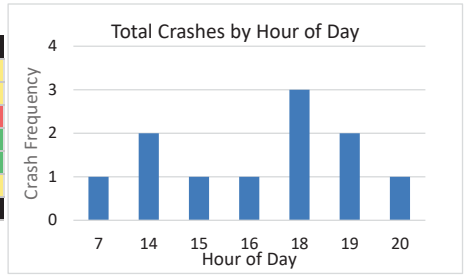
Cuyahoga Falls - Seasons Rd. & Wyoga Lake Rd.

Crash Summary Sheet

Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	9	0	0
Wet	2	0	0
Grand Total	11	0	0

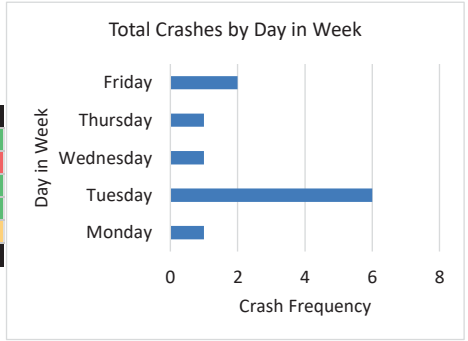
Hour of Day	Total Crashes
7	1
14	2
15	1
16	1
18	3
19	2
20	1
Grand Total	11

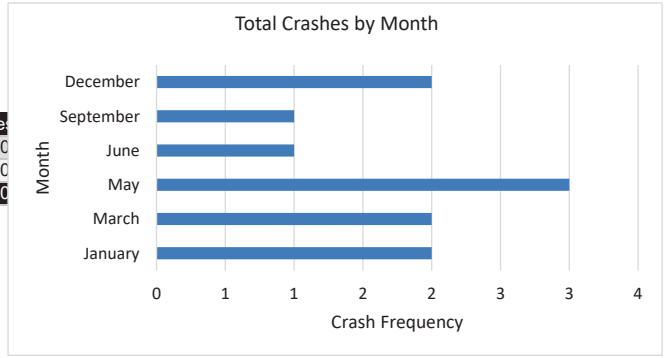
Month	Total Crashes
January	2
March	2
May	3
June	1
September	1
December	2
Grand Total	11



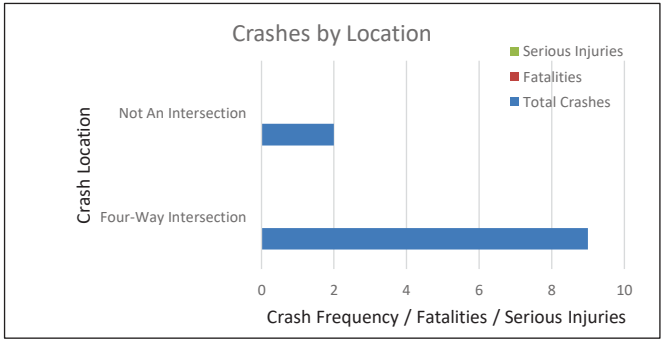
Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	11	0	0
Grand Total	11	0	0

Day in Week	Total Crashes
Monday	1
Tuesday	6
Wednesday	1
Thursday	1
Friday	2
Grand Total	11





Crash Location	Total Crashes	Fatalities	Serious Injuries
Four-Way Intersection	9	0	0
Not An Intersection	2	0	0
Grand Total	11	0	0

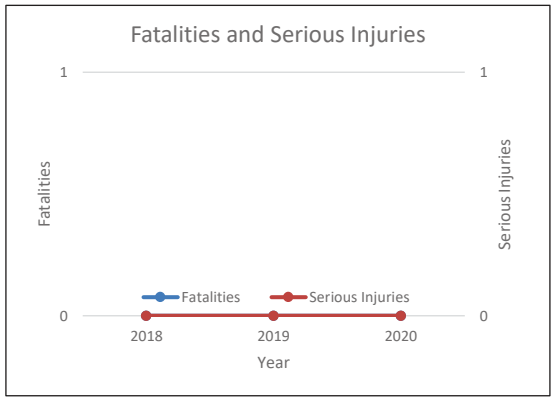


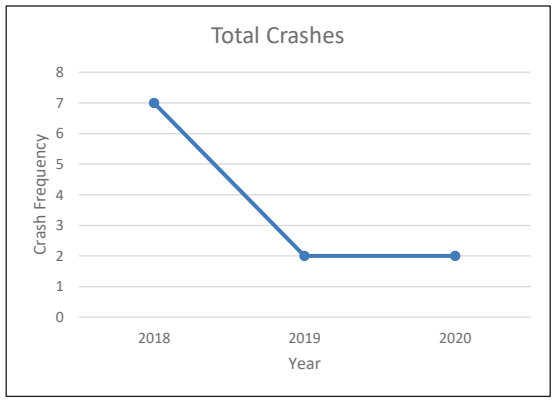
Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Grade	4	0	0
Straight Level	7	0	0
Grand Total	11	0	0

Cuyahoga Falls - State Road & Seasons Road

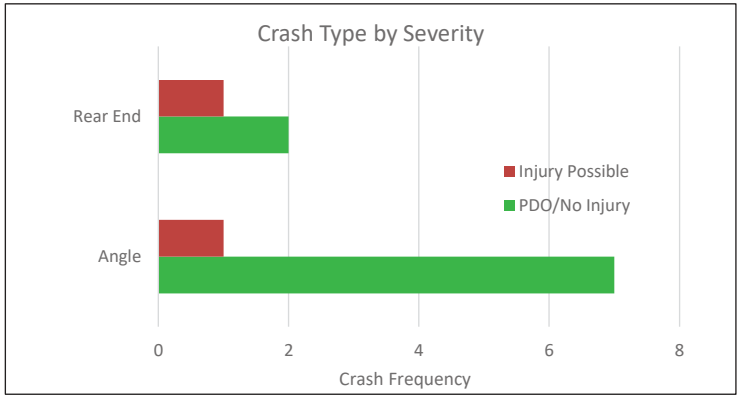
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2018	7	0	0
2019	2	0	0
2020	2	0	0
Grand Total	11	0	0





Total Crashes	Injury Level		
Crash Type	PDO/No Injury	Injury Possible	Grand Total
Angle	7	1	8
Rear End	2	1	3
Grand Total	9	2	11



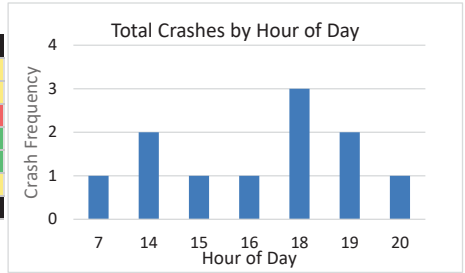
Cuyahoga Falls - State Road & Seasons Road

Crash Summary Sheet

Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	9	0	0
Wet	2	0	0
Grand Total	11	0	0

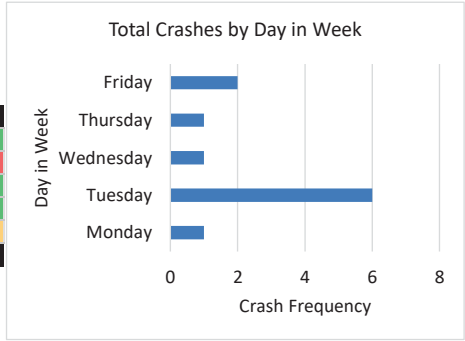
Hour of Day	Total Crashes
7	1
14	2
15	1
16	1
18	3
19	2
20	1
Grand Total	11

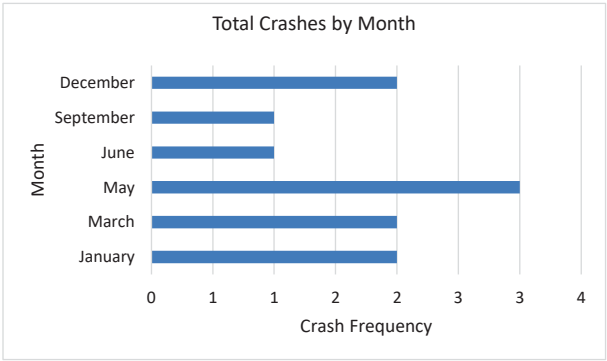
Month	Total Crashes
January	2
March	2
May	3
June	1
September	1
December	2
Grand Total	11



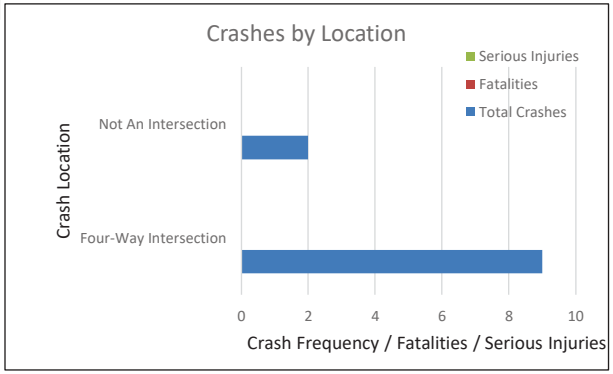
Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	11	0	0
Grand Total	11	0	0

Day in Week	Total Crashes
Monday	1
Tuesday	6
Wednesday	1
Thursday	1
Friday	2
Grand Total	11





Crash Location	Total Crashes	Fatalities	Serious Injuries
Four-Way Intersection	9	0	0
Not An Intersection	2	0	0
Grand Total	11	0	0

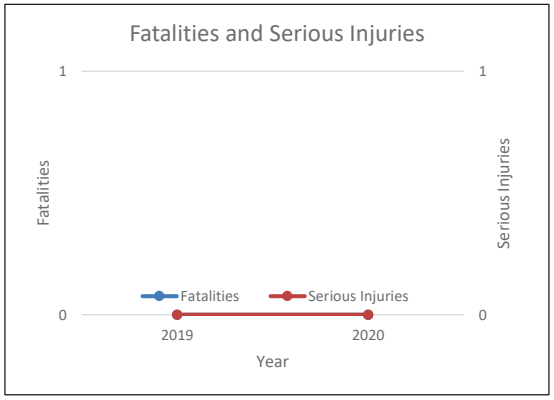


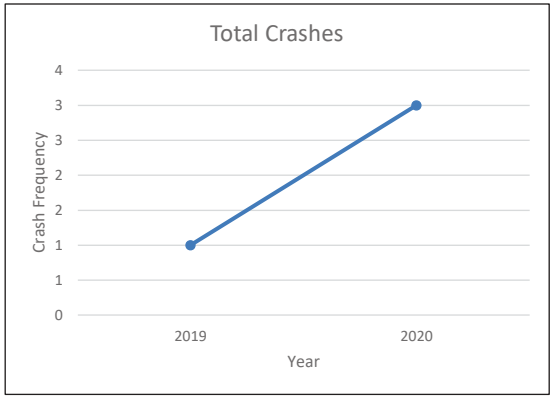
Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Grade	4	0	0
Straight Level	7	0	0
Grand Total	11	0	0

Cuyahoga Falls - State Rd. & Wyoga Lake Rd. / Hidden Lake Ln.

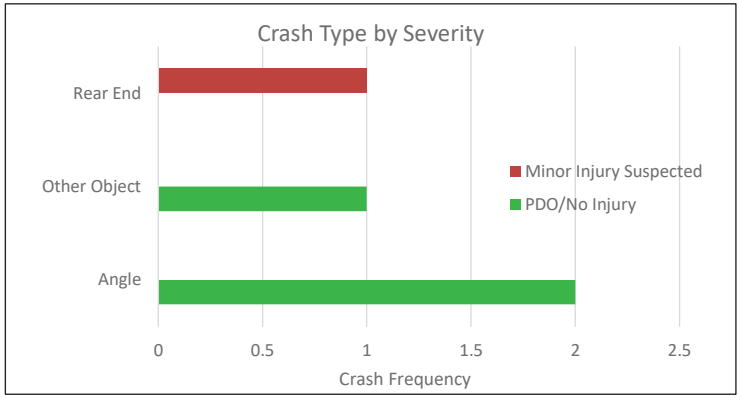
Crash Summary Sheet

Year	Total Crashes	Fatalities	Serious Injuries
2019	1	0	0
2020	3	0	0
Grand Total	4	0	0





Total Crashes Crash Type	Injury Level PDO/No Injury	Minor Injury Su	Grand Total
Angle	2	0	2
Rear End	0	1	1
Other Object	1	0	1
Grand Total	3	1	4



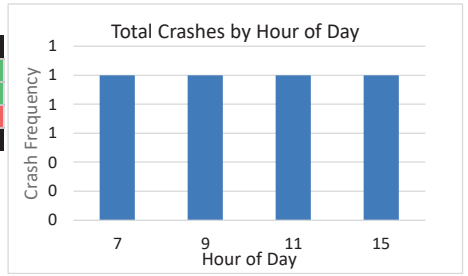
Cuyahoga Falls - State Rd. & Wyoga Lake Rd. / Hidden Lake Ln.

Crash Summary Sheet

Road Condition	Total Crashes	Fatalities	Serious Injuries
Dry	3	0	0
Wet	1	0	0
Grand Total	4	0	0

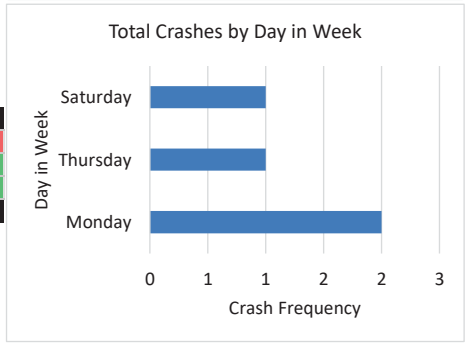
Hour of Day	Total Crashes
7	1
9	1
11	1
15	1
Grand Total	4

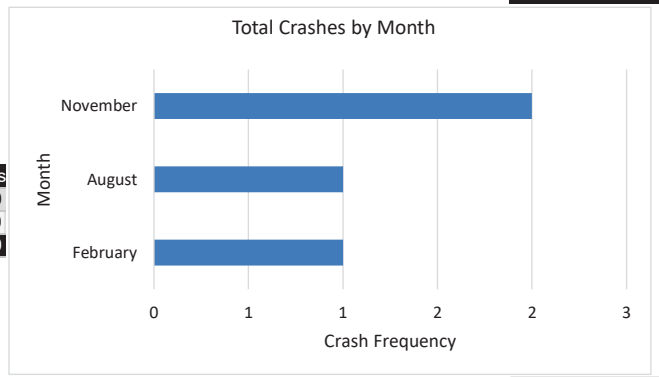
Month	Total Crashes
February	1
August	1
November	2
Grand Total	4



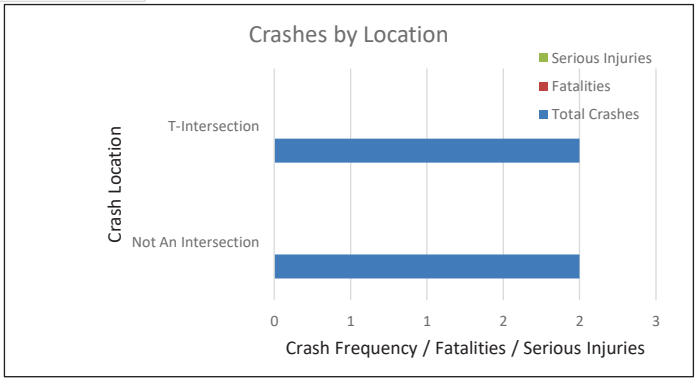
Weather	Total Crashes	Fatalities	Serious Injuries
Data Not Valid or Not Provided	4	0	0
Grand Total	4	0	0

Day in Week	Total Crashes
Monday	2
Thursday	1
Saturday	1
Grand Total	4





Crash Location	Total Crashes	Fatalities	Serious Injuries
Not An Intersection	2	0	0
T-Intersection	2	0	0
Grand Total	4	0	0



Roadway Contour	Total Crashes	Fatalities	Serious Injuries
Straight Grade	1	0	0
Straight Level	3	0	0
Grand Total	4	0	0

TIMS TRANSPORTATION INFORMATION MAPPING SYSTEM

Project Search | Create a Map | Data Download | Standard PDF Maps | Map Viewers | Data Glossary

Search by PID

Filter crash events by graphic

To filter crashes by a graphic, first activate the **Draw polygon** button then click map to start drawing. Double-click to complete polygon. Optionally, to buffer a drawn shape, input a distance value and select a unit of measure. Then click **Buffer** to complete.

that intersect graphic type:

point

buffer graphic:

250 feet

Draw | Delete

Search | Clear

10 features found

Results Filtered Crash Events

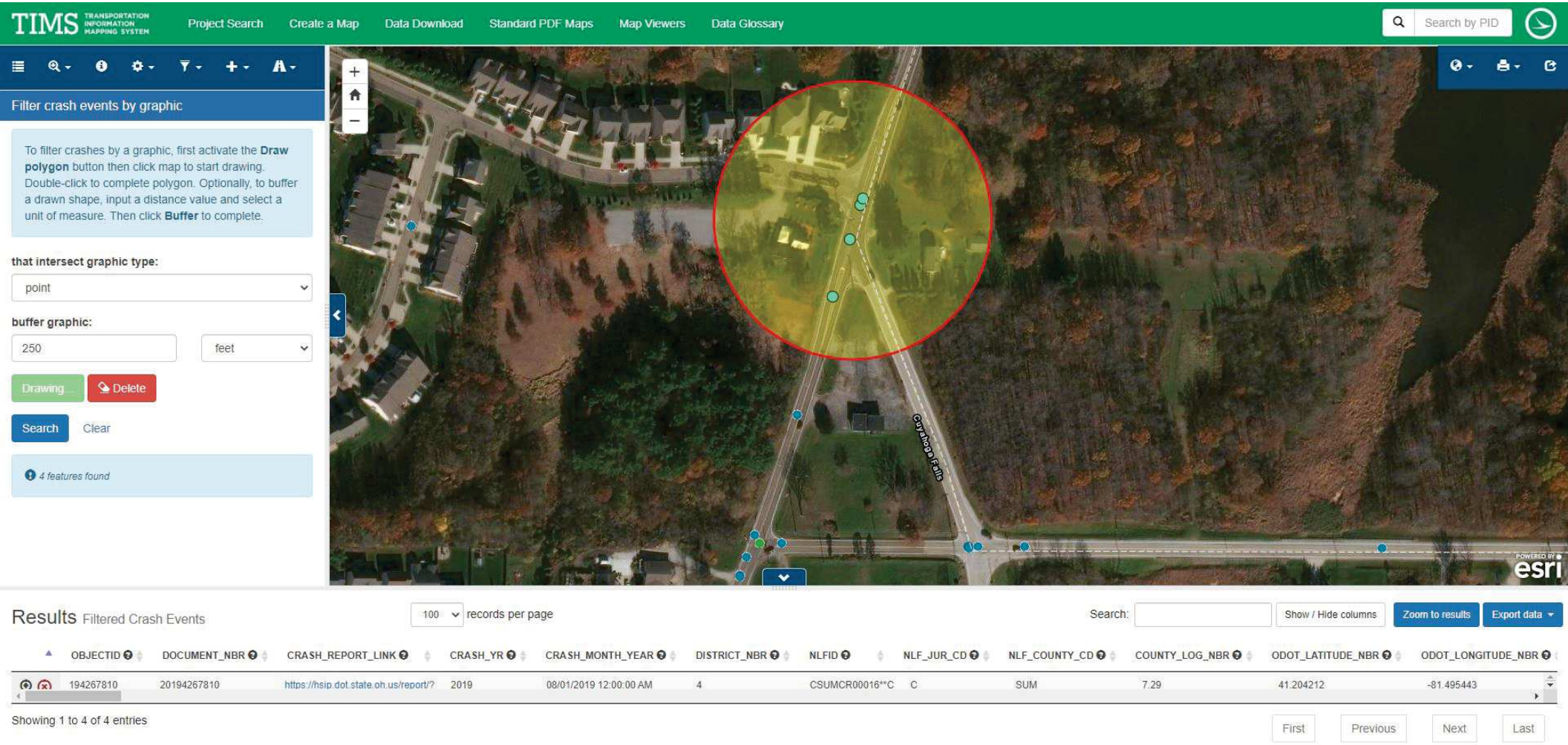
100 records per page

Search: | Show / Hide columns | Zoom to results | Export data

OBJECTID	DOCUMENT_NBR	CRASH_REPORT_LINK	CRASH_YR	CRASH_MONTH_YEAR	DISTRICT_NBR	NLFID	NLF_JUR_CD	NLF_COUNTY_CD	COUNTY_LOG_NBR	ODOT_LATITUDE_NBR	ODOT_LONGITUDE_NBR
186029755	20186029755	https://hsip.dot.state.oh.us/report/?	2018	01/01/2018 12:00:00 AM	4	CSUMCR00145**C	C	SUM	0.003	41.202997	-81.495924

Showing 1 to 10 of 10 entries

First | Previous | Next | Last



Results Filtered Crash Events

100 records per page

Search:

Show / Hide columns | Zoom to results | Export data

OBJECTID	DOCUMENT_NBR	CRASH_REPORT_LINK	CRASH_YR	CRASH_MONTH_YEAR	DISTRICT_NBR	NLFID	NLF_JUR_CD	NLF_COUNTY_CD	COUNTY_LOG_NBR	ODOT_LATITUDE_NBR	ODOT_LONGITUDE_NBR
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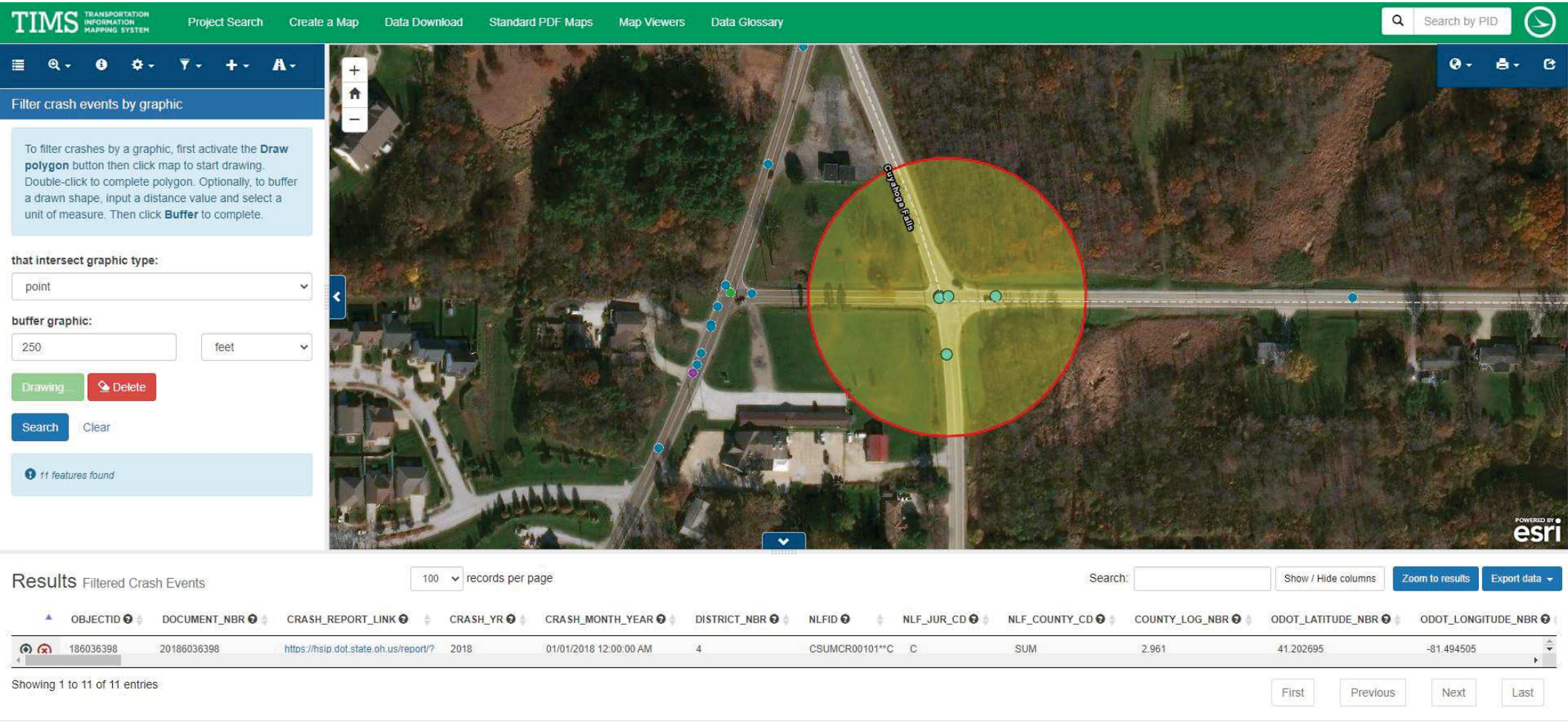
Showing 1 to 4 of 4 entries

First | Previous | Next | Last



Results Filtered Crash Events

100 records per page

Search:

Show / Hide columns | Zoom to results | Export data

OBJECTID	DOCUMENT_NBR	CRASH_REPORT_LINK	CRASH_YR	CRASH_MONTH_YEAR	DISTRICT_NBR	NLFID	NLF_JUR_CD	NLF_COUNTY_CD	COUNTY_LOG_NBR	ODOT_LATITUDE_NBR	ODOT_LONGITUDE_NBR
186036398	20186036398	https://hsip.dot.state.oh.us/report/?	2018	01/01/2018 12:00:00 AM	4	CSUMCR00101**C	C	SUM	2.961	41.202695	-81.494505

Showing 1 to 11 of 11 entries

First | Previous | Next | Last

APPENDIX D
TRAFFIC COUNT DATA AND DESIGN VOLUME CALCULATIONS

State Rd. & Boulder Blvd. - TMC
Thu Apr 29, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832004, Location: 41.201954, -81.496581

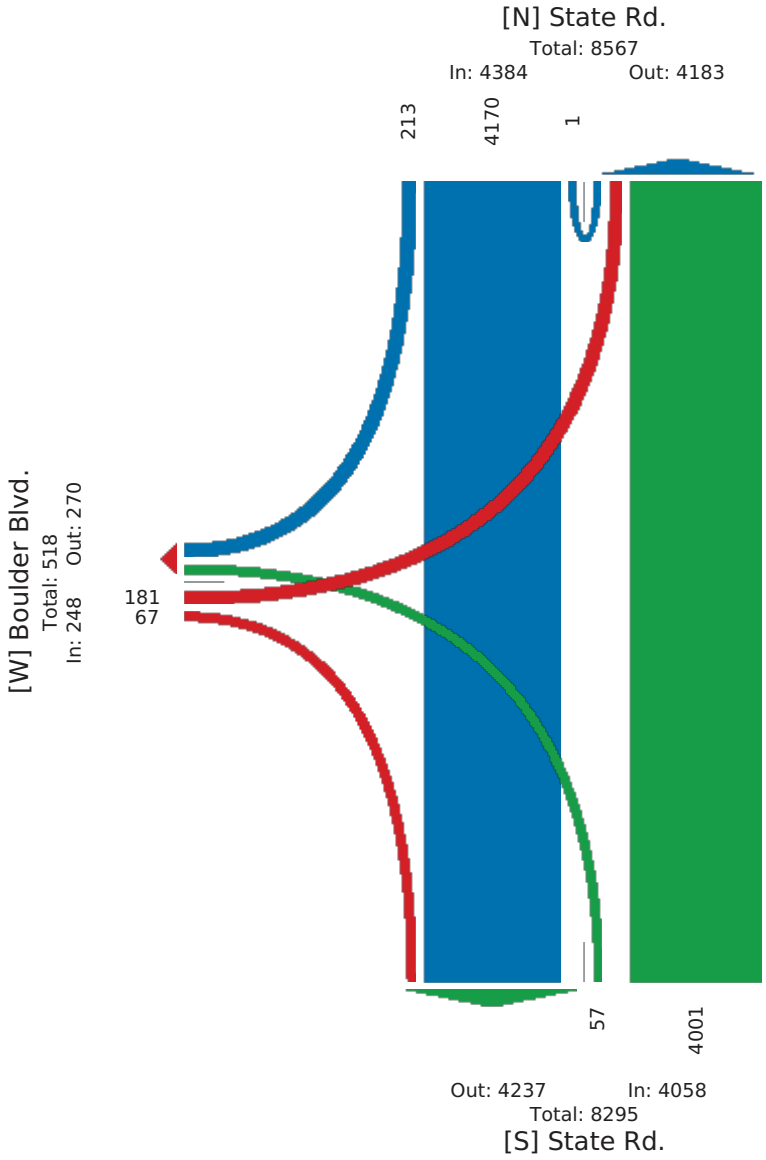
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.				State Rd.				Boulder Blvd.				
Direction	Southbound				Northbound				Eastbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2021-04-29 7:00AM	101	5	0	**106**	0	100	0	**100**	3	0	0	**3**	**209**
7:15AM	80	4	0	**84**	2	83	0	**85**	8	1	0	**9**	**178**
7:30AM	74	1	0	**75**	0	103	0	**103**	8	1	0	**9**	**187**
7:45AM	71	0	0	**71**	1	102	0	**103**	4	1	0	**5**	**179**
Hourly Total	326	10	0	**336**	3	388	0	**391**	23	3	0	**26**	**753**
8:00AM	72	4	0	**76**	1	64	0	**65**	4	1	0	**5**	**146**
8:15AM	58	1	0	**59**	1	71	0	**72**	3	0	0	**3**	**134**
8:30AM	82	2	0	**84**	1	75	0	**76**	0	2	0	**2**	**162**
8:45AM	70	5	0	**75**	2	60	0	**62**	5	0	0	**5**	**142**
Hourly Total	282	12	0	**294**	5	270	0	**275**	12	3	0	**15**	**584**
9:00AM	69	1	0	**70**	0	68	0	**68**	3	1	0	**4**	**142**
9:15AM	89	2	0	**91**	0	67	0	**67**	4	1	0	**5**	**163**
9:30AM	66	1	0	**67**	0	63	0	**63**	1	2	0	**3**	**133**
9:45AM	81	3	0	**84**	0	82	0	**82**	1	0	0	**1**	**167**
Hourly Total	305	7	0	**312**	0	280	0	**280**	9	4	0	**13**	**605**
10:00AM	76	0	0	**76**	0	78	0	**78**	1	1	0	**2**	**156**
10:15AM	54	3	0	**57**	2	77	0	**79**	3	3	0	**6**	**142**
10:30AM	72	4	0	**76**	1	72	0	**73**	3	2	0	**5**	**154**
10:45AM	74	2	0	**76**	2	62	0	**64**	3	0	0	**3**	**143**
Hourly Total	276	9	0	**285**	5	289	0	**294**	10	6	0	**16**	**595**
11:00AM	82	4	0	**86**	1	69	0	**70**	0	3	0	**3**	**159**
11:15AM	71	7	0	**78**	0	78	0	**78**	5	2	0	**7**	**163**
11:30AM	62	4	1	**67**	3	83	0	**86**	5	1	0	**6**	**159**
11:45AM	65	2	0	**67**	2	62	0	**64**	1	3	0	**4**	**135**
Hourly Total	280	17	1	**298**	6	292	0	**298**	11	9	0	**20**	**616**
12:00PM	68	5	0	**73**	2	66	0	**68**	4	1	0	**5**	**146**
12:15PM	90	3	0	**93**	0	66	0	**66**	2	0	0	**2**	**161**
12:30PM	94	3	0	**97**	0	75	0	**75**	5	1	0	**6**	**178**
12:45PM	115	1	0	**116**	1	79	0	**80**	2	1	0	**3**	**199**
Hourly Total	367	12	0	**379**	3	286	0	**289**	13	3	0	**16**	**684**
1:00PM	69	6	0	**75**	0	100	0	**100**	4	0	0	**4**	**179**
1:15PM	100	4	0	**104**	0	72	0	**72**	6	1	0	**7**	**183**
1:30PM	87	2	0	**89**	0	115	0	**115**	8	1	0	**9**	**213**
1:45PM	125	7	0	**132**	1	80	0	**81**	3	1	0	**4**	**217**
Hourly Total	381	19	0	**400**	1	367	0	**368**	21	3	0	**24**	**792**
2:00PM	119	6	0	**125**	1	114	0	**115**	4	3	0	**7**	**247**
2:15PM	118	11	0	**129**	3	104	0	**107**	6	0	0	**6**	**242**
2:30PM	110	6	0	**116**	0	146	0	**146**	4	2	0	**6**	**268**
2:45PM	98	5	0	**103**	1	116	0	**117**	4	0	0	**4**	**224**
Hourly Total	445	28	0	**473**	5	480	0	**485**	18	5	0	**23**	**981**
3:00PM	111	6	0	**117**	0	136	0	**136**	2	1	0	**3**	**256**
3:15PM	130	9	0	**139**	2	83	0	**85**	3	4	0	**7**	**231**
3:30PM	124	10	0	**134**	1	125	0	**126**	7	5	0	**12**	**272**
3:45PM	141	6	0	**147**	4	100	0	**104**	4	3	0	**7**	**258**
Hourly Total	506	31	0	**537**	7	444	0	**451**	16	13	0	**29**	**1017**
4:00PM	107	6	0	**113**	3	143	0	**146**	8	2	0	**10**	**269**
4:15PM	112	10	0	**122**	1	122	0	**123**	4	5	0	**9**	**254**
4:30PM	123	10	0	**133**	4	89	0	**93**	4	0	0	**4**	**230**
4:45PM	99	8	0	**107**	2	105	0	**107**	1	3	0	**4**	**218**
Hourly Total	441	34	0	**475**	10	459	0	**469**	17	10	0	**27**	**971**
5:00PM	97	5	0	**102**	1	61	0	**62**	5	1	0	**6**	**170**
5:15PM	88	0	0	**88**	3	69	0	**72**	6	1	0	**7**	**167**
5:30PM	80	4	0	**84**	0	61	0	**61**	6	2	0	**8**	**153**
5:45PM	68	5	0	**73**	3	65	0	**68**	2	0	0	**2**	**143**
Hourly Total	333	14	0	**347**	7	256	0	**263**	19	4	0	**23**	**633**
6:00PM	59	3	0	**62**	1	52	0	**53**	2	1	0	**3**	**118**
6:15PM	74	4	0	**78**	2	43	0	**45**	5	0	0	**5**	**128**
6:30PM	57	6	0	**63**	1	49	0	**50**	2	0	0	**2**	**115**
6:45PM	38	7	0	**45**	1	46	0	**47**	3	3	0	**6**	**98**
Hourly Total	228	20	0	**248**	5	190	0	**195**	12	4	0	**16**	**459**
Total	4170	213	1	**4384**	57	4001	0	**4058**	181	67	0	**248**	**8690**
% Approach	95.1%	4.9%	0%	**-**	1.4%	98.6%	0%	**-**	73.0%	27.0%	0%	**-**	-
% Total	48.0%	2.5%	0%	**50.4%**	0.7%	46.0%	0%	**46.7%**	2.1%	0.8%	0%	**2.9%**	-
Lights	3917	203	1	**4121**	54	3733	0	**3787**	174	61	0	**235**	8143
% Lights	93.9%	95.3%	100%	**94.0%**	94.7%	93.3%	0%	**93.3%**	96.1%	91.0%	0%	**94.8%**	93.7%
Single-Unit Trucks	122	3	0	**125**	1	132	0	**133**	3	1	0	**4**	262
% Single-Unit Trucks	2.9%	1.4%	0%	**2.9%**	1.8%	3.3%	0%	**3.3%**	1.7%	1.5%	0%	**1.6%**	3.0%
Articulated Trucks	117	0	0	**117**	0	116	0	**116**	0	0	0	**0**	233
% Articulated Trucks	2.8%	0%	0%	**2.7%**	0%	2.9%	0%	**2.9%**	0%	0%	0%	**0%**	2.7%
Buses	14	7	0	**21**	2	20	0	**22**	4	5	0	**9**	52
% Buses	0.3%	3.3%	0%	**0.5%**	3.5%	0.5%	0%	**0.5%**	2.2%	7.5%	0%	**3.6%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Boulder Blvd. - TMC
Thu Apr 29, 2021
Full Length (7 AM-7 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
AM Peak (7 AM - 8 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832004, Location: 41.201954, -81.496581

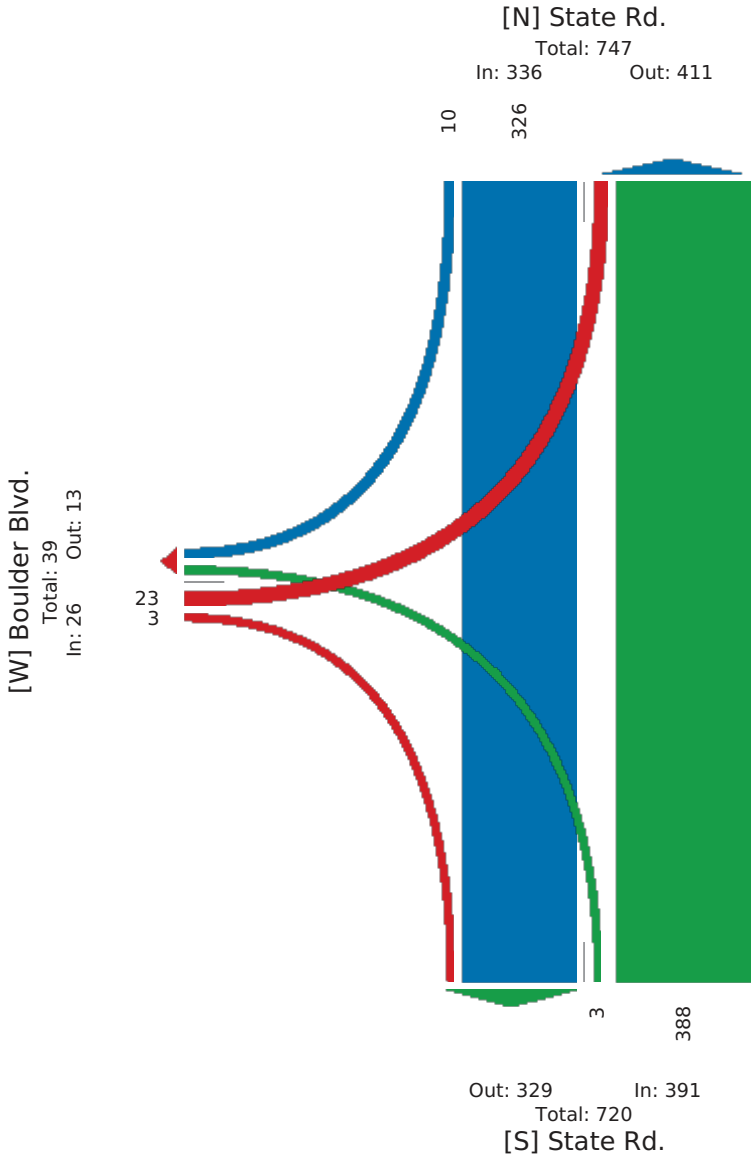
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.				State Rd.				Boulder Blvd.				
Direction	Southbound				Northbound				Eastbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2021-04-29 7:00AM	101	5	0	**106**	0	100	0	**100**	3	0	0	**3**	**209**
7:15AM	80	4	0	**84**	2	83	0	**85**	8	1	0	**9**	**178**
7:30AM	74	1	0	**75**	0	103	0	**103**	8	1	0	**9**	**187**
7:45AM	71	0	0	**71**	1	102	0	**103**	4	1	0	**5**	**179**
Total	326	10	0	**336**	3	388	0	**391**	23	3	0	**26**	**753**
% Approach	97.0%	3.0%	0%	**-**	0.8%	99.2%	0%	**-**	88.5%	11.5%	0%	**-**	-
% Total	43.3%	1.3%	0%	**44.6%**	0.4%	51.5%	0%	**51.9%**	3.1%	0.4%	0%	**3.5%**	-
PHF	0.807	0.500	-	**0.792**	0.375	0.942	-	**0.949**	0.719	0.750	-	**0.722**	0.901
Lights	298	9	0	**307**	1	350	0	**351**	21	2	0	**23**	681
% Lights	91.4%	90.0%	0%	**91.4%**	33.3%	90.2%	0%	**89.8%**	91.3%	66.7%	0%	**88.5%**	90.4%
Single-Unit Trucks	12	0	0	**12**	0	16	0	**16**	0	0	0	**0**	28
% Single-Unit Trucks	3.7%	0%	0%	**3.6%**	0%	4.1%	0%	**4.1%**	0%	0%	0%	**0%**	3.7%
Articulated Trucks	12	0	0	**12**	0	18	0	**18**	0	0	0	**0**	30
% Articulated Trucks	3.7%	0%	0%	**3.6%**	0%	4.6%	0%	**4.6%**	0%	0%	0%	**0%**	4.0%
Buses	4	1	0	**5**	2	4	0	**6**	2	1	0	**3**	14
% Buses	1.2%	10.0%	0%	**1.5%**	66.7%	1.0%	0%	**1.5%**	8.7%	33.3%	0%	**11.5%**	1.9%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Boulder Blvd. - TMC
Thu Apr 29, 2021
AM Peak (7 AM - 8 AM)
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
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832004, Location: 41.201954, -81.496581

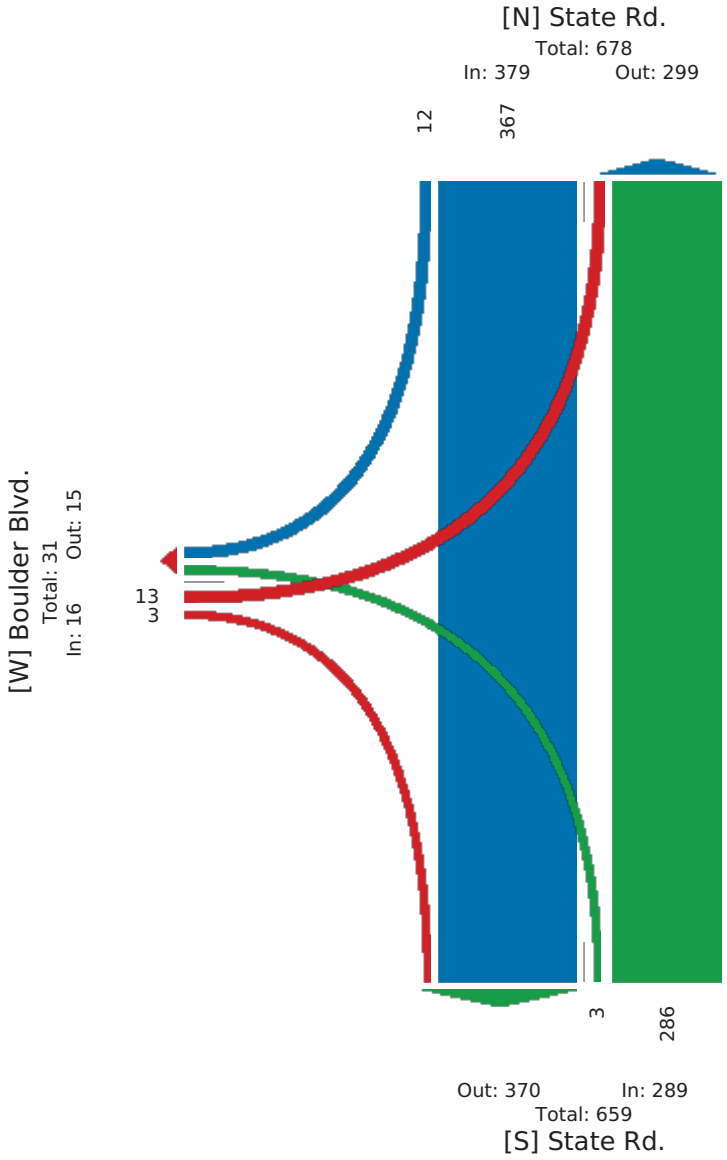
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.				State Rd.				Boulder Blvd.				
Direction	Southbound				Northbound				Eastbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2021-04-29 12:00PM	68	5	0	**73**	2	66	0	**68**	4	1	0	**5**	**146**
12:15PM	90	3	0	**93**	0	66	0	**66**	2	0	0	**2**	**161**
12:30PM	94	3	0	**97**	0	75	0	**75**	5	1	0	**6**	**178**
12:45PM	115	1	0	**116**	1	79	0	**80**	2	1	0	**3**	**199**
Total	367	12	0	**379**	3	286	0	**289**	13	3	0	**16**	**684**
% Approach	96.8%	3.2%	0%	**-**	1.0%	99.0%	0%	**-**	81.3%	18.8%	0%	**-**	-
% Total	53.7%	1.8%	0%	**55.4%**	0.4%	41.8%	0%	**42.3%**	1.9%	0.4%	0%	**2.3%**	-
PHF	0.798	0.600	-	**0.817**	0.375	0.905	-	**0.903**	0.650	0.750	-	**0.667**	0.859
Lights	339	12	0	**351**	3	254	0	**257**	13	3	0	**16**	624
% Lights	92.4%	100%	0%	**92.6%**	100%	88.8%	0%	**88.9%**	100%	100%	0%	**100%**	91.2%
Single-Unit Trucks	19	0	0	**19**	0	18	0	**18**	0	0	0	**0**	37
% Single-Unit Trucks	5.2%	0%	0%	**5.0%**	0%	6.3%	0%	**6.2%**	0%	0%	0%	**0%**	5.4%
Articulated Trucks	9	0	0	**9**	0	12	0	**12**	0	0	0	**0**	21
% Articulated Trucks	2.5%	0%	0%	**2.4%**	0%	4.2%	0%	**4.2%**	0%	0%	0%	**0%**	3.1%
Buses	0	0	0	**0**	0	2	0	**2**	0	0	0	**0**	2
% Buses	0%	0%	0%	**0%**	0%	0.7%	0%	**0.7%**	0%	0%	0%	**0%**	0.3%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Boulder Blvd. - TMC
Thu Apr 29, 2021
Midday Peak (12 PM - 1 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 (3:30 PM - 4:30 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832004, Location: 41.201954, -81.496581

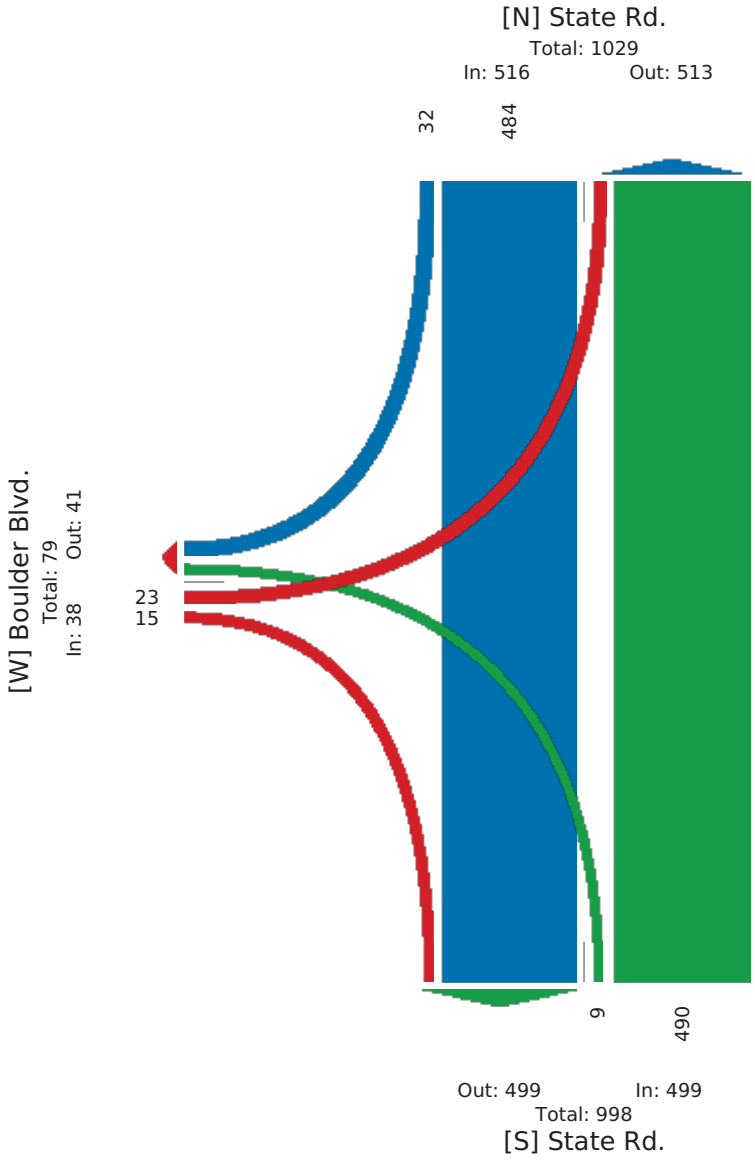
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.				State Rd.				Boulder Blvd.				
Direction	Southbound				Northbound				Eastbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2021-04-29 3:30PM	124	10	0	**134**	1	125	0	**126**	7	5	0	**12**	**272**
3:45PM	141	6	0	**147**	4	100	0	**104**	4	3	0	**7**	**258**
4:00PM	107	6	0	**113**	3	143	0	**146**	8	2	0	**10**	**269**
4:15PM	112	10	0	**122**	1	122	0	**123**	4	5	0	**9**	**254**
Total	484	32	0	**516**	9	490	0	**499**	23	15	0	**38**	**1053**
% Approach	93.8%	6.2%	0%	**-**	1.8%	98.2%	0%	**-**	60.5%	39.5%	0%	**-**	-
% Total	46.0%	3.0%	0%	**49.0%**	0.9%	46.5%	0%	**47.4%**	2.2%	1.4%	0%	**3.6%**	-
PHF	0.858	0.800	-	**0.878**	0.563	0.857	-	**0.854**	0.719	0.750	-	**0.792**	0.968
Lights	473	32	0	**505**	9	479	0	**488**	23	13	0	**36**	1029
% Lights	97.7%	100%	0%	**97.9%**	100%	97.8%	0%	**97.8%**	100%	86.7%	0%	**94.7%**	97.7%
Single-Unit Trucks	7	0	0	**7**	0	5	0	**5**	0	0	0	**0**	12
% Single-Unit Trucks	1.4%	0%	0%	**1.4%**	0%	1.0%	0%	**1.0%**	0%	0%	0%	**0%**	1.1%
Articulated Trucks	3	0	0	**3**	0	4	0	**4**	0	0	0	**0**	7
% Articulated Trucks	0.6%	0%	0%	**0.6%**	0%	0.8%	0%	**0.8%**	0%	0%	0%	**0%**	0.7%
Buses	1	0	0	**1**	0	2	0	**2**	0	2	0	**2**	5
% Buses	0.2%	0%	0%	**0.2%**	0%	0.4%	0%	**0.4%**	0%	13.3%	0%	**5.3%**	0.5%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Boulder Blvd. - TMC
Thu Apr 29, 2021
PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour
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. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

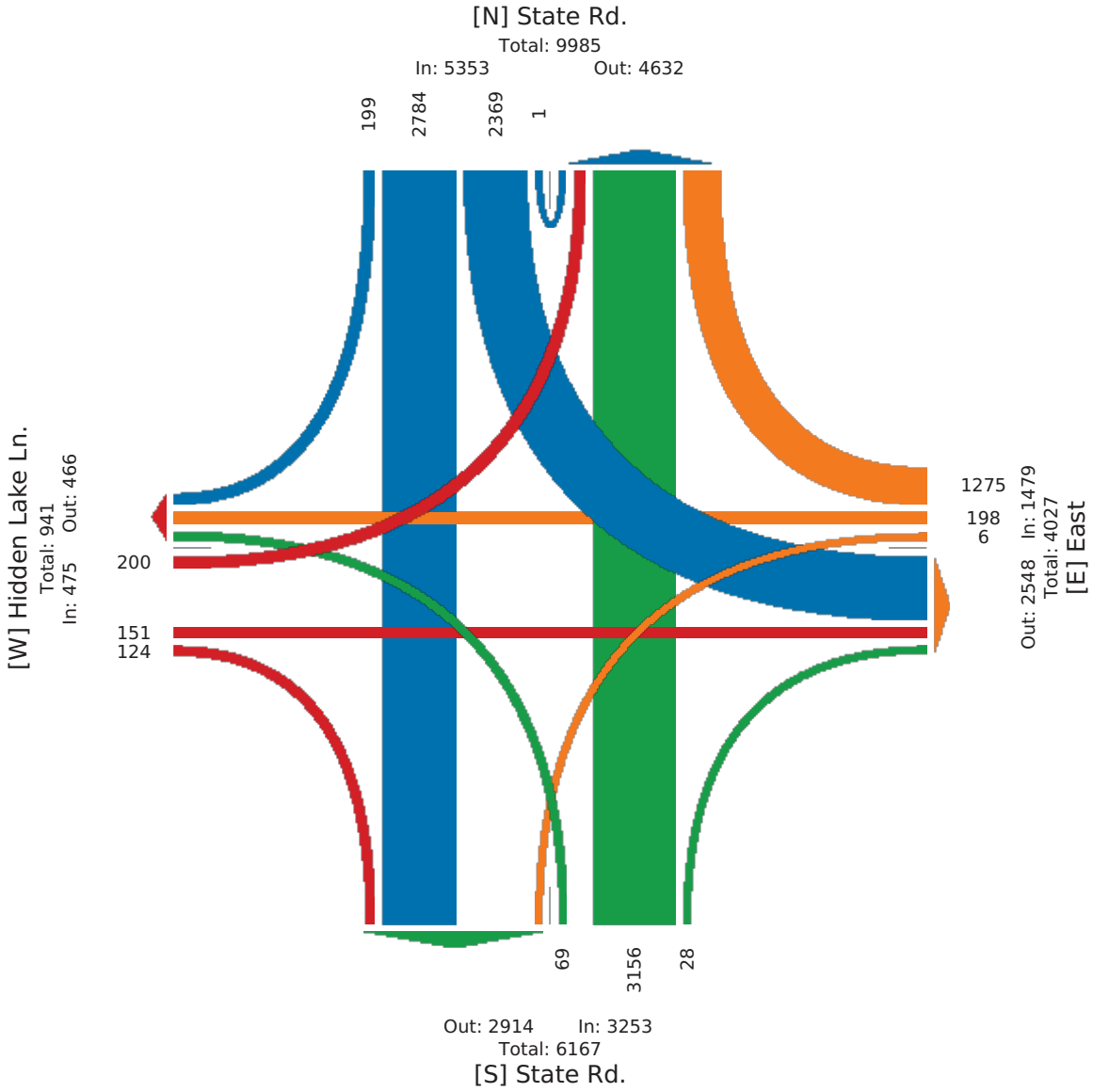
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.					East					State Rd.					Hidden Lake Ln.					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2021-04-29 7:00AM	45	36	1	0	**82**	0	0	25	0	**25**	2	61	0	0	**63**	4	3	1	0	**8**	**178**
7:15AM	95	73	1	0	**169**	0	3	28	0	**31**	0	103	0	0	**103**	15	5	4	0	**24**	**327**
7:30AM	100	99	2	0	**201**	0	2	53	0	**55**	0	110	0	0	**110**	14	1	9	0	**24**	**390**
7:45AM	74	84	4	0	**162**	0	2	46	0	**48**	0	89	1	0	**90**	2	2	9	0	**13**	**313**
Hourly Total	314	292	8	0	**614**	0	7	152	0	**159**	2	363	1	0	**366**	35	11	23	0	**69**	**1208**
8:00AM	38	64	7	0	**109**	0	1	38	0	**39**	1	78	1	0	**80**	6	4	7	0	**17**	**245**
8:15AM	35	47	3	0	**85**	0	0	25	0	**25**	3	66	0	0	**69**	8	6	1	0	**15**	**194**
8:30AM	59	42	2	0	**103**	0	1	38	0	**39**	2	77	0	0	**79**	8	6	3	0	**17**	**238**
8:45AM	54	46	3	0	**103**	1	3	32	0	**36**	0	84	0	0	**84**	3	3	0	0	**6**	**229**
Hourly Total	186	199	15	0	**400**	1	5	133	0	**139**	6	305	1	0	**312**	25	19	11	0	**55**	**906**
9:00AM	44	43	9	0	**96**	0	3	22	0	**25**	2	56	0	0	**58**	3	3	2	0	**8**	**187**
9:15AM	40	36	1	0	**77**	0	3	12	0	**15**	0	49	1	0	**50**	3	5	2	0	**10**	**152**
9:30AM	28	44	1	0	**73**	0	6	19	0	**25**	3	57	1	0	**61**	1	3	0	0	**4**	**163**
9:45AM	28	43	3	0	**74**	0	3	16	0	**19**	1	48	0	0	**49**	2	1	1	0	**4**	**146**
Hourly Total	140	166	14	0	**320**	0	15	69	0	**84**	6	210	2	0	**218**	9	12	5	0	**26**	**648**
10:00AM	27	40	3	0	**70**	0	2	24	0	**26**	0	53	0	0	**53**	4	3	2	0	**9**	**158**
10:15AM	31	56	2	0	**89**	0	2	23	0	**25**	0	51	0	0	**51**	1	3	1	0	**5**	**170**
10:30AM	32	43	0	0	**75**	1	2	16	0	**19**	0	47	0	0	**47**	3	1	2	0	**6**	**147**
10:45AM	30	44	1	0	**75**	0	2	15	0	**17**	0	67	1	0	**68**	3	3	1	0	**7**	**167**
Hourly Total	120	183	6	0	**309**	1	8	78	0	**87**	0	218	1	0	**219**	11	10	6	0	**27**	**642**
11:00AM	27	52	0	0	**79**	0	3	16	0	**19**	0	68	0	0	**68**	1	2	1	0	**4**	**170**
11:15AM	40	29	2	0	**71**	0	3	17	0	**20**	0	59	0	0	**59**	1	1	3	0	**5**	**155**
11:30AM	30	43	6	0	**79**	0	2	11	0	**13**	1	52	0	0	**53**	7	3	1	0	**11**	**156**
11:45AM	27	43	2	0	**72**	0	2	20	0	**22**	1	51	1	0	**53**	1	2	2	0	**5**	**152**
Hourly Total	124	167	10	0	**301**	0	10	64	0	**74**	2	230	1	0	**233**	10	8	7	0	**25**	**633**
12:00PM	47	48	0	0	**95**	0	4	14	0	**18**	1	46	0	0	**47**	4	6	5	0	**15**	**175**
12:15PM	44	44	7	0	**95**	0	4	21	0	**25**	2	63	0	0	**65**	2	2	2	0	**6**	**191**
12:30PM	40	35	2	0	**77**	0	7	18	0	**25**	0	58	1	0	**59**	6	2	1	0	**9**	**170**
12:45PM	34	46	3	0	**83**	0	4	24	0	**28**	3	45	0	0	**48**	3	3	2	0	**8**	**167**
Hourly Total	165	173	12	0	**350**	0	19	77	0	**96**	6	212	1	0	**219**	15	13	10	0	**38**	**703**
1:00PM	26	43	4	0	**73**	0	3	21	0	**24**	3	54	0	0	**57**	1	4	3	0	**8**	**162**
1:15PM	34	66	2	0	**102**	0	4	34	0	**38**	4	49	2	0	**55**	4	2	4	0	**10**	**205**
1:30PM	44	60	2	0	**106**	1	4	27	0	**32**	1	52	1	0	**54**	3	4	1	0	**8**	**200**
1:45PM	49	71	1	0	**121**	0	4	20	0	**24**	2	54	0	0	**56**	1	3	2	0	**6**	**207**
Hourly Total	153	240	9	0	**402**	1	15	102	0	**118**	10	209	3	0	**222**	9	13	10	0	**32**	**774**
2:00PM	40	47	2	0	**89**	1	2	32	0	**35**	0	71	3	0	**74**	4	0	1	0	**5**	**203**
2:15PM	82	65	4	0	**151**	2	4	25	0	**31**	1	48	3	0	**52**	2	5	3	0	**10**	**244**
2:30PM	99	66	2	0	**167**	0	2	37	0	**39**	2	81	1	0	**84**	4	5	4	0	**13**	**303**
2:45PM	66	75	3	0	**144**	0	4	61	0	**65**	0	54	2	0	**56**	7	3	3	0	**13**	**278**
Hourly Total	287	253	11	0	**551**	3	12	155	0	**170**	3	254	9	0	**266**	17	13	11	0	**41**	**1028**
3:00PM	73	70	8	0	**151**	0	5	59	0	**64**	5	78	1	0	**84**	5	5	3	0	**13**	**312**
3:15PM	58	73	7	0	**138**	0	4	35	0	**39**	0	78	1	0	**79**	6	6	2	0	**14**	**270**
3:30PM	69	76	6	0	**151**	0	4	32	0	**36**	4	106	0	0	**110**	4	3	3	0	**10**	**307**
3:45PM	51	51	11	0	**113**	0	10	34	0	**44**	0	79	1	0	**80**	4	2	3	0	**9**	**246**
Hourly Total	251	270	32	0	**553**	0	23	160	0	**183**	9	341	3	0	**353**	19	16	11	0	**46**	**1135**
4:00PM	34	69	6	0	**109**	0	13	27	0	**40**	1	95	0	0	**96**	5	3	2	0	**10**	**255**
4:15PM	56	79	10	0	**145**	0	4	35	0	**39**	0	68	0	0	**68**	7	4	3	0	**14**	**266**
4:30PM	45	66	4	0	**115**	0	10	34	0	**44**	4	91	0	0	**95**	5	4	4	0	**13**	**267**
4:45PM	67	92	7	0	**166**	0	8	31	0	**39**	3	65	0	0	**68**	7	9	5	0	**21**	**294**
Hourly Total	202	306	27	0	**535**	0	35	127	0	**162**	8	319	0	0	**327**	24	20	14	0	**58**	**1082**
5:00PM	71	69	7	0	**147**	0	6	21	0	**27**	7	95	1	0	**103**	3	0	4	0	**7**	**284**
5:15PM	62	89	14	0	**165**	0	7	18	0	**25**	1	92	0	0	**93**	3	0	0	0	**3**	**286**
5:30PM	73	93	7	0	**173**	0	3	17	0	**20**	0	68	2	0	**70**	5	1	3	0	**9**	**272**
5:45PM	58	64	7	0	**129**	0	3	19	0	**22**	1	72	0	0	**73**	5	1	3	0	**9**	**233**
Hourly Total	264	315	35	0	**614**	0	19	75	0	**94**	9	327	3	0	**339**	16	2	10	0	**28**	**1075**
6:00PM	56	66	6	0	**128**	0	6	16	0	**22**	0	46	0	0	**46**	4	6	0	0	**10**	**206**
6:15PM	39	59	3	0	**101**	0	8	18	0	**26**	2	48	1	0	**51**	2	6	4	0	**12**	**190**
6:30PM	39	42	5	1	**87**	0	11	35	0	**46**	1	37	1	0	**39**	2	2	2	0	**6**	**178**
6:45PM	29	53	6	0	**88**	0	5	14	0	**19**	5	37	1	0	**43**	2	0	0	0	**2**	**152**
Hourly Total	163	220	20	1	**404**	0	30	83	0	**113**	8	168	3	0	**179**	10	14	6	0	**30**	**726**
Total	2369	2784	199	1	**5353**	6	198	1275	0	**1479**	69	3156	28	0	**3253**	200	151	124	0	**475**	**10560**
% Approach	44.3%	52.0%	3.7%	0%	**-**	0.4%	13.4%	86.2%	0%	**-**	2.1%	97.0%	0.9%	0%	**-**	42.1%	31.8%	26.1%	0%	**-**	-
% Total	22.4%	26.4%	1.9%	0%	**50.7%**	0.1%	1.9%	12.1%	0%	**14.0%**	0.7%	29.9%	0.3%	0%	**30.8%**	1.9%	1.4%	1.2%	0%	**4.5%**	-
Lights	2223	2641	191	1	**5056**	6	196	1198	0	**1400**	64	2953	28	0	**3045**	197	147	117	0	**461**	9962
% Lights	93.8%	94.9%	96.0%	100%	**94.5%**	100%	99.0%	94.0%	0%	**94.7%**	92.8%	93.6%	100%	0%	**93.6%**	98.5%	97.4%	94.4%	0%	**97.1%**	94.3%
Single-Unit Trucks	73	74	2	0	**149**	0	1	30	0	**31**	3	103	0	0	**106**	1	0	4	0	**5**	291
% Single-Unit Trucks	3.1%	2.7%	1.0%	0%	**2.8%**	0%	0.5%	2.4%	0%	**2.1%**	4.3%	3.3%	0%	0%	**3.3%**	0.5%	0%	3.2%	0%	**1.1%**	2.8%
Articulated Trucks	60	53	0	0	**113**	0	0	43	0	**43**	0	85	0	0	**85**	0	0	0	0	**0**	241
% Articulated Trucks	2.5%	1.9%	0%	0%	**2.1%**	0%	0%	3.4%	0%	**2.9%**	0%	2.7%	0%	0%	**2.6%**	0%	0%	0%	0%	**0%**	2.3%
Buses	13	16	6	0	**35**	0	1	4	0	**5**	2	15	0	0	**17**	2	4	3	0	**9**	66
% Buses	0.5%	0.6%	3.0%	0%	**0.7%**	0%	0.5%	0.3%	0%	**0.3%**	2.9%	0.5%	0%	0%	**0.5%**	1.0%	2.6%	2.4%	0%	**1.9%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

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



State Rd. & Hidden Lake Ln. - TMC

Thu Apr 29, 2021
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

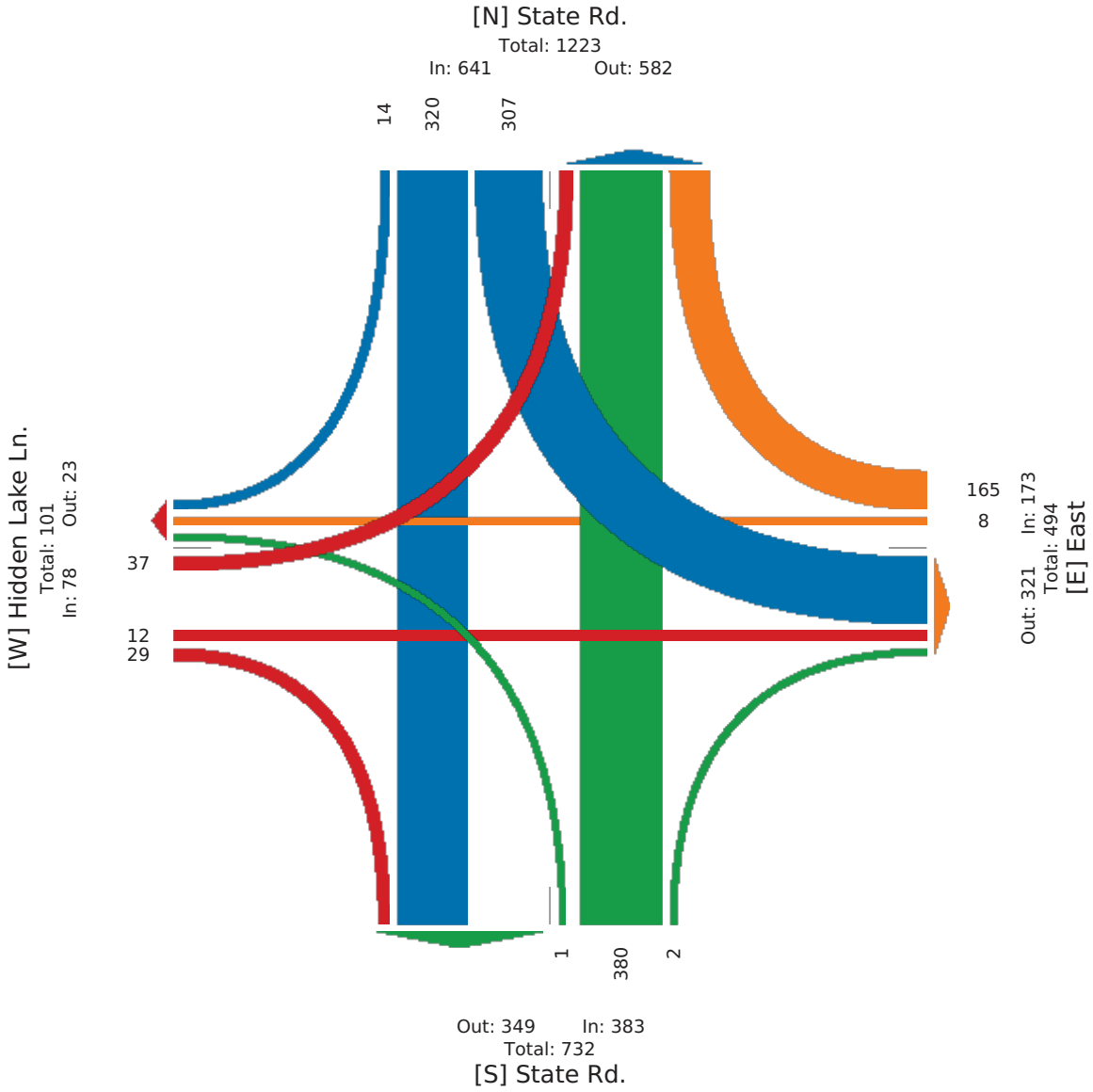
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.					East					State Rd.					Hidden Lake Ln.					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-29 7:15AM	95	73	1	0	**169**	0	3	28	0	**31**	0	103	0	0	**103**	15	5	4	0	**24**	**327**
7:30AM	100	99	2	0	**201**	0	2	53	0	**55**	0	110	0	0	**110**	14	1	9	0	**24**	**390**
7:45AM	74	84	4	0	**162**	0	2	46	0	**48**	0	89	1	0	**90**	2	2	9	0	**13**	**313**
8:00AM	38	64	7	0	**109**	0	1	38	0	**39**	1	78	1	0	**80**	6	4	7	0	**17**	**245**
Total	307	320	14	0	**641**	0	8	165	0	**173**	1	380	2	0	**383**	37	12	29	0	**78**	**1275**
% Approach	47.9%	49.9%	2.2%	0%	**-**	0%	4.6%	95.4%	0%	**-**	0.3%	99.2%	0.5%	0%	**-**	47.4%	15.4%	37.2%	0%	**-**	-
% Total	24.1%	25.1%	1.1%	0%	**50.3%**	0%	0.6%	12.9%	0%	**13.6%**	0.1%	29.8%	0.2%	0%	**30.0%**	2.9%	0.9%	2.3%	0%	**6.1%**	-
PHF	0.768	0.808	0.500	-	**0.797**	-	0.667	0.778	-	**0.786**	0.250	0.864	0.500	-	**0.870**	0.617	0.600	0.806	-	**0.813**	0.817
Lights	293	309	12	0	**614**	0	8	150	0	**158**	0	358	2	0	**360**	37	10	29	0	**76**	1208
% Lights	95.4%	96.6%	85.7%	0%	**95.8%**	0%	100%	90.9%	0%	**91.3%**	0%	94.2%	100%	0%	**94.0%**	100%	83.3%	100%	0%	**97.4%**	94.7%
Single-Unit Trucks	4	6	0	0	**10**	0	0	6	0	**6**	1	11	0	0	**12**	0	0	0	0	**0**	28
% Single-Unit Trucks	1.3%	1.9%	0%	0%	**1.6%**	0%	0%	3.6%	0%	**3.5%**	100%	2.9%	0%	0%	**3.1%**	0%	0%	0%	0%	**0%**	2.2%
Articulated Trucks	6	3	0	0	**9**	0	0	7	0	**7**	0	10	0	0	**10**	0	0	0	0	**0**	26
% Articulated Trucks	2.0%	0.9%	0%	0%	**1.4%**	0%	0%	4.2%	0%	**4.0%**	0%	2.6%	0%	0%	**2.6%**	0%	0%	0%	0%	**0%**	2.0%
Buses	4	2	2	0	**8**	0	0	2	0	**2**	0	1	0	0	**1**	0	2	0	0	**2**	13
% Buses	1.3%	0.6%	14.3%	0%	**1.2%**	0%	0%	1.2%	0%	**1.2%**	0%	0.3%	0%	0%	**0.3%**	0%	16.7%	0%	0%	**2.6%**	1.0%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

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



State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

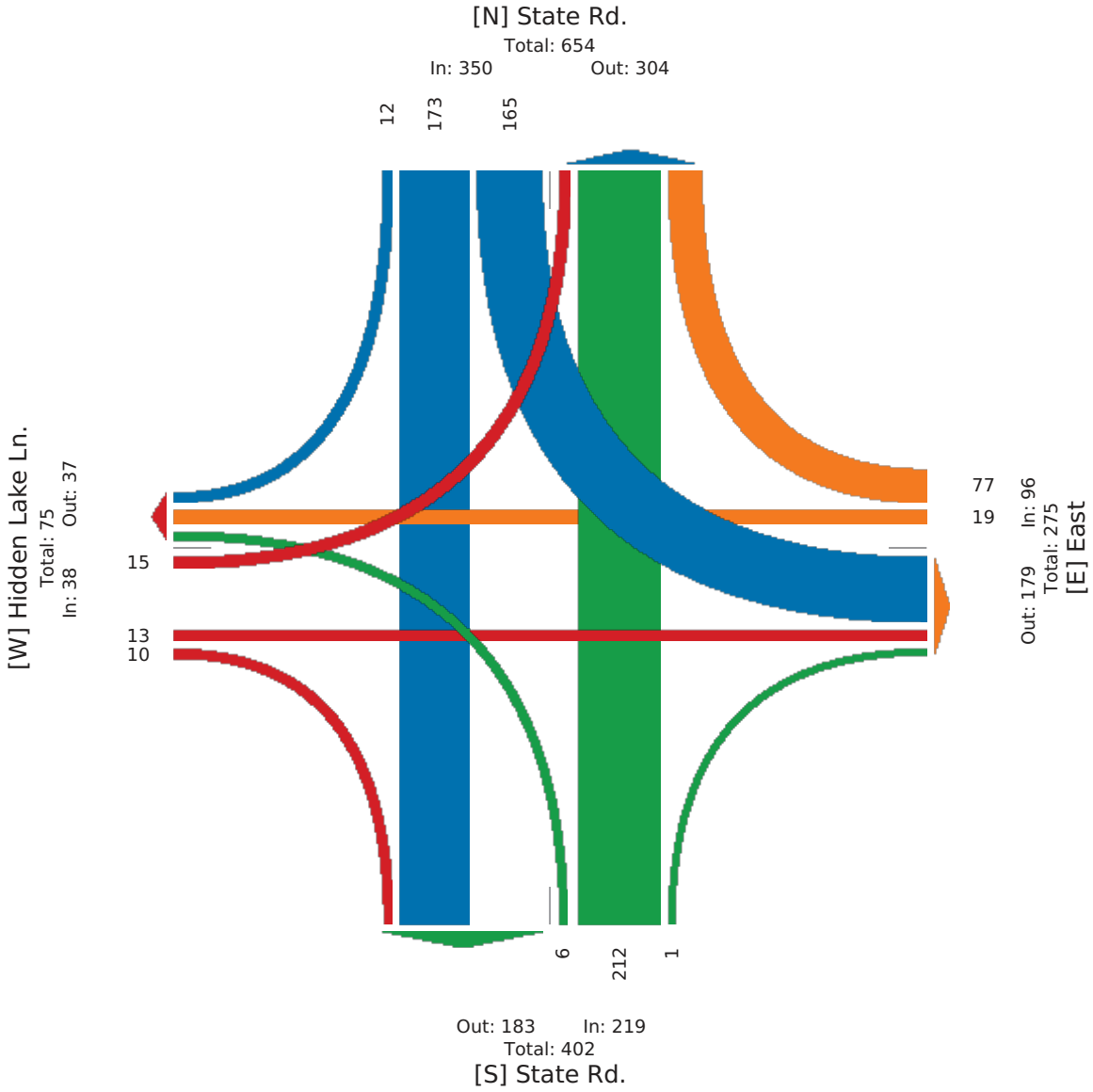
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.					East					State Rd.					Hidden Lake Ln.					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-29 12:00PM	47	48	0	0	**95**	0	4	14	0	**18**	1	46	0	0	**47**	4	6	5	0	**15**	**175**
12:15PM	44	44	7	0	**95**	0	4	21	0	**25**	2	63	0	0	**65**	2	2	2	0	**6**	**191**
12:30PM	40	35	2	0	**77**	0	7	18	0	**25**	0	58	1	0	**59**	6	2	1	0	**9**	**170**
12:45PM	34	46	3	0	**83**	0	4	24	0	**28**	3	45	0	0	**48**	3	3	2	0	**8**	**167**
Total	165	173	12	0	**350**	0	19	77	0	**96**	6	212	1	0	**219**	15	13	10	0	**38**	**703**
% Approach	47.1%	49.4%	3.4%	0%	**-**	0%	19.8%	80.2%	0%	**-**	2.7%	96.8%	0.5%	0%	**-**	39.5%	34.2%	26.3%	0%	**-**	-
% Total	23.5%	24.6%	1.7%	0%	**49.8%**	0%	2.7%	11.0%	0%	**13.7%**	0.9%	30.2%	0.1%	0%	**31.2%**	2.1%	1.8%	1.4%	0%	**5.4%**	-
PHF	0.878	0.901	0.429	-	**0.921**	-	0.679	0.802	-	**0.857**	0.500	0.841	0.250	-	**0.842**	0.625	0.542	0.500	-	**0.633**	0.920
Lights	145	156	11	0	**312**	0	19	68	0	**87**	6	198	1	0	**205**	14	13	8	0	**35**	639
% Lights	87.9%	90.2%	91.7%	0%	**89.1%**	0%	100%	88.3%	0%	**90.6%**	100%	93.4%	100%	0%	**93.6%**	93.3%	100%	80.0%	0%	**92.1%**	90.9%
Single-Unit Trucks	15	10	0	0	**25**	0	0	5	0	**5**	0	7	0	0	**7**	1	0	1	0	**2**	39
% Single-Unit Trucks	9.1%	5.8%	0%	0%	**7.1%**	0%	0%	6.5%	0%	**5.2%**	0%	3.3%	0%	0%	**3.2%**	6.7%	0%	10.0%	0%	**5.3%**	5.5%
Articulated Trucks	5	5	0	0	**10**	0	0	4	0	**4**	0	6	0	0	**6**	0	0	0	0	**0**	20
% Articulated Trucks	3.0%	2.9%	0%	0%	**2.9%**	0%	0%	5.2%	0%	**4.2%**	0%	2.8%	0%	0%	**2.7%**	0%	0%	0%	0%	**0%**	2.8%
Buses	0	2	1	0	**3**	0	0	0	0	**0**	0	1	0	0	**1**	0	0	1	0	**1**	5
% Buses	0%	1.2%	8.3%	0%	**0.9%**	0%	0%	0%	0%	**0%**	0%	0.5%	0%	0%	**0.5%**	0%	0%	10.0%	0%	**2.6%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

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



State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
PM Peak (2:45 PM - 3:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

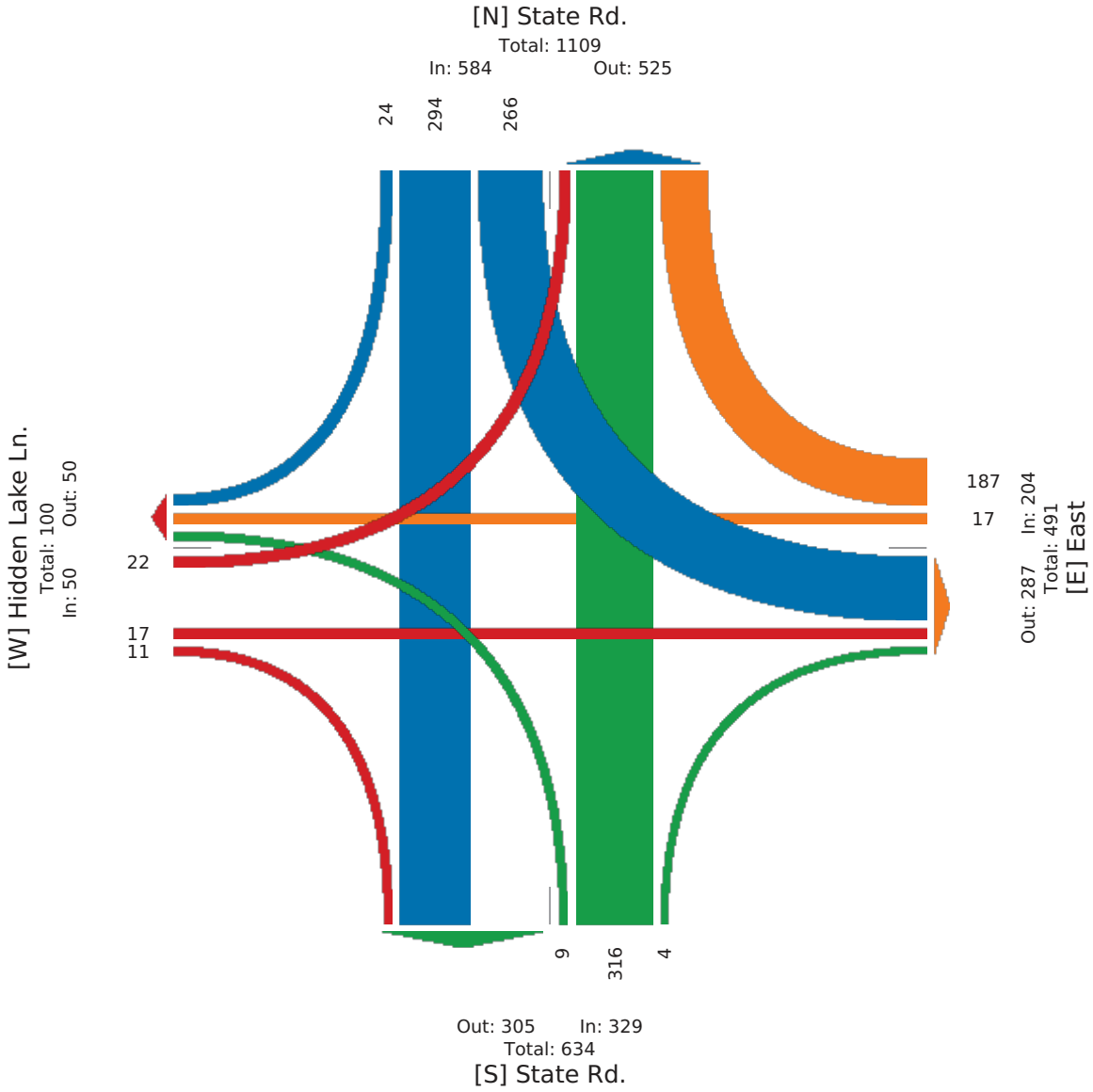
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd.					East					State Rd.					Hidden Lake Ln.					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-29 2:45PM	66	75	3	0	**144**	0	4	61	0	**65**	0	54	2	0	**56**	7	3	3	0	**13**	**278**
3:00PM	73	70	8	0	**151**	0	5	59	0	**64**	5	78	1	0	**84**	5	5	3	0	**13**	**312**
3:15PM	58	73	7	0	**138**	0	4	35	0	**39**	0	78	1	0	**79**	6	6	2	0	**14**	**270**
3:30PM	69	76	6	0	**151**	0	4	32	0	**36**	4	106	0	0	**110**	4	3	3	0	**10**	**307**
Total	266	294	24	0	**584**	0	17	187	0	**204**	9	316	4	0	**329**	22	17	11	0	**50**	**1167**
% Approach	45.5%	50.3%	4.1%	0%	**-**	0%	8.3%	91.7%	0%	**-**	2.7%	96.0%	1.2%	0%	**-**	44.0%	34.0%	22.0%	0%	**-**	-
% Total	22.8%	25.2%	2.1%	0%	**50.0%**	0%	1.5%	16.0%	0%	**17.5%**	0.8%	27.1%	0.3%	0%	**28.2%**	1.9%	1.5%	0.9%	0%	**4.3%**	-
PHF	0.911	0.967	0.750	-	**0.967**	-	0.850	0.766	-	**0.785**	0.450	0.745	0.500	-	**0.748**	0.786	0.708	0.917	-	**0.893**	0.935
Lights	253	275	23	0	**551**	0	17	185	0	**202**	9	295	4	0	**308**	22	17	10	0	**49**	1110
% Lights	95.1%	93.5%	95.8%	0%	**94.3%**	0%	100%	98.9%	0%	**99.0%**	100%	93.4%	100%	0%	**93.6%**	100%	100%	90.9%	0%	**98.0%**	95.1%
Single-Unit Trucks	9	5	0	0	**14**	0	0	0	0	**0**	0	9	0	0	**9**	0	0	0	0	**0**	23
% Single-Unit Trucks	3.4%	1.7%	0%	0%	**2.4%**	0%	0%	0%	0%	**0%**	0%	2.8%	0%	0%	**2.7%**	0%	0%	0%	0%	**0%**	2.0%
Articulated Trucks	3	11	0	0	**14**	0	0	1	0	**1**	0	8	0	0	**8**	0	0	0	0	**0**	23
% Articulated Trucks	1.1%	3.7%	0%	0%	**2.4%**	0%	0%	0.5%	0%	**0.5%**	0%	2.5%	0%	0%	**2.4%**	0%	0%	0%	0%	**0%**	2.0%
Buses	1	3	1	0	**5**	0	0	1	0	**1**	0	4	0	0	**4**	0	0	1	0	**1**	11
% Buses	0.4%	1.0%	4.2%	0%	**0.9%**	0%	0%	0.5%	0%	**0.5%**	0%	1.3%	0%	0%	**1.2%**	0%	0%	9.1%	0%	**2.0%**	0.9%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Hidden Lake Ln. - TMC
Thu Apr 29, 2021
PM Peak (2:45 PM - 3:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 832008, Location: 41.204728, -81.495239

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



State Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

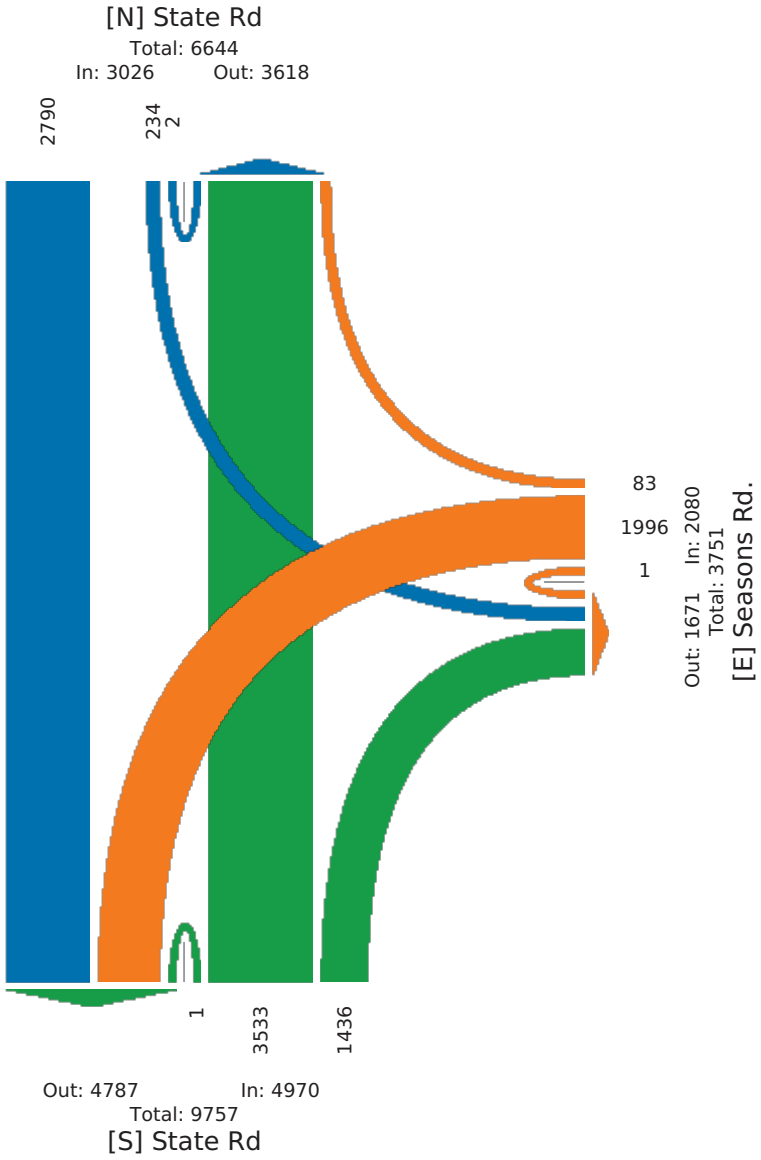
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd				Seasons Rd.				State Rd				
Direction	Southbound				Westbound				Northbound				
Time	L	T	U	**App**	L	R	U	**App**	T	R	U	**App**	**Int**
2021-04-13 7:00AM	3	43	0	**46**	39	0	0	**39**	74	27	0	**101**	**186**
7:15AM	11	46	0	**57**	35	1	0	**36**	105	36	0	**141**	**234**
7:30AM	42	42	0	**84**	22	1	0	**23**	125	51	0	**176**	**283**
7:45AM	41	60	0	**101**	30	1	0	**31**	104	34	0	**138**	**270**
Hourly Total	97	191	0	**288**	126	3	0	**129**	408	148	0	**556**	**973**
8:00AM	3	65	0	**68**	51	2	0	**53**	70	28	0	**98**	**219**
8:15AM	7	64	0	**71**	42	2	0	**44**	84	25	0	**109**	**224**
8:30AM	2	39	0	**41**	45	1	0	**46**	86	27	0	**113**	**200**
8:45AM	1	48	0	**49**	44	2	0	**46**	72	39	0	**111**	**206**
Hourly Total	13	216	0	**229**	182	7	0	**189**	312	119	0	**431**	**849**
9:00AM	1	47	0	**48**	34	4	0	**38**	58	15	0	**73**	**159**
9:15AM	2	50	0	**52**	27	0	0	**27**	64	22	0	**86**	**165**
9:30AM	2	44	0	**46**	33	0	0	**33**	79	31	0	**110**	**189**
9:45AM	1	55	0	**56**	30	0	0	**30**	50	21	0	**71**	**157**
Hourly Total	6	196	0	**202**	124	4	0	**128**	251	89	0	**340**	**670**
10:00AM	1	34	0	**35**	30	3	0	**33**	58	19	0	**77**	**145**
10:15AM	3	35	0	**38**	37	3	0	**40**	59	23	0	**82**	**160**
10:30AM	1	48	0	**49**	44	3	1	**48**	55	21	0	**76**	**173**
10:45AM	3	52	0	**55**	37	4	0	**41**	67	22	0	**89**	**185**
Hourly Total	8	169	0	**177**	148	13	1	**162**	239	85	0	**324**	**663**
11:00AM	2	49	0	**51**	45	3	0	**48**	48	24	0	**72**	**171**
11:15AM	3	34	0	**37**	28	3	0	**31**	62	13	0	**75**	**143**
11:30AM	5	49	0	**54**	39	0	0	**39**	63	25	0	**88**	**181**
11:45AM	4	44	0	**48**	42	1	0	**43**	78	11	0	**89**	**180**
Hourly Total	14	176	0	**190**	154	7	0	**161**	251	73	0	**324**	**675**
12:00PM	3	52	0	**55**	33	0	0	**33**	47	20	0	**67**	**155**
12:15PM	4	43	0	**47**	43	2	0	**45**	74	18	0	**92**	**184**
12:30PM	5	61	0	**66**	40	2	0	**42**	64	29	0	**93**	**201**
12:45PM	2	53	0	**55**	33	1	0	**34**	56	22	0	**78**	**167**
Hourly Total	14	209	0	**223**	149	5	0	**154**	241	89	0	**330**	**707**
1:00PM	2	68	0	**70**	28	0	0	**28**	58	19	0	**77**	**175**
1:15PM	0	50	0	**50**	39	0	0	**39**	48	28	0	**76**	**165**
1:30PM	3	47	0	**50**	61	1	0	**62**	62	25	0	**87**	**199**
1:45PM	1	63	0	**64**	36	1	0	**37**	65	30	0	**95**	**196**
Hourly Total	6	228	0	**234**	164	2	0	**166**	233	102	0	**335**	**735**
2:00PM	3	49	0	**52**	42	0	0	**42**	87	37	0	**124**	**218**
2:15PM	3	52	0	**55**	35	2	0	**37**	72	39	0	**111**	**203**
2:30PM	2	48	0	**50**	40	1	0	**41**	82	38	0	**120**	**211**
2:45PM	2	56	0	**58**	43	6	0	**49**	76	32	0	**108**	**215**
Hourly Total	10	205	0	**215**	160	9	0	**169**	317	146	0	**463**	**847**
3:00PM	4	85	0	**89**	48	3	0	**51**	55	24	0	**79**	**219**
3:15PM	1	84	0	**85**	56	1	0	**57**	92	40	0	**132**	**274**
3:30PM	6	92	0	**98**	48	2	0	**50**	87	63	0	**150**	**298**
3:45PM	2	75	1	**78**	59	1	0	**60**	87	38	1	**126**	**264**
Hourly Total	13	336	1	**350**	211	7	0	**218**	321	165	1	**487**	**1055**
4:00PM	3	71	0	**74**	58	2	0	**60**	106	50	0	**156**	**290**
4:15PM	3	72	0	**75**	54	2	0	**56**	87	48	0	**135**	**266**
4:30PM	8	77	0	**85**	48	1	0	**49**	99	44	0	**143**	**277**
4:45PM	5	69	0	**74**	55	0	0	**55**	79	38	0	**117**	**246**
Hourly Total	19	289	0	**308**	215	5	0	**220**	371	180	0	**551**	**1079**
5:00PM	2	80	0	**82**	58	2	0	**60**	95	33	0	**128**	**270**
5:15PM	3	92	0	**95**	54	2	0	**56**	89	45	0	**134**	**285**
5:30PM	10	75	0	**85**	52	4	0	**56**	78	35	0	**113**	**254**
5:45PM	2	99	0	**101**	49	3	0	**52**	65	23	0	**88**	**241**
Hourly Total	17	346	0	**363**	213	11	0	**224**	327	136	0	**463**	**1050**
6:00PM	5	63	0	**68**	36	2	0	**38**	80	34	0	**114**	**220**
6:15PM	4	73	0	**77**	43	4	0	**47**	58	21	0	**79**	**203**
6:30PM	6	38	1	**45**	37	2	0	**39**	55	19	0	**74**	**158**
6:45PM	2	55	0	**57**	34	2	0	**36**	69	30	0	**99**	**192**
Hourly Total	17	229	1	**247**	150	10	0	**160**	262	104	0	**366**	**773**
Total	234	2790	2	**3026**	1996	83	1	**2080**	3533	1436	1	**4970**	**10076**
% Approach	7.7%	92.2%	0.1%	**-**	96.0%	4.0%	0%	**-**	71.1%	28.9%	0%	**-**	-
% Total	2.3%	27.7%	0%	**30.0%**	19.8%	0.8%	0%	**20.6%**	35.1%	14.3%	0%	**49.3%**	-
Lights	219	2653	2	**2874**	1805	81	0	**1886**	3326	1337	1	**4664**	9424
% Lights	93.6%	95.1%	100%	**95.0%**	90.4%	97.6%	0%	**90.7%**	94.1%	93.1%	100%	**93.8%**	93.5%
Single-Unit Trucks	10	77	0	**87**	104	2	0	**106**	112	47	0	**159**	352
% Single-Unit Trucks	4.3%	2.8%	0%	**2.9%**	5.2%	2.4%	0%	**5.1%**	3.2%	3.3%	0%	**3.2%**	3.5%
Articulated Trucks	2	37	0	**39**	79	0	1	**80**	75	40	0	**115**	234
% Articulated Trucks	0.9%	1.3%	0%	**1.3%**	4.0%	0%	100%	**3.8%**	2.1%	2.8%	0%	**2.3%**	2.3%
Buses	3	23	0	**26**	8	0	0	**8**	20	12	0	**32**	66
% Buses	1.3%	0.8%	0%	**0.9%**	0.4%	0%	0%	**0.4%**	0.6%	0.8%	0%	**0.6%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

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



State Rd. & Seasons Rd - TMC

Tue Apr 13, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

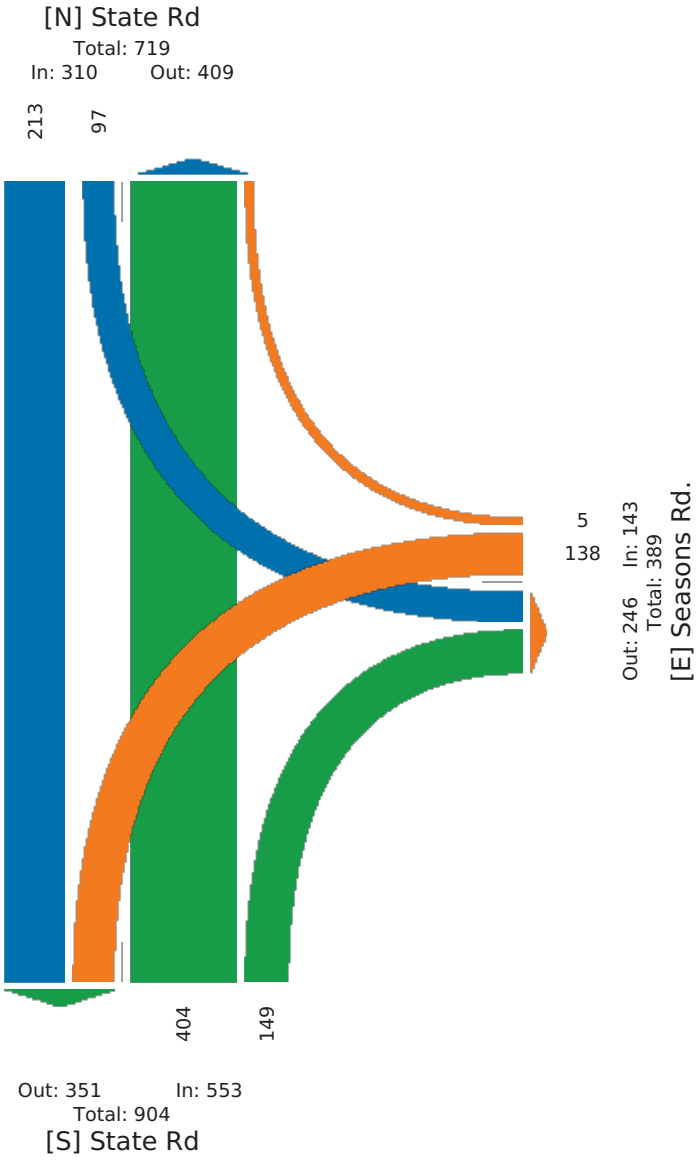
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd				Seasons Rd.				State Rd				
Direction	Southbound				Westbound				Northbound				
Time	L	T	U	**App**	L	R	U	**App**	T	R	U	**App**	**Int**
2021-04-13 7:15AM	11	46	0	**57**	35	1	0	**36**	105	36	0	**141**	**234**
7:30AM	42	42	0	**84**	22	1	0	**23**	125	51	0	**176**	**283**
7:45AM	41	60	0	**101**	30	1	0	**31**	104	34	0	**138**	**270**
8:00AM	3	65	0	**68**	51	2	0	**53**	70	28	0	**98**	**219**
Total	97	213	0	**310**	138	5	0	**143**	404	149	0	**553**	**1006**
% Approach	31.3%	68.7%	0%	**-**	96.5%	3.5%	0%	**-**	73.1%	26.9%	0%	**-**	-
% Total	9.6%	21.2%	0%	**30.8%**	13.7%	0.5%	0%	**14.2%**	40.2%	14.8%	0%	**55.0%**	-
PHF	0.577	0.819	-	**0.767**	0.676	0.625	-	**0.675**	0.808	0.730	-	**0.786**	0.889
Lights	93	206	0	**299**	129	5	0	**134**	388	140	0	**528**	961
% Lights	95.9%	96.7%	0%	**96.5%**	93.5%	100%	0%	**93.7%**	96.0%	94.0%	0%	**95.5%**	95.5%
Single-Unit Trucks	0	4	0	**4**	5	0	0	**5**	10	5	0	**15**	24
% Single-Unit Trucks	0%	1.9%	0%	**1.3%**	3.6%	0%	0%	**3.5%**	2.5%	3.4%	0%	**2.7%**	2.4%
Articulated Trucks	1	2	0	**3**	4	0	0	**4**	6	2	0	**8**	15
% Articulated Trucks	1.0%	0.9%	0%	**1.0%**	2.9%	0%	0%	**2.8%**	1.5%	1.3%	0%	**1.4%**	1.5%
Buses	3	1	0	**4**	0	0	0	**0**	0	2	0	**2**	6
% Buses	3.1%	0.5%	0%	**1.3%**	0%	0%	0%	**0%**	0%	1.3%	0%	**0.4%**	0.6%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

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



State Rd. & Seasons Rd - TMC

Tue Apr 13, 2021
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

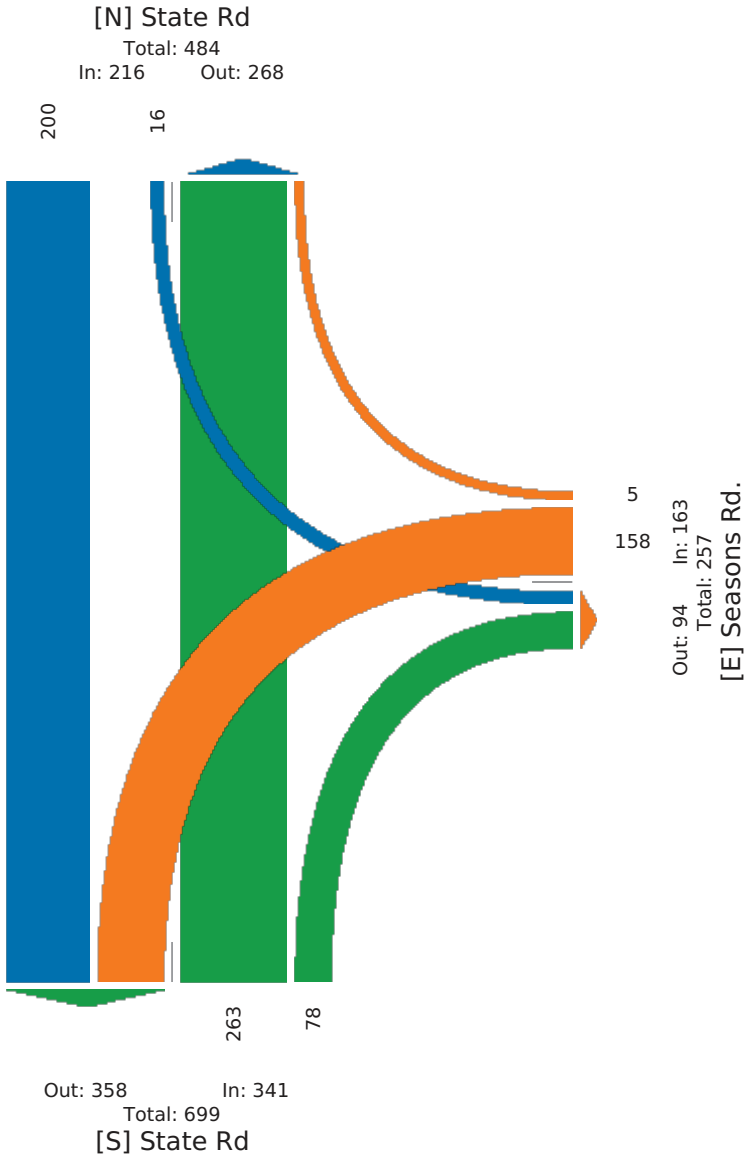
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd				Seasons Rd.				State Rd				
Direction	Southbound				Westbound				Northbound				
Time	L	T	U	**App**	L	R	U	**App**	T	R	U	**App**	**Int**
2021-04-13 11:45AM	4	44	0	**48**	42	1	0	**43**	78	11	0	**89**	**180**
12:00PM	3	52	0	**55**	33	0	0	**33**	47	20	0	**67**	**155**
12:15PM	4	43	0	**47**	43	2	0	**45**	74	18	0	**92**	**184**
12:30PM	5	61	0	**66**	40	2	0	**42**	64	29	0	**93**	**201**
Total	16	200	0	**216**	158	5	0	**163**	263	78	0	**341**	**720**
% Approach	7.4%	92.6%	0%	**-**	96.9%	3.1%	0%	**-**	77.1%	22.9%	0%	**-**	-
% Total	2.2%	27.8%	0%	**30.0%**	21.9%	0.7%	0%	**22.6%**	36.5%	10.8%	0%	**47.4%**	-
PHF	0.800	0.820	-	**0.818**	0.919	0.625	-	**0.906**	0.843	0.672	-	**0.917**	0.896
Lights	13	189	0	**202**	132	5	0	**137**	244	68	0	**312**	651
% Lights	81.3%	94.5%	0%	**93.5%**	83.5%	100%	0%	**84.0%**	92.8%	87.2%	0%	**91.5%**	90.4%
Single-Unit Trucks	2	5	0	**7**	16	0	0	**16**	10	4	0	**14**	37
% Single-Unit Trucks	12.5%	2.5%	0%	**3.2%**	10.1%	0%	0%	**9.8%**	3.8%	5.1%	0%	**4.1%**	5.1%
Articulated Trucks	1	3	0	**4**	10	0	0	**10**	8	5	0	**13**	27
% Articulated Trucks	6.3%	1.5%	0%	**1.9%**	6.3%	0%	0%	**6.1%**	3.0%	6.4%	0%	**3.8%**	3.8%
Buses	0	3	0	**3**	0	0	0	**0**	1	1	0	**2**	5
% Buses	0%	1.5%	0%	**1.4%**	0%	0%	0%	**0%**	0.4%	1.3%	0%	**0.6%**	0.7%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

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



State Rd. & Seasons Rd - TMC

Tue Apr 13, 2021
PM Peak (3:15 PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

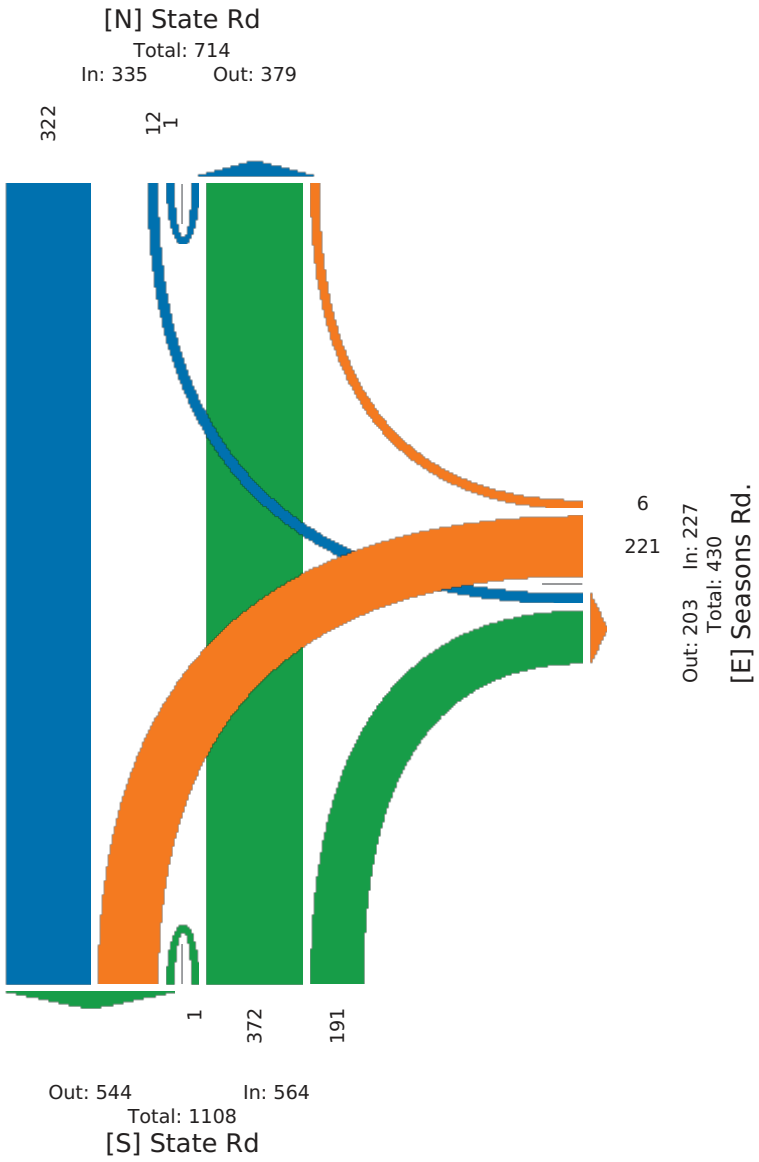
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	State Rd				Seasons Rd.				State Rd				
Direction	Southbound				Westbound				Northbound				
Time	L	T	U	**App**	L	R	U	**App**	T	R	U	**App**	**Int**
2021-04-13 3:15PM	1	84	0	**85**	56	1	0	**57**	92	40	0	**132**	**274**
3:30PM	6	92	0	**98**	48	2	0	**50**	87	63	0	**150**	**298**
3:45PM	2	75	1	**78**	59	1	0	**60**	87	38	1	**126**	**264**
4:00PM	3	71	0	**74**	58	2	0	**60**	106	50	0	**156**	**290**
Total	12	322	1	**335**	221	6	0	**227**	372	191	1	**564**	**1126**
% Approach	3.6%	96.1%	0.3%	**-**	97.4%	2.6%	0%	**-**	66.0%	33.9%	0.2%	**-**	-
% Total	1.1%	28.6%	0.1%	**29.8%**	19.6%	0.5%	0%	**20.2%**	33.0%	17.0%	0.1%	**50.1%**	-
PHF	0.500	0.875	0.250	**0.855**	0.936	0.750	-	**0.946**	0.877	0.758	0.250	**0.904**	0.945
Lights	12	305	1	**318**	206	6	0	**212**	355	185	1	**541**	1071
% Lights	100%	94.7%	100%	**94.9%**	93.2%	100%	0%	**93.4%**	95.4%	96.9%	100%	**95.9%**	95.1%
Single-Unit Trucks	0	8	0	**8**	7	0	0	**7**	6	2	0	**8**	23
% Single-Unit Trucks	0%	2.5%	0%	**2.4%**	3.2%	0%	0%	**3.1%**	1.6%	1.0%	0%	**1.4%**	2.0%
Articulated Trucks	0	3	0	**3**	6	0	0	**6**	6	2	0	**8**	17
% Articulated Trucks	0%	0.9%	0%	**0.9%**	2.7%	0%	0%	**2.6%**	1.6%	1.0%	0%	**1.4%**	1.5%
Buses	0	6	0	**6**	2	0	0	**2**	5	2	0	**7**	15
% Buses	0%	1.9%	0%	**1.8%**	0.9%	0%	0%	**0.9%**	1.3%	1.0%	0%	**1.2%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

State Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
PM Peak (3:15 PM - 4:15 PM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828150, Location: 41.202993, -81.495961

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



Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

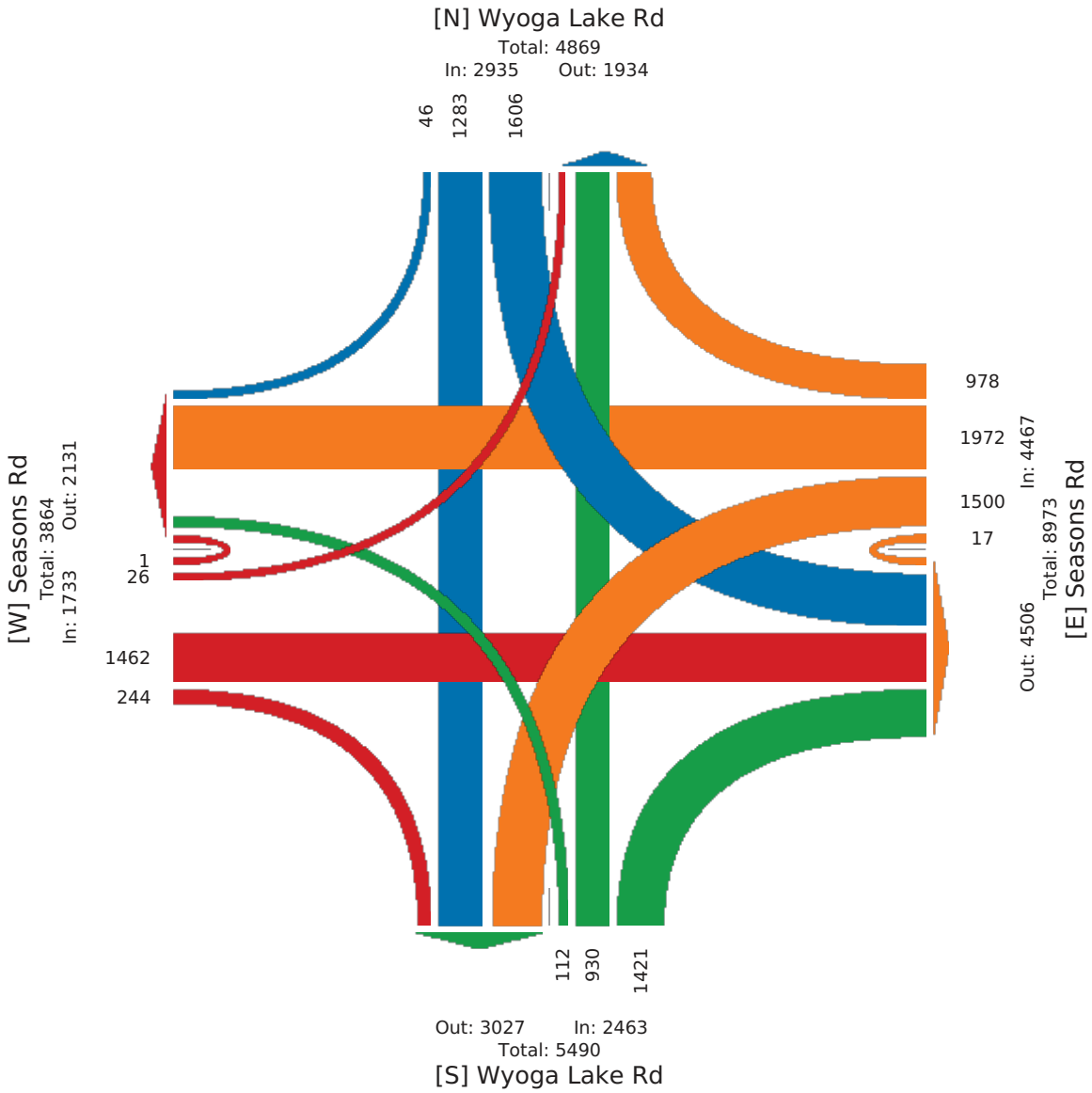
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	Wyoga Lake Rd					Seasons Rd					Wyoga Lake Rd					Seasons Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2021-04-13 7:00AM	31	13	1	0	**45**	36	37	15	0	**88**	2	13	13	0	**28**	1	28	0	0	**29**	**190**
7:15AM	28	70	1	0	**99**	69	34	7	0	**110**	0	25	56	0	**81**	1	33	17	0	**51**	**341**
7:30AM	26	75	0	0	**101**	68	15	8	0	**91**	7	30	84	0	**121**	1	40	47	0	**88**	**401**
7:45AM	28	70	0	0	**98**	61	24	19	0	**104**	7	45	71	0	**123**	1	51	41	0	**93**	**418**
Hourly Total	113	228	2	0	**343**	234	110	49	0	**393**	16	113	224	0	**353**	4	152	105	0	**261**	**1350**
8:00AM	30	23	0	0	**53**	22	55	25	0	**102**	3	21	25	0	**49**	0	30	2	1	**33**	**237**
8:15AM	29	22	0	0	**51**	25	35	18	0	**78**	4	11	10	0	**25**	1	34	4	0	**39**	**193**
8:30AM	37	17	0	0	**54**	28	50	30	0	**108**	0	15	12	0	**27**	1	24	3	0	**28**	**217**
8:45AM	31	15	0	0	**46**	22	41	37	0	**100**	1	11	9	0	**21**	0	41	2	0	**43**	**210**
Hourly Total	127	77	0	0	**204**	97	181	110	0	**388**	8	58	56	0	**122**	2	129	11	1	**143**	**857**
9:00AM	24	7	1	0	**32**	11	37	21	0	**69**	2	9	17	0	**28**	2	14	2	0	**18**	**147**
9:15AM	31	11	0	0	**42**	14	28	17	1	**60**	0	14	14	0	**28**	0	23	2	0	**25**	**155**
9:30AM	27	7	0	0	**34**	15	36	16	0	**67**	0	13	20	0	**33**	0	28	5	0	**33**	**167**
9:45AM	21	12	0	0	**33**	5	28	11	0	**44**	1	10	17	0	**28**	0	24	0	0	**24**	**129**
Hourly Total	103	37	1	0	**141**	45	129	65	1	**240**	3	46	68	0	**117**	2	89	9	0	**100**	**598**
10:00AM	26	21	0	0	**47**	11	34	27	0	**72**	1	4	17	0	**22**	0	17	3	0	**20**	**161**
10:15AM	26	12	0	0	**38**	17	35	20	0	**72**	2	11	12	0	**25**	1	22	1	0	**24**	**159**
10:30AM	29	10	0	0	**39**	16	45	12	0	**73**	4	10	12	0	**26**	0	19	4	0	**23**	**161**
10:45AM	25	17	0	0	**42**	9	36	29	0	**74**	2	14	12	0	**28**	0	22	1	0	**23**	**167**
Hourly Total	106	60	0	0	**166**	53	150	88	0	**291**	9	39	53	0	**101**	1	80	9	0	**90**	**648**
11:00AM	23	14	2	0	**39**	12	46	17	1	**76**	2	12	8	0	**22**	0	26	4	0	**30**	**167**
11:15AM	33	15	2	0	**50**	19	31	12	0	**62**	0	13	19	0	**32**	0	15	2	0	**17**	**161**
11:30AM	26	19	3	0	**48**	12	34	20	0	**66**	3	14	19	0	**36**	0	30	1	0	**31**	**181**
11:45AM	19	22	2	0	**43**	17	45	26	0	**88**	0	16	21	0	**37**	3	14	1	0	**18**	**186**
Hourly Total	101	70	9	0	**180**	60	156	75	1	**292**	5	55	67	0	**127**	3	85	8	0	**96**	**695**
12:00PM	44	20	1	0	**65**	12	31	13	1	**57**	1	10	18	0	**29**	1	18	4	0	**23**	**174**
12:15PM	26	20	0	0	**46**	14	41	25	0	**80**	4	18	40	0	**62**	1	18	3	0	**22**	**210**
12:30PM	39	14	1	0	**54**	17	36	22	0	**75**	1	14	25	0	**40**	0	31	4	0	**35**	**204**
12:45PM	35	19	0	0	**54**	19	35	11	1	**66**	0	15	20	0	**35**	0	23	1	0	**24**	**179**
Hourly Total	144	73	2	0	**219**	62	143	71	2	**278**	6	57	103	0	**166**	2	90	12	0	**104**	**767**
1:00PM	35	14	2	0	**51**	12	27	24	0	**63**	1	22	11	0	**34**	0	20	0	0	**20**	**168**
1:15PM	38	12	2	0	**52**	22	36	23	1	**82**	1	18	17	0	**36**	1	28	4	0	**33**	**203**
1:30PM	28	11	3	0	**42**	18	56	13	0	**87**	6	7	21	0	**34**	0	23	6	0	**29**	**192**
1:45PM	33	18	2	0	**53**	19	36	24	0	**79**	1	14	17	0	**32**	0	30	3	0	**33**	**197**
Hourly Total	134	55	9	0	**198**	71	155	84	1	**311**	9	61	66	0	**136**	1	101	13	0	**115**	**760**
2:00PM	35	25	3	0	**63**	21	44	21	0	**86**	0	25	34	0	**59**	0	35	6	0	**41**	**249**
2:15PM	22	33	1	0	**56**	46	34	22	2	**104**	3	19	17	0	**39**	0	37	6	0	**43**	**242**
2:30PM	38	49	1	0	**88**	63	40	19	0	**122**	4	23	60	0	**87**	0	30	9	0	**39**	**336**
2:45PM	36	32	0	0	**68**	45	42	18	3	**108**	5	57	74	0	**136**	0	32	5	0	**37**	**349**
Hourly Total	131	139	5	0	**275**	175	160	80	5	**420**	12	124	185	0	**321**	0	134	26	0	**160**	**1176**
3:00PM	53	22	0	0	**75**	35	45	26	0	**106**	10	53	65	0	**128**	1	27	0	0	**28**	**337**
3:15PM	43	27	0	0	**70**	37	53	33	0	**123**	3	20	55	0	**78**	0	39	3	0	**42**	**313**
3:30PM	49	19	2	0	**70**	28	49	18	0	**95**	1	26	35	0	**62**	1	63	3	0	**67**	**294**
3:45PM	37	36	0	0	**73**	48	57	18	0	**123**	1	30	43	0	**74**	0	37	4	0	**41**	**311**
Hourly Total	182	104	2	0	**288**	148	204	95	0	**447**	15	129	198	0	**342**	2	166	10	0	**178**	**1255**
4:00PM	48	22	1	0	**71**	55	60	16	2	**133**	2	16	36	0	**54**	1	48	4	0	**53**	**311**
4:15PM	47	35	0	0	**82**	46	54	23	0	**123**	5	16	29	0	**50**	0	46	1	0	**47**	**302**
4:30PM	34	38	0	0	**72**	59	44	18	0	**121**	2	16	29	0	**47**	0	52	3	0	**55**	**295**
4:45PM	39	50	0	0	**89**	52	55	16	1	**124**	2	21	29	0	**52**	0	40	5	0	**45**	**310**
Hourly Total	168	145	1	0	**314**	212	213	73	3	**501**	11	69	123	0	**203**	1	186	13	0	**200**	**1218**
5:00PM	52	47	5	0	**104**	46	62	14	1	**123**	3	21	26	0	**50**	1	32	5	0	**38**	**315**
5:15PM	32	58	3	0	**93**	51	54	24	1	**130**	4	25	40	0	**69**	1	43	7	0	**51**	**343**
5:30PM	42	53	2	0	**97**	54	51	23	1	**129**	2	14	33	0	**49**	2	40	5	0	**47**	**322**
5:45PM	43	35	3	0	**81**	66	52	24	0	**142**	1	17	17	0	**35**	0	23	3	0	**26**	**284**
Hourly Total	169	193	13	0	**375**	217	219	85	3	**524**	10	77	116	0	**203**	4	138	20	0	**162**	**1264**
6:00PM	29	23	1	0	**53**	27	39	35	1	**102**	2	15	33	0	**50**	3	33	2	0	**38**	**243**
6:15PM	37	32	0	0	**69**	35	43	31	0	**109**	0	24	26	0	**50**	0	26	1	0	**27**	**255**
6:30PM	40	30	0	0	**70**	31	39	19	0	**89**	4	31	56	0	**91**	0	25	0	0	**25**	**275**
6:45PM	22	17	1	0	**40**	33	31	18	0	**82**	2	32	47	0	**81**	1	28	5	0	**34**	**237**
Hourly Total	128	102	2	0	**232**	126	152	103	1	**382**	8	102	162	0	**272**	4	112	8	0	**124**	**1010**
Total	1606	1283	46	0	**2935**	1500	1972	978	17	**4467**	112	930	1421	0	**2463**	26	1462	244	1	**1733**	**11598**
% Approach	54.7%	43.7%	1.6%	0%	**-**	33.6%	44.1%	21.9%	0.4%	**-**	4.5%	37.8%	57.7%	0%	**-**	1.5%	84.4%	14.1%	0.1%	**-**	-
% Total	13.8%	11.1%	0.4%	0%	**25.3%**	12.9%	17.0%	8.4%	0.1%	**38.5%**	1.0%	8.0%	12.3%	0%	**21.2%**	0.2%	12.6%	2.1%	0%	**14.9%**	-
Lights	1424	1164	41	0	**2629**	1396	1768	878	8	**4050**	102	895	1336	0	**2333**	23	1360	223	1	**1607**	10619
% Lights	88.7%	90.7%	89.1%	0%	**89.6%**	93.1%	89.7%	89.8%	47.1%	**90.7%**	91.1%	96.2%	94.0%	0%	**94.7%**	88.5%	93.0%	91.4%	100%	**92.7%**	91.6%
Single-Unit Trucks	110	80	0	0	**190**	61	95	54	0	**210**	4	22	44	0	**70**	2	51	11	0	**64**	534
% Single-Unit Trucks	6.8%	6.2%	0%	0%	**6.5%**	4.1%	4.8%	5.5%	0%	**4.7%**	3.6%	2.4%	3.1%	0%	**2.8%**	7.7%	3.5%	4.5%	0%	**3.7%**	4.6%
Articulated Trucks	47	21	4	0	**72**	29	95	44	9	**177**	2	5	20	0	**27**	0	45	1	0	**46**	322
% Articulated Trucks	2.9%	1.6%	8.7%	0%	**2.5%**	1.9%	4.8%	4.5%	52.9%	**4.0%**	1.8%	0.5%	1.4%	0%	**1.1%**	0%	3.1%	0.4%	0%	**2.7%**	2.8%
Buses	25	18	1	0	**44**	14	14	2	0	**30**	4	8	21	0	**33**	1	6	9	0	**16**	123
% Buses	1.6%	1.4%	2.2%	0%	**1.5%**	0.9%	0.7%	0.2%	0%	**0.7%**	3.6%	0.9%	1.5%	0%	**1.3%**	3.8%	0.4%	3.7%	0%	**0.9%**	1.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Full Length (7 AM-7 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

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



Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

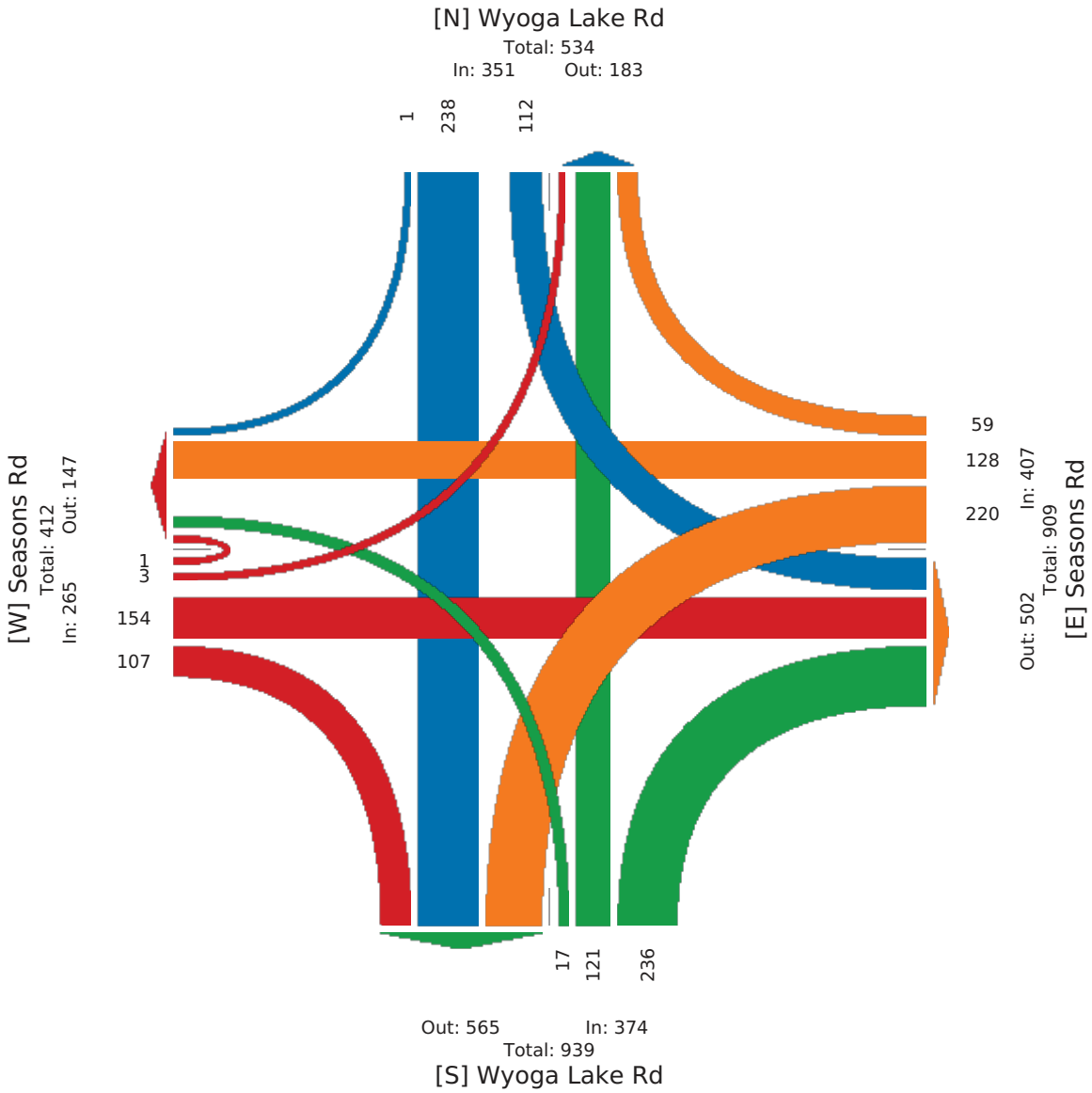
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	Wyoga Lake Rd					Seasons Rd					Wyoga Lake Rd					Seasons Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-13 7:15AM	28	70	1	0	**99**	69	34	7	0	**110**	0	25	56	0	**81**	1	33	17	0	**51**	**341**
7:30AM	26	75	0	0	**101**	68	15	8	0	**91**	7	30	84	0	**121**	1	40	47	0	**88**	**401**
7:45AM	28	70	0	0	**98**	61	24	19	0	**104**	7	45	71	0	**123**	1	51	41	0	**93**	**418**
8:00AM	30	23	0	0	**53**	22	55	25	0	**102**	3	21	25	0	**49**	0	30	2	1	**33**	**237**
Total	112	238	1	0	**351**	220	128	59	0	**407**	17	121	236	0	**374**	3	154	107	1	**265**	**1397**
% Approach	31.9%	67.8%	0.3%	0%	**-**	54.1%	31.4%	14.5%	0%	**-**	4.5%	32.4%	63.1%	0%	**-**	1.1%	58.1%	40.4%	0.4%	**-**	-
% Total	8.0%	17.0%	0.1%	0%	**25.1%**	15.7%	9.2%	4.2%	0%	**29.1%**	1.2%	8.7%	16.9%	0%	**26.8%**	0.2%	11.0%	7.7%	0.1%	**19.0%**	-
PHF	0.933	0.793	0.250	-	**0.869**	0.797	0.582	0.590	-	**0.925**	0.607	0.672	0.702	-	**0.760**	0.750	0.755	0.569	0.250	**0.712**	0.836
Lights	106	228	1	0	**335**	213	118	55	0	**386**	16	117	229	0	**362**	3	143	102	1	**249**	1332
% Lights	94.6%	95.8%	100%	0%	**95.4%**	96.8%	92.2%	93.2%	0%	**94.8%**	94.1%	96.7%	97.0%	0%	**96.8%**	100%	92.9%	95.3%	100%	**94.0%**	95.3%
Single-Unit Trucks	3	6	0	0	**9**	2	3	4	0	**9**	1	2	4	0	**7**	0	4	1	0	**5**	30
% Single-Unit Trucks	2.7%	2.5%	0%	0%	**2.6%**	0.9%	2.3%	6.8%	0%	**2.2%**	5.9%	1.7%	1.7%	0%	**1.9%**	0%	2.6%	0.9%	0%	**1.9%**	2.1%
Articulated Trucks	1	1	0	0	**2**	2	6	0	0	**8**	0	1	0	0	**1**	0	5	0	0	**5**	16
% Articulated Trucks	0.9%	0.4%	0%	0%	**0.6%**	0.9%	4.7%	0%	0%	**2.0%**	0%	0.8%	0%	0%	**0.3%**	0%	3.2%	0%	0%	**1.9%**	1.1%
Buses	2	3	0	0	**5**	3	1	0	0	**4**	0	1	3	0	**4**	0	2	4	0	**6**	19
% Buses	1.8%	1.3%	0%	0%	**1.4%**	1.4%	0.8%	0%	0%	**1.0%**	0%	0.8%	1.3%	0%	**1.1%**	0%	1.3%	3.7%	0%	**2.3%**	1.4%

*L: Left, R: Right, T: Thru, U: U-Turn

Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

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



Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

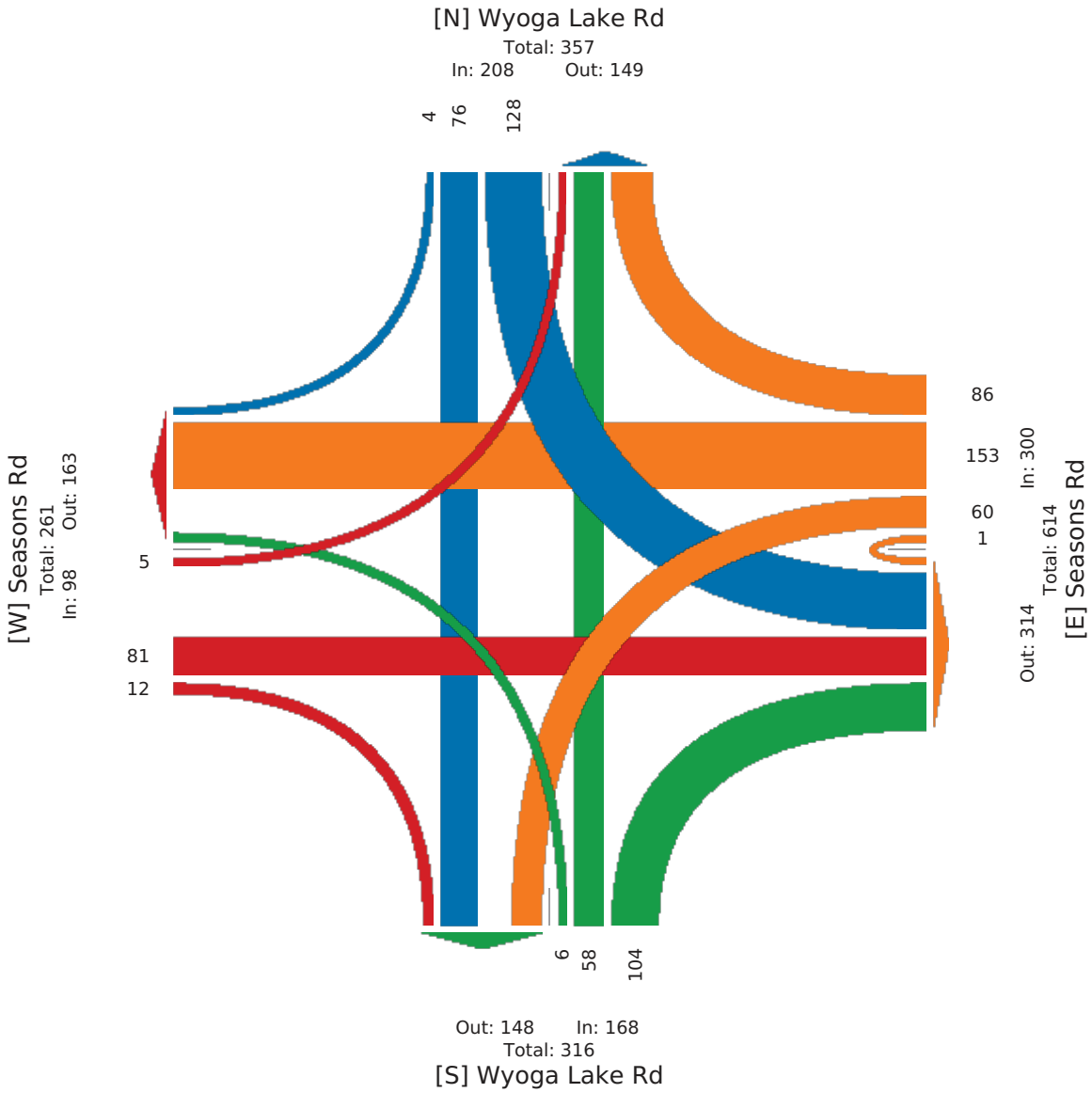
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	Wyoga Lake Rd					Seasons Rd					Wyoga Lake Rd					Seasons Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-13 11:45AM	19	22	2	0	**43**	17	45	26	0	**88**	0	16	21	0	**37**	3	14	1	0	**18**	**186**
12:00PM	44	20	1	0	**65**	12	31	13	1	**57**	1	10	18	0	**29**	1	18	4	0	**23**	**174**
12:15PM	26	20	0	0	**46**	14	41	25	0	**80**	4	18	40	0	**62**	1	18	3	0	**22**	**210**
12:30PM	39	14	1	0	**54**	17	36	22	0	**75**	1	14	25	0	**40**	0	31	4	0	**35**	**204**
Total	128	76	4	0	**208**	60	153	86	1	**300**	6	58	104	0	**168**	5	81	12	0	**98**	**774**
% Approach	61.5%	36.5%	1.9%	0%	**-**	20.0%	51.0%	28.7%	0.3%	**-**	3.6%	34.5%	61.9%	0%	**-**	5.1%	82.7%	12.2%	0%	**-**	-
% Total	16.5%	9.8%	0.5%	0%	**26.9%**	7.8%	19.8%	11.1%	0.1%	**38.8%**	0.8%	7.5%	13.4%	0%	**21.7%**	0.6%	10.5%	1.6%	0%	**12.7%**	-
PHF	0.727	0.864	0.500	-	**0.800**	0.882	0.850	0.827	0.250	**0.852**	0.375	0.806	0.650	-	**0.677**	0.417	0.653	0.750	-	**0.700**	0.921
Lights	107	65	3	0	**175**	51	131	80	0	**262**	5	52	97	0	**154**	5	69	11	0	**85**	676
% Lights	83.6%	85.5%	75.0%	0%	**84.1%**	85.0%	85.6%	93.0%	0%	**87.3%**	83.3%	89.7%	93.3%	0%	**91.7%**	100%	85.2%	91.7%	0%	**86.7%**	87.3%
Single-Unit Trucks	9	7	0	0	**16**	8	13	1	0	**22**	0	5	5	0	**10**	0	6	1	0	**7**	55
% Single-Unit Trucks	7.0%	9.2%	0%	0%	**7.7%**	13.3%	8.5%	1.2%	0%	**7.3%**	0%	8.6%	4.8%	0%	**6.0%**	0%	7.4%	8.3%	0%	**7.1%**	7.1%
Articulated Trucks	7	2	1	0	**10**	1	9	5	1	**16**	1	1	2	0	**4**	0	5	0	0	**5**	35
% Articulated Trucks	5.5%	2.6%	25.0%	0%	**4.8%**	1.7%	5.9%	5.8%	100%	**5.3%**	16.7%	1.7%	1.9%	0%	**2.4%**	0%	6.2%	0%	0%	**5.1%**	4.5%
Buses	5	2	0	0	**7**	0	0	0	0	**0**	0	0	0	0	**0**	0	1	0	0	**1**	8
% Buses	3.9%	2.6%	0%	0%	**3.4%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	1.2%	0%	0%	**1.0%**	1.0%

*L: Left, R: Right, T: Thru, U: U-Turn

Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

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



Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
PM Peak (2:30 PM - 3:30 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

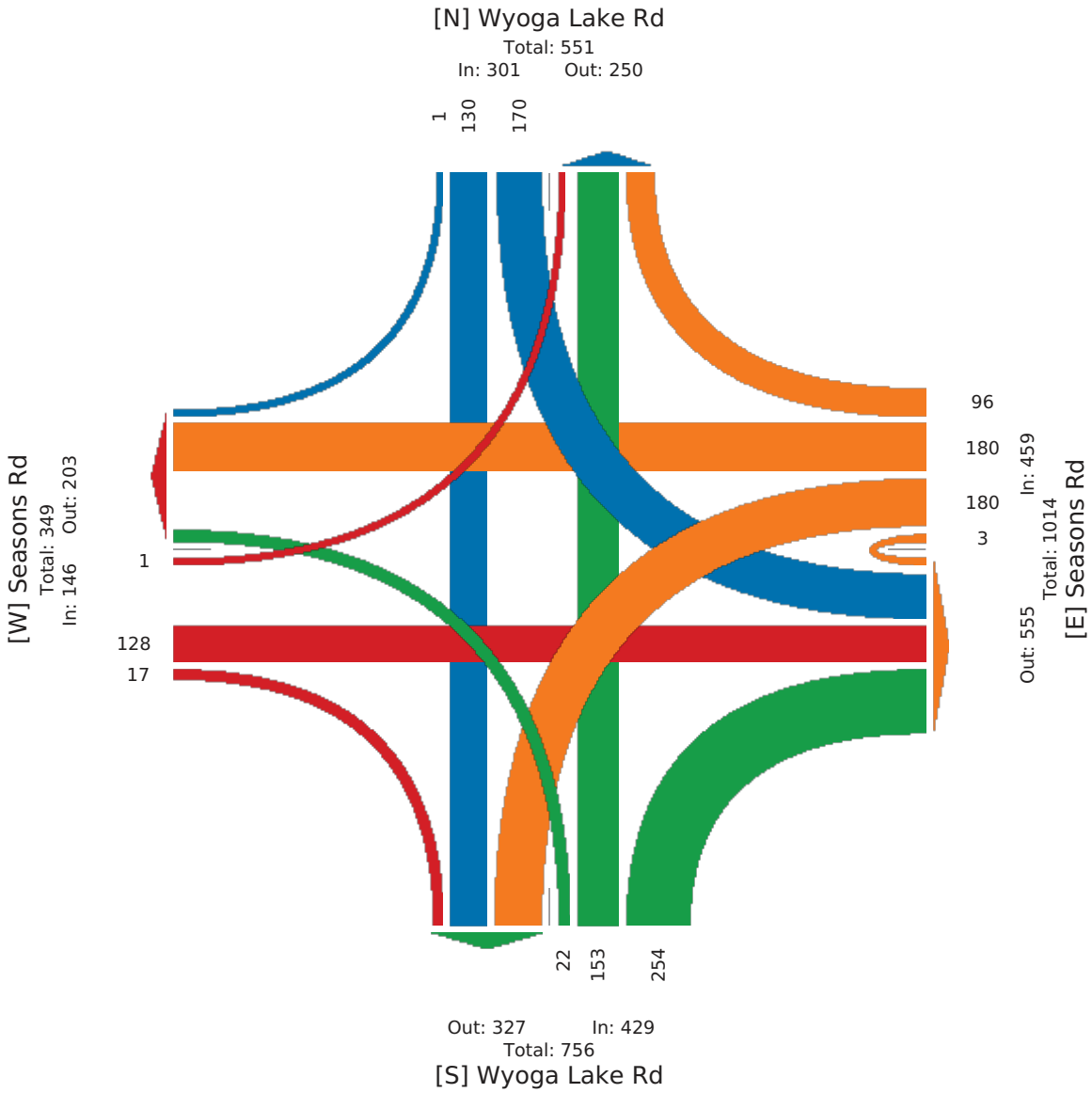
Provided by: Prime AE Group
540 White Pond Drive. Suite E, Akron, OH, 44320, US

Leg	Wyoga Lake Rd					Seasons Rd					Wyoga Lake Rd					Seasons Rd					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2021-04-13 2:30PM	38	49	1	0	**88**	63	40	19	0	**122**	4	23	60	0	**87**	0	30	9	0	**39**	**336**
2:45PM	36	32	0	0	**68**	45	42	18	3	**108**	5	57	74	0	**136**	0	32	5	0	**37**	**349**
3:00PM	53	22	0	0	**75**	35	45	26	0	**106**	10	53	65	0	**128**	1	27	0	0	**28**	**337**
3:15PM	43	27	0	0	**70**	37	53	33	0	**123**	3	20	55	0	**78**	0	39	3	0	**42**	**313**
Total	170	130	1	0	**301**	180	180	96	3	**459**	22	153	254	0	**429**	1	128	17	0	**146**	**1335**
% Approach	56.5%	43.2%	0.3%	0%	**-**	39.2%	39.2%	20.9%	0.7%	**-**	5.1%	35.7%	59.2%	0%	**-**	0.7%	87.7%	11.6%	0%	**-**	-
% Total	12.7%	9.7%	0.1%	0%	**22.5%**	13.5%	13.5%	7.2%	0.2%	**34.4%**	1.6%	11.5%	19.0%	0%	**32.1%**	0.1%	9.6%	1.3%	0%	**10.9%**	-
PHF	0.802	0.663	0.250	-	**0.855**	0.714	0.849	0.727	0.250	**0.933**	0.550	0.671	0.858	-	**0.789**	0.250	0.821	0.472	-	**0.869**	0.956
Lights	149	117	1	0	**267**	168	159	90	1	**418**	21	146	242	0	**409**	1	120	15	0	**136**	1230
% Lights	87.6%	90.0%	100%	0%	**88.7%**	93.3%	88.3%	93.8%	33.3%	**91.1%**	95.5%	95.4%	95.3%	0%	**95.3%**	100%	93.8%	88.2%	0%	**93.2%**	92.1%
Single-Unit Trucks	14	10	0	0	**24**	9	7	4	0	**20**	0	2	3	0	**5**	0	5	1	0	**6**	55
% Single-Unit Trucks	8.2%	7.7%	0%	0%	**8.0%**	5.0%	3.9%	4.2%	0%	**4.4%**	0%	1.3%	1.2%	0%	**1.2%**	0%	3.9%	5.9%	0%	**4.1%**	4.1%
Articulated Trucks	6	2	0	0	**8**	3	11	2	2	**18**	1	0	1	0	**2**	0	3	0	0	**3**	31
% Articulated Trucks	3.5%	1.5%	0%	0%	**2.7%**	1.7%	6.1%	2.1%	66.7%	**3.9%**	4.5%	0%	0.4%	0%	**0.5%**	0%	2.3%	0%	0%	**2.1%**	2.3%
Buses	1	1	0	0	**2**	0	3	0	0	**3**	0	5	8	0	**13**	0	0	1	0	**1**	19
% Buses	0.6%	0.8%	0%	0%	**0.7%**	0%	1.7%	0%	0%	**0.7%**	0%	3.3%	3.1%	0%	**3.0%**	0%	0%	5.9%	0%	**0.7%**	1.4%

*L: Left, R: Right, T: Thru, U: U-Turn

Wyoga Lake Rd. & Seasons Rd - TMC
Tue Apr 13, 2021
PM Peak (2:30 PM - 3:30 PM)
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses)
All Movements
ID: 828141, Location: 41.202972, -81.494572

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



Volume Adjustment Calculations

State Rd. & Wyoga Lake Rd. / Hidden Lake Ln.

			State Rd. *Northbound*				State Rd. *Southbound*				Hidden Lake Ln. *Eastbound*				Wyoga Lake Rd. *Westbound*			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
AM Peak	2021	Raw	1	380	2	383	307	320	14	641	37	12	29	78	0	8	165	173
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	1	380	2	383	307	320	14	641	37	12	29	78	0	8	165	173
	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	414	2	417	335	349	15	699	40	13	32	85	0	9	180	189
	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	414	2	417	335	349	15	699	40	13	32	85	0	9	180	189
	Opening Year	Rounded	0	410	0	410	340	350	20	710	40	10	30	80	0	10	180	190
	2041	Total	1	456	2	459	368	384	17	769	44	14	35	94	0	10	198	207
	Design Year	Rounded	10	460	10	480	370	390	20	780	40	10	40	90	0	10	200	210
School Peak	2021	Raw	7	291	5	303	296	284	20	600	22	19	12	53	0	15	192	207
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	7	291	5	303	296	284	20	600	22	19	12	53	0	15	192	207
	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	317	5	330	323	310	22	654	24	21	13	58	0	16	209	226
	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	317	5	330	323	310	22	654	24	21	13	58	0	16	209	226
	Opening Year	Rounded	10	320	10	340	320	310	20	650	30	20	20	70	0	20	210	230
	2041	Total	8	349	6	363	355	341	24	719	26	23	14	64	0	18	230	248
	Design Year	Rounded	10	350	10	370	360	340	20	720	30	20	10	60	0	20	230	250
PM Peak	2021	Raw	11	320	3	334	273	343	35	651	18	10	12	40	0	24	87	111
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	11	320	3	334	273	343	35	651	18	10	12	40	0	24	87	111
	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	12	349	3	364	298	374	38	710	20	11	13	44	0	26	95	121
	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	12	349	3	364	298	374	38	710	20	11	13	44	0	26	95	121
	Opening Year	Rounded	10	350	0	360	300	370	40	710	20	10	20	50	0	30	100	130
	2041	Total	13	384	4	400	327	411	42	781	22	12	14	48	0	29	104	133
	Design Year	Rounded	10	380	10	400	330	410	40	780	20	10	10	40	0	30	100	130

Volume Adjustment Calculations

State Rd. & Seasons Rd.

			State Rd. Northbound				State Rd. Southbound				Eastbound				Seasons Rd. Westbound			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
AM Peak	2021	Raw	0	404	149	553	97	213	0	310	0	0	0	0	138	0	5	143
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	0	404	149	553	97	213	0	310	0	0	0	0	138	0	5	143
	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	452	167	619	109	239	0	347	0	0	0	0	155	0	6	160
	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	452	167	619	109	239	0	347	0	0	0	0	155	0	6	160
	Opening Year	Rounded	0	450	170	620	110	240	0	350	0	0	0	0	160	0	10	170
	2041	Total	0	498	184	681	120	262	0	382	0	0	0	0	170	0	6	176
	Design Year	Rounded	0	500	180	680	120	260	0	380	0	0	0	0	170	0	10	180
School Peak	2021	Raw	0	305	134	439	9	273	0	282	0	0	0	0	187	0	11	198
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	0	305	134	439	9	273	0	282	0	0	0	0	187	0	11	198
	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	342	150	492	10	306	0	316	0	0	0	0	209	0	12	222
	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	150	492	10	306	0	316	0	0	0	0	209	0	12	222
	Opening Year	Rounded	0	340	150	490	10	310	0	320	0	0	0	0	210	0	10	220
	2041	Total	0	376	165	541	11	336	0	347	0	0	0	0	230	0	14	244
	Design Year	Rounded	0	380	170	550	10	340	0	350	0	0	0	0	230	0	10	240
PM Peak	2021	Raw	0	341	151	492	20	316	0	336	0	0	0	0	219	0	8	227
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	0	341	151	492	20	316	0	336	0	0	0	0	219	0	8	227
	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	382	169	551	22	354	0	376	0	0	0	0	245	0	9	254
	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	382	169	551	22	354	0	376	0	0	0	0	245	0	9	254
	Opening Year	Rounded	0	380	170	550	20	350	0	370	0	0	0	0	250	0	10	260
	2041	Total	0	420	186	606	25	389	0	414	0	0	0	0	270	0	10	280
	Design Year	Rounded	0	420	190	610	30	390	0	420	0	0	0	0	270	0	10	280

Volume Adjustment Calculations

State Rd. & Boulder Blvd.

			State Rd. Northbound				State Rd. Southbound				Boulder Blvd. Eastbound				Westbound			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
AM Peak	2021	Raw	4	352	0	356	0	297	9	306	24	0	4	28	0	0	0	0
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	4	352	0	356	0	297	9	306	24	0	4	28	0	0	0	0
	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	394	0	399	0	333	10	343	27	0	4	31	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	394	0	399	0	333	10	343	27	0	4	31	0	0	0	0
	Opening Year	Rounded	0	390	0	390	0	330	10	340	30	0	0	30	0	0	0	0
	2041	Total	5	434	0	439	0	366	11	377	30	0	5	34	0	0	0	0
	Design Year	Rounded	10	430	0	440	0	370	10	380	30	0	10	40	0	0	0	0
School Peak	2021	Raw	3	481	0	484	0	449	26	475	13	0	7	20	0	0	0	0
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	3	481	0	484	0	449	26	475	13	0	7	20	0	0	0	0
	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	3	539	0	542	0	503	29	532	15	0	8	22	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	3	539	0	542	0	503	29	532	15	0	8	22	0	0	0	0
	Opening Year	Rounded	0	540	0	540	0	500	30	530	20	0	10	30	0	0	0	0
	2041	Total	4	593	0	596	0	553	32	585	16	0	9	25	0	0	0	0
	Design Year	Rounded	10	590	0	600	0	550	30	580	20	0	10	30	0	0	0	0
PM Peak	2021	Raw	6	296	0	302	0	364	17	381	18	0	7	25	0	0	0	0
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	6	296	0	302	0	364	17	381	18	0	7	25	0	0	0	0
	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	332	0	338	0	408	19	427	20	0	8	28	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	332	0	338	0	408	19	427	20	0	8	28	0	0	0	0
	Opening Year	Rounded	10	330	0	340	0	410	20	430	30	0	10	40	0	0	0	0
	2041	Total	7	365	0	372	0	448	21	469	22	0	9	31	0	0	0	0
	Design Year	Rounded	10	370	0	380	0	450	20	470	20	0	10	30	0	0	0	0

Volume Adjustment Calculations

Wyoga Lake Rd. & Seasons Rd.

			Wyoga Lake Rd. *Northbound*				Wyoga Lake Rd. *Southbound*				Seasons Rd. *Eastbound*				Seasons Rd. *Westbound*			
			Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
AM Peak	2021	Raw	17	121	236	374	112	238	1	351	4	154	107	265	190	98	59	347
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	17	121	236	374	112	238	1	351	4	154	107	265	190	98	59	347
	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	136	264	419	125	267	1	393	4	172	120	297	213	110	66	389
	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	136	264	419	125	267	1	393	4	172	120	297	213	110	66	389
	Opening Year	Rounded	20	140	260	420	130	270	0	400	0	170	120	290	210	110	70	390
	2041	Total	21	149	291	461	138	293	1	432	5	190	132	326	234	121	73	428
	Design Year	Rounded	20	150	290	460	140	290	10	440	10	190	130	330	230	120	70	420
School Peak	2021	Raw	22	153	254	429	170	130	1	301	1	128	17	146	150	150	96	396
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	22	153	254	429	170	130	1	301	1	128	17	146	150	150	96	396
	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	25	171	284	480	190	146	1	337	1	143	19	164	168	168	108	444
	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	25	171	284	480	190	146	1	337	1	143	19	164	168	168	108	444
	Opening Year	Rounded	20	170	280	470	190	150	10	350	10	140	20	170	170	170	110	450
	2041	Total	27	188	313	529	209	160	1	371	1	158	21	180	185	185	118	488
	Design Year	Rounded	30	190	310	530	210	160	10	380	10	160	20	190	190	190	120	500
PM Peak	2021	Raw	11	81	128	220	165	208	10	383	4	155	22	181	169	188	77	434
	Covid	Factor	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
	2021	Adjusted	11	81	128	220	165	208	10	383	4	155	22	181	169	188	77	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	12	91	143	246	185	233	11	429	4	174	25	203	189	211	86	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	12	91	143	246	185	233	11	429	4	174	25	203	189	211	86	486
	Opening Year	Rounded	10	90	140	240	190	230	10	430	10	170	30	210	190	210	90	490
	2041	Total	14	100	158	271	203	256	12	472	5	191	27	223	208	232	95	535
	Design Year	Rounded	10	100	160	270	200	260	10	470	10	190	30	230	210	230	100	540

APPENDIX E
EXISTING CONDITIONS CAPACITY ANALYSIS

Intersection	
Intersection Delay, s/veh	141.4
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	172	120	213	110	66	19	136	264	125	267	1
Future Vol, veh/h	4	172	120	213	110	66	19	136	264	125	267	1
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	205	143	254	131	79	23	162	314	149	318	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	67.6	152.1	166.3	159.9
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	1%	55%	32%
Vol Thru, %	32%	58%	28%	68%
Vol Right, %	63%	41%	17%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	419	296	389	393
LT Vol	19	4	213	125
Through Vol	136	172	110	267
RT Vol	264	120	66	1
Lane Flow Rate	499	352	463	468
Geometry Grp	1	1	1	1
Degree of Util (X)	1.254	0.917	1.212	1.232
Departure Headway (Hd)	10.433	11.602	10.862	10.948
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	354	317	338	337
Service Time	8.433	9.602	8.862	8.948
HCM Lane V/C Ratio	1.41	1.11	1.37	1.389
HCM Control Delay	166.3	67.6	152.1	159.9
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	19.3	8.8	17.4	18

Intersection	
Int Delay, s/veh	13.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	155	6	452	167	109	239
Future Vol, veh/h	155	6	452	167	109	239
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	7	502	186	121	266

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1103	595	0	0	688	0
Stage 1	595	-	-	-	-	-
Stage 2	508	-	-	-	-	-
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	504	-	-	906	-
Stage 1	551	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	197	504	-	-	906	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	509	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	85.2	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	202	906	-
HCM Lane V/C Ratio	-	-	0.886	0.134	-
HCM Control Delay (s)	-	-	85.2	9.6	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	6.9	0.5	-

Intersection	
Int Delay, s/veh	5

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	415	2	348	380	0	189
Future Vol, veh/h	415	2	348	380	0	189
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	3	3	1	1
Mvmt Flow	500	2	419	458	0	228

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	502	0	1797	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	1296	-
Critical Hdwy	-	-	4.13	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.227	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	1057	-	89	572
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	258	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1057	-	54	572
Mov Cap-2 Maneuver	-	-	-	-	54	-
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	156	-

Approach	NB	SB	NW
HCM Control Delay, s	0	5.1	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	572	1057	-
HCM Lane V/C Ratio	-	-	0.398	0.397	-
HCM Control Delay (s)	-	-	15.4	10.6	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	1.9	1.9	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	45	10	594	683	15
Future Vol, veh/h	40	45	10	594	683	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	47	53	12	699	804	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1536	411	822	0	-	0
Stage 1	813	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	117	591	805	-	-	-
Stage 1	397	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	114	591	805	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	387	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.1	0.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	805	-	114	591	-	-
HCM Lane V/C Ratio	0.015	-	0.413	0.09	-	-
HCM Control Delay (s)	9.5	0	57.2	11.7	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	1.7	0.3	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	4	4	394	333	10
Future Vol, veh/h	27	4	4	394	333	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	29	4	4	428	362	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	804	368	373	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	436	-	-	-	-	-
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	352	677	1185	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	351	677	1185	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	697	-	-	-	-	-
Stage 2	652	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1185	-	374	-	-
HCM Lane V/C Ratio	0.004	-	0.09	-	-
HCM Control Delay (s)	8	0	15.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	10	3	634	698	2
Future Vol, veh/h	9	10	3	634	698	2
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	10	11	3	689	759	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1455	760	761	0	-	0
Stage 1	760	-	-	-	-	-
Stage 2	695	-	-	-	-	-
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	143	406	851	-	-	-
Stage 1	462	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	406	851	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	495	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	216	-	-
HCM Lane V/C Ratio	0.004	-	0.096	-	-
HCM Control Delay (s)	9.2	0	23.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	199.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	190	130	230	120	70	20	150	290	140	290	10
Future Vol, veh/h	10	190	130	230	120	70	20	150	290	140	290	10
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	226	155	274	143	83	24	179	345	167	345	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	100.1	206.1	232.8	234.4
HCM LOS	F	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	3%	55%	32%
Vol Thru, %	33%	58%	29%	66%
Vol Right, %	63%	39%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	460	330	420	440
LT Vol	20	10	230	140
Through Vol	150	190	120	290
RT Vol	290	130	70	10
Lane Flow Rate	548	393	500	524
Geometry Grp	1	1	1	1
Degree of Util (X)	1.409	1.026	1.339	1.409
Departure Headway (Hd)	11.71	13.146	12.161	12.153
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	318	279	305	304
Service Time	9.71	11.146	10.161	10.153
HCM Lane V/C Ratio	1.723	1.409	1.639	1.724
HCM Control Delay	232.8	100.1	206.1	234.4
HCM Lane LOS	F	F	F	F
HCM 95th-tile Q	22.8	10.7	20	22.2

Intersection	
Int Delay, s/veh	27

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	170	10	500	180	120	260
Future Vol, veh/h	170	10	500	180	120	260
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	11	556	200	133	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1211	656	0	0	756	0
Stage 1	656	-	-	-	-	-
Stage 2	555	-	-	-	-	-
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	465	-	-	855	-
Stage 1	516	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 164	465	-	-	855	-
Mov Cap-2 Maneuver	~ 164	-	-	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	469	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	179	0	3.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	170	855	-
HCM Lane V/C Ratio	-	-	1.176	0.156	-
HCM Control Delay (s)	-	-	179	10	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	10.7	0.6	-

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

Intersection	
Int Delay, s/veh	5.5

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	470	10	380	430	0	210
Future Vol, veh/h	470	10	380	430	0	210
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	3	3	1	1
Mvmt Flow	566	12	458	518	0	253

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	578	0	2006	572
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	1434	-
Critical Hdwy	-	-	4.13	-	6.41	6.21
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.227	-	3.509	3.309
Pot Cap-1 Maneuver	-	-	991	-	66	522
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	221	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	36	522
Mov Cap-2 Maneuver	-	-	-	-	36	-
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	119	-

Approach	NB	SB	NW
HCM Control Delay, s	0	5.5	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	522	991	-
HCM Lane V/C Ratio	-	-	0.485	0.462	-
HCM Control Delay (s)	-	-	18.2	11.7	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	2.6	2.5	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	50	20	660	760	20
Future Vol, veh/h	40	50	20	660	760	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	47	59	24	776	894	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1730	459	918	0	-	0
Stage 1	906	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	88	550	741	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	83	550	741	-	-	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	336	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	48.7	0.3	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	741	-	83	550	-	-
HCM Lane V/C Ratio	0.032	-	0.567	0.107	-	-
HCM Control Delay (s)	10	0	94.3	12.3	-	-
HCM Lane LOS	B	A	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	2.5	0.4	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	10	10	450	370	10
Future Vol, veh/h	30	10	10	450	370	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	33	11	11	489	402	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	919	408	413	0	-	0
Stage 1	408	-	-	-	-	-
Stage 2	511	-	-	-	-	-
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	301	643	1146	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	643	1146	-	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	602	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1146	-	343	-	-
HCM Lane V/C Ratio	0.009	-	0.127	-	-
HCM Control Delay (s)	8.2	0	17	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	10	3	700	770	2
Future Vol, veh/h	9	10	3	700	770	2
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	10	11	3	761	837	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1605	838	839	0	-	0
Stage 1	838	-	-	-	-	-
Stage 2	767	-	-	-	-	-
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	116	366	796	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	458	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	366	796	-	-	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	458	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	796	-	180	-	-
HCM Lane V/C Ratio	0.004	-	0.115	-	-
HCM Control Delay (s)	9.5	0	27.6	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Intersection Delay, s/veh	61.5
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	143	19	168	168	108	25	171	284	190	146	1
Future Vol, veh/h	1	143	19	168	168	108	25	171	284	190	146	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	149	20	175	175	113	26	178	296	198	152	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19.2	70.4	83.6	38.8
HCM LOS	C	F	F	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	1%	38%	56%
Vol Thru, %	36%	88%	38%	43%
Vol Right, %	59%	12%	24%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	480	163	444	337
LT Vol	25	1	168	190
Through Vol	171	143	168	146
RT Vol	284	19	108	1
Lane Flow Rate	500	170	462	351
Geometry Grp	1	1	1	1
Degree of Util (X)	1.053	0.428	0.998	0.808
Departure Headway (Hd)	7.584	9.378	7.975	8.514
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	480	387	458	428
Service Time	5.584	7.378	5.975	6.514
HCM Lane V/C Ratio	1.042	0.439	1.009	0.82
HCM Control Delay	83.6	19.2	70.4	38.8
HCM Lane LOS	F	C	F	E
HCM 95th-tile Q	15.4	2.1	12.9	7.3

Intersection	
Int Delay, s/veh	11.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	209	12	342	150	10	306
Future Vol, veh/h	209	12	342	150	10	306
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	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	14	407	179	12	364

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	885	497	0	0	586	0
Stage 1	497	-	-	-	-	-
Stage 2	388	-	-	-	-	-
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	315	573	-	-	989	-
Stage 1	611	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	310	573	-	-	989	-
Mov Cap-2 Maneuver	310	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	53.1	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	318	989	-
HCM Lane V/C Ratio	-	-	0.827	0.012	-
HCM Control Delay (s)	-	-	53.1	8.7	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	7.1	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	325	5	343	323	0	226
Future Vol, veh/h	325	5	343	323	0	226
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	369	6	390	367	0	257

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	375	0	1519	372
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	1147	-
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	-	-	1183	-	131	674
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	303	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1183	-	88	674
Mov Cap-2 Maneuver	-	-	-	-	88	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	203	-

Approach	NB	SB	NW
HCM Control Delay, s	0	4.9	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	674	1183	-
HCM Lane V/C Ratio	-	-	0.381	0.329	-
HCM Control Delay (s)	-	-	13.6	9.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.8	1.5	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	34	25	526	632	22
Future Vol, veh/h	24	34	25	526	632	22
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	100	-	-	-	-
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	5	3	2
Mvmt Flow	26	37	27	572	687	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1325	356	711	0	-	0
Stage 1	699	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	159	641	886	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	152	641	886	-	-	-
Mov Cap-2 Maneuver	152	-	-	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	532	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	886	-	152	641	-	-
HCM Lane V/C Ratio	0.031	-	0.172	0.058	-	-
HCM Control Delay (s)	9.2	0	33.5	11	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	8	3	539	503	29
Future Vol, veh/h	15	8	3	539	503	29
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	16	9	3	586	547	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1155	563	579	0	-	0
Stage 1	563	-	-	-	-	-
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	218	526	995	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	526	995	-	-	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	995	-	273	-	-
HCM Lane V/C Ratio	0.003	-	0.092	-	-
HCM Control Delay (s)	8.6	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	550	654	0
Future Vol, veh/h	0	0	0	550	654	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	598	711	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1309	711	711	0	-	0
Stage 1	711	-	-	-	-	-
Stage 2	598	-	-	-	-	-
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	176	433	888	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	433	888	-	-	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	549	-	-	-	-	-

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)	888	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	102.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	160	20	190	190	120	30	190	310	210	160	10
Future Vol, veh/h	10	160	20	190	190	120	30	190	310	210	160	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	167	21	198	198	125	31	198	323	219	167	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	24.2	127.7	137.2	60.9
HCM LOS	C	F	F	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	5%	38%	55%
Vol Thru, %	36%	84%	38%	42%
Vol Right, %	58%	11%	24%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	530	190	500	380
LT Vol	30	10	190	210
Through Vol	190	160	190	160
RT Vol	310	20	120	10
Lane Flow Rate	552	198	521	396
Geometry Grp	1	1	1	1
Degree of Util (X)	1.199	0.513	1.17	0.926
Departure Headway (Hd)	8.449	10.58	8.711	9.487
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	436	342	422	384
Service Time	6.449	8.58	6.711	7.487
HCM Lane V/C Ratio	1.266	0.579	1.235	1.031
HCM Control Delay	137.2	24.2	127.7	60.9
HCM Lane LOS	F	C	F	F
HCM 95th-tile Q	20.1	2.8	18.6	9.9

Intersection	
Int Delay, s/veh	21.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	230	10	380	170	10	340
Future Vol, veh/h	230	10	380	170	10	340
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	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	274	12	452	202	12	405

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	982	553	0	0	654	0
Stage 1	553	-	-	-	-	-
Stage 2	429	-	-	-	-	-
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	533	-	-	933	-
Stage 1	576	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 271	533	-	-	933	-
Mov Cap-2 Maneuver	~ 271	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	646	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	103.1	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	277	933	-
HCM Lane V/C Ratio	-	-	1.031	0.013	-
HCM Control Delay (s)	-	-	103.1	8.9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	10.9	0	-

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

Intersection	
Int Delay, s/veh	5.6

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	360	10	380	350	0	250
Future Vol, veh/h	360	10	380	350	0	250
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	409	11	432	398	0	284

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	420	0	1677	415
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	1262	-
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	-	-	1139	-	105	637
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	266	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1139	-	65	637
Mov Cap-2 Maneuver	-	-	-	-	65	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	165	-

Approach	NB	SB	NW
HCM Control Delay, s	0	5.2	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	637	1139	-
HCM Lane V/C Ratio	-	-	0.446	0.379	-
HCM Control Delay (s)	-	-	15.1	10.1	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	2.3	1.8	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	30	30	580	700	20
Future Vol, veh/h	30	30	30	580	700	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	100	-	-	-	-
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	5	3	2
Mvmt Flow	33	33	33	630	761	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1468	392	783	0	-	0
Stage 1	772	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	129	608	833	-	-	-
Stage 1	417	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	121	608	833	-	-	-
Mov Cap-2 Maneuver	121	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	494	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	28.4	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	833	-	121	608	-	-
HCM Lane V/C Ratio	0.039	-	0.269	0.054	-	-
HCM Control Delay (s)	9.5	0	45.4	11.3	-	-
HCM Lane LOS	A	A	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	590	550	30
Future Vol, veh/h	20	10	10	590	550	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	11	11	641	598	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1278	615	631	0	-	0
Stage 1	615	-	-	-	-	-
Stage 2	663	-	-	-	-	-
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	491	951	-	-	-
Stage 1	539	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	491	951	-	-	-
Mov Cap-2 Maneuver	180	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	951	-	228	-	-
HCM Lane V/C Ratio	0.011	-	0.143	-	-
HCM Control Delay (s)	8.8	0	23.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	610	720	0
Future Vol, veh/h	0	0	0	610	720	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	663	783	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1446	783	783	0	-	0
Stage 1	783	-	-	-	-	-
Stage 2	663	-	-	-	-	-
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	835	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	145	394	835	-	-	-
Mov Cap-2 Maneuver	145	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	512	-	-	-	-	-

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)	835	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Intersection Delay, s/veh	58.2
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	174	25	189	211	86	12	91	143	185	233	11
Future Vol, veh/h	4	174	25	189	211	86	12	91	143	185	233	11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	185	27	201	224	91	13	97	152	197	248	12
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	20	89.8	21.7	61.4
HCM LOS	C	F	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	2%	39%	43%
Vol Thru, %	37%	86%	43%	54%
Vol Right, %	58%	12%	18%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	246	203	486	429
LT Vol	12	4	189	185
Through Vol	91	174	211	233
RT Vol	143	25	86	11
Lane Flow Rate	262	216	517	456
Geometry Grp	1	1	1	1
Degree of Util (X)	0.572	0.499	1.074	0.962
Departure Headway (Hd)	8.251	8.668	7.48	7.884
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	440	419	486	466
Service Time	6.251	6.668	5.545	5.884
HCM Lane V/C Ratio	0.595	0.516	1.064	0.979
HCM Control Delay	21.7	20	89.8	61.4
HCM Lane LOS	C	C	F	F
HCM 95th-tile Q	3.5	2.7	16.2	11.8

Intersection	
Int Delay, s/veh	16.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	245	9	382	169	22	354
Future Vol, veh/h	245	9	382	169	22	354
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	263	10	411	182	24	381

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	931	502	0	0	593	0
Stage 1	502	-	-	-	-	-
Stage 2	429	-	-	-	-	-
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	296	569	-	-	983	-
Stage 1	608	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	287	569	-	-	983	-
Mov Cap-2 Maneuver	287	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	76.3	0	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	292	983	-
HCM Lane V/C Ratio	-	-	0.935	0.024	-
HCM Control Delay (s)	-	-	76.3	8.8	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	9	0.1	-

Intersection	
Int Delay, s/veh	3.7

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	631	3	308	387	0	121
Future Vol, veh/h	631	3	308	387	0	121
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	1	1	2	1
Mvmt Flow	671	3	328	412	0	129

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	674	0	1741	673
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	1068	-
Critical Hdwy	-	-	4.11	-	6.42	6.21
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.309
Pot Cap-1 Maneuver	-	-	922	-	95	457
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	330	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	922	-	61	457
Mov Cap-2 Maneuver	-	-	-	-	61	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	213	-

Approach	NB	SB	NW
HCM Control Delay, s	0	4.9	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	457	922	-
HCM Lane V/C Ratio	-	-	0.282	0.355	-
HCM Control Delay (s)	-	-	15.9	11	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	1.1	1.6	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	24	38	444	671	38
Future Vol, veh/h	20	24	38	444	671	38
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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	97	86	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	26	41	458	780	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1341	411	821	0	-	0
Stage 1	801	-	-	-	-	-
Stage 2	540	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	155	591	806	-	-	-
Stage 1	403	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	591	806	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	376	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.9	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	806	-	144	591	-	-
HCM Lane V/C Ratio	0.051	-	0.151	0.044	-	-
HCM Control Delay (s)	9.7	0	34.4	11.4	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	8	7	332	408	19
Future Vol, veh/h	20	8	7	332	408	19
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	22	9	8	361	443	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	831	454	464	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	377	-	-	-	-	-
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	340	606	1097	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	337	606	1097	-	-	-
Mov Cap-2 Maneuver	337	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1097	-	386	-	-
HCM Lane V/C Ratio	0.007	-	0.079	-	-
HCM Control Delay (s)	8.3	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	10	464	703	9
Future Vol, veh/h	6	6	10	464	703	9
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	7	11	504	764	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1295	769	774	0	-	0
Stage 1	769	-	-	-	-	-
Stage 2	526	-	-	-	-	-
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	401	842	-	-	-
Stage 1	457	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	176	401	842	-	-	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	593	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	842	-	245	-	-
HCM Lane V/C Ratio	0.013	-	0.053	-	-
HCM Control Delay (s)	9.3	0	20.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	94
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	190	30	210	230	100	10	100	160	200	260	10
Future Vol, veh/h	10	190	30	210	230	100	10	100	160	200	260	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	202	32	223	245	106	11	106	170	213	277	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	25.3	150.8	27.8	100.5
HCM LOS	D	F	D	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	4%	39%	43%
Vol Thru, %	37%	83%	43%	55%
Vol Right, %	59%	13%	19%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	230	540	470
LT Vol	10	10	210	200
Through Vol	100	190	230	260
RT Vol	160	30	100	10
Lane Flow Rate	287	245	574	500
Geometry Grp	1	1	1	1
Degree of Util (X)	0.652	0.585	1.238	1.092
Departure Headway (Hd)	9.179	9.606	8.158	8.597
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	396	379	448	425
Service Time	7.179	7.606	6.158	6.597
HCM Lane V/C Ratio	0.725	0.646	1.281	1.176
HCM Control Delay	27.8	25.3	150.8	100.5
HCM Lane LOS	D	D	F	F
HCM 95th-tile Q	4.5	3.6	22.3	15.7

Intersection	
Int Delay, s/veh	35.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	270	10	420	190	30	390
Future Vol, veh/h	270	10	420	190	30	390
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	290	11	452	204	32	419

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1037	554	0	0	656	0
Stage 1	554	-	-	-	-	-
Stage 2	483	-	-	-	-	-
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	~ 256	532	-	-	931	-
Stage 1	575	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 244	532	-	-	931	-
Mov Cap-2 Maneuver	~ 244	-	-	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	592	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	166.9	0	0.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	249	931	-
HCM Lane V/C Ratio	-	-	1.209	0.035	-
HCM Control Delay (s)	-	-	166.9	9	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	14.4	0.1	-

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

Intersection	
Int Delay, s/veh	3.8

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Vol, veh/h	390	10	340	420	0	130
Future Vol, veh/h	390	10	340	420	0	130
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	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	1	1	2	1
Mvmt Flow	415	11	362	447	0	138

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	426	0	1592	421
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	1171	-
Critical Hdwy	-	-	4.11	-	6.42	6.21
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.209	-	3.518	3.309
Pot Cap-1 Maneuver	-	-	1139	-	118	635
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	295	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1139	-	80	635
Mov Cap-2 Maneuver	-	-	-	-	80	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	201	-

Approach	NB	SB	NW
HCM Control Delay, s	0	4.3	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	NWLn1	SBL	SBT
Capacity (veh/h)	-	-	635	1139	-
HCM Lane V/C Ratio	-	-	0.218	0.318	-
HCM Control Delay (s)	-	-	12.2	9.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	1.4	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	40	480	740	40
Future Vol, veh/h	20	20	40	480	740	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	97	86	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	22	43	495	860	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1463	452	903	0	-	0
Stage 1	882	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	130	556	751	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	556	751	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.6	0.8	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	751	-	120	556	-	-
HCM Lane V/C Ratio	0.058	-	0.181	0.039	-	-
HCM Control Delay (s)	10.1	0	41.5	11.7	-	-
HCM Lane LOS	B	A	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	370	450	20
Future Vol, veh/h	20	10	10	370	450	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	11	11	402	489	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	924	500	511	0	-	0
Stage 1	500	-	-	-	-	-
Stage 2	424	-	-	-	-	-
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	299	571	1054	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	295	571	1054	-	-	-
Mov Cap-2 Maneuver	295	-	-	-	-	-
Stage 1	601	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	352	-	-
HCM Lane V/C Ratio	0.01	-	0.093	-	-
HCM Control Delay (s)	8.5	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	10	500	709	9
Future Vol, veh/h	6	6	10	500	709	9
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	7	11	543	771	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1341	776	781	0	-	0
Stage 1	776	-	-	-	-	-
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	168	397	837	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	165	397	837	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	569	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	837	-	233	-	-
HCM Lane V/C Ratio	0.013	-	0.056	-	-
HCM Control Delay (s)	9.4	0	21.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX F
PINE RIDGE – TRIP GENERATION TABLES

Multifamily Housing (Low-Rise)
(220)

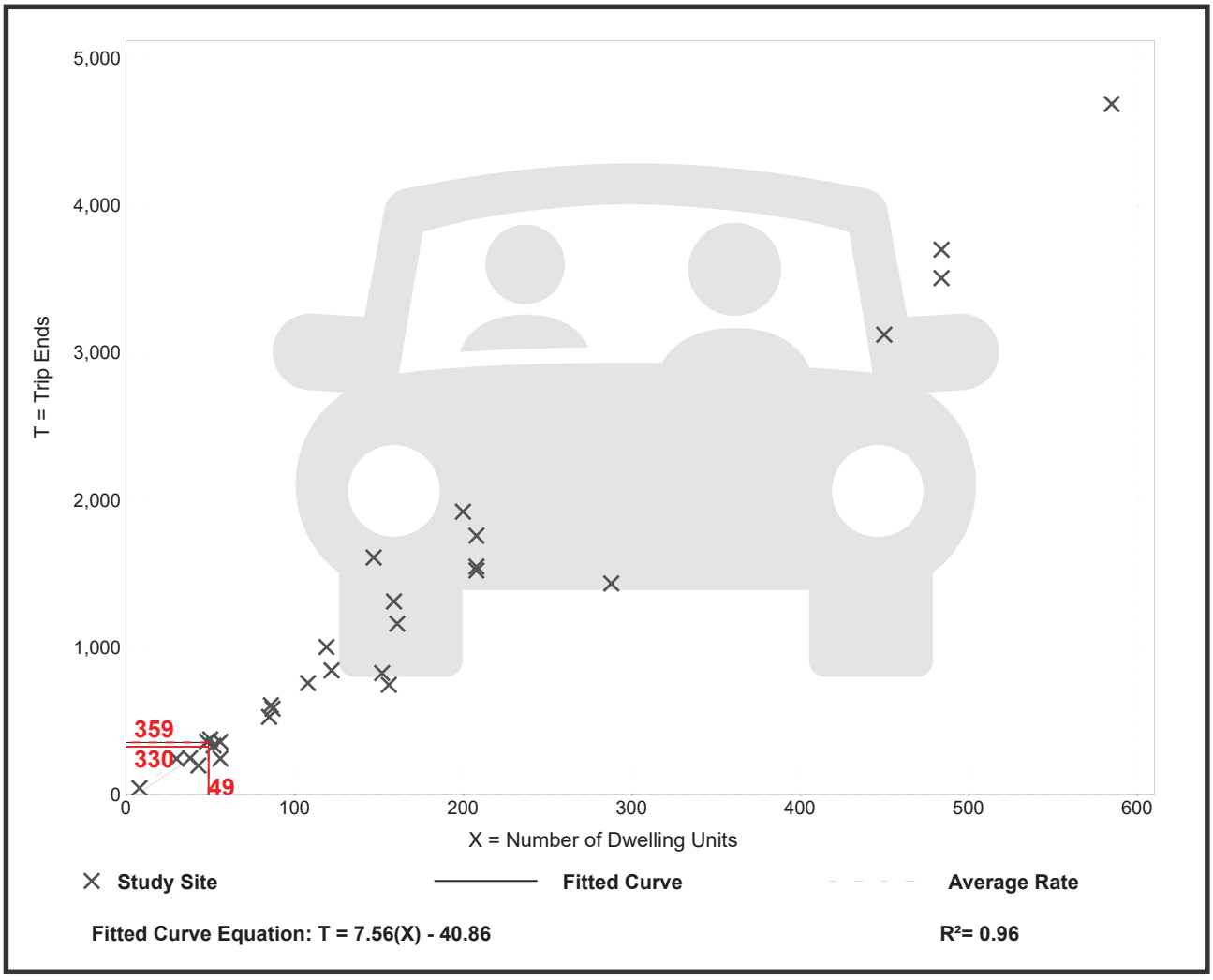
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



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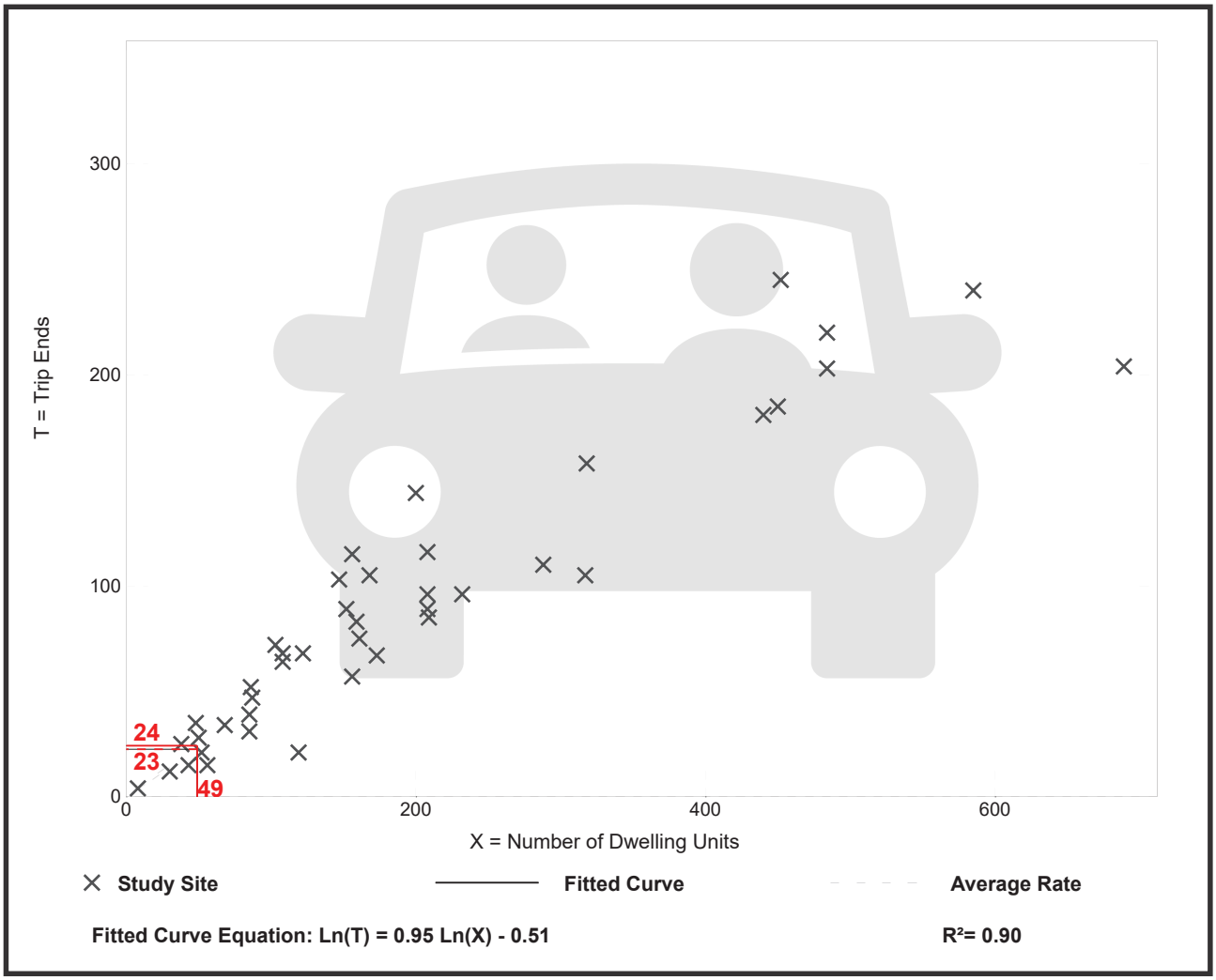
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 42
Avg. Num. of Dwelling Units: 199
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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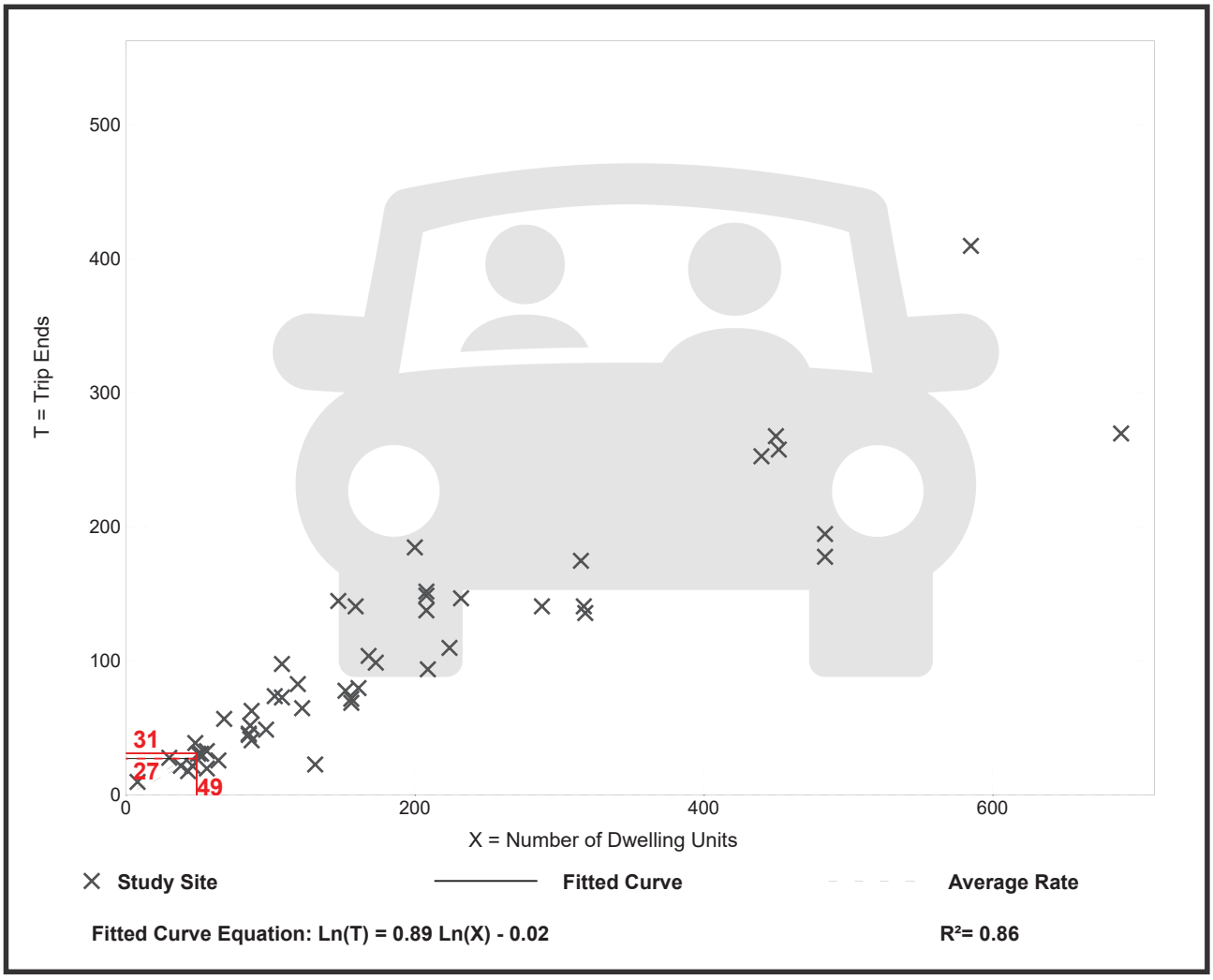
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. Num. of Dwelling Units: 187
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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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 AND TRIP GENERATION
Pine Ridge 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]								
Pine Ridge	49	Dwelling Units	220	330	5	19	19	12

NOTES:

[1] ITE Trip Generation Manual, 10th Edition

[2] Numbers do not account for trip capture

APPENDIX G
FUTURE CONDITIONS CAPACITY ANALYSIS

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	155	195	452	167	457	239
Future Volume (vph)	155	195	452	167	457	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.20	1.00
Satd. Flow (perm)	1770	1583	1863	1583	371	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	217	502	186	508	266
RTOR Reduction (vph)	0	111	0	86	0	0
Lane Group Flow (vph)	172	106	502	100	508	266
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	14.0	35.3	28.3	42.3	54.6	54.6
Effective Green, g (s)	14.0	35.3	28.3	42.3	54.6	54.6
Actuated g/C Ratio	0.18	0.45	0.36	0.54	0.69	0.69
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	315	811	670	952	636	1294
v/s Ratio Prot	c0.10	0.04	0.27	0.02	c0.22	0.14
v/s Ratio Perm		0.03		0.04	c0.34	
v/c Ratio	0.55	0.13	0.75	0.11	0.80	0.21
Uniform Delay, d1	29.4	12.7	22.0	8.9	14.1	4.3
Progression Factor	0.92	0.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1	4.6	0.0	6.9	0.1
Delay (s)	29.0	0.1	26.6	8.9	21.0	4.4
Level of Service	C	A	C	A	C	A
Approach Delay (s)	12.8		21.9			15.3
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	283	357	213	172	146	264
Future Volume (vph)	283	357	213	172	146	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.55	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1029	1863	1770	1583
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	337	425	254	205	174	314
RTOR Reduction (vph)	0	0	0	0	0	258
Lane Group Flow (vph)	337	425	254	205	174	56
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	54.6	68.6	54.6	54.6	14.0	14.0
Effective Green, g (s)	54.6	68.6	54.6	54.6	14.0	14.0
Actuated g/C Ratio	0.69	0.87	0.69	0.69	0.18	0.18
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1294	1583	714	1294	315	281
v/s Ratio Prot	0.18	0.05		0.11	c0.10	
v/s Ratio Perm		0.22	c0.25			0.04
v/c Ratio	0.26	0.27	0.36	0.16	0.55	0.20
Uniform Delay, d1	4.5	0.8	4.9	4.1	29.4	27.5
Progression Factor	0.50	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.3	0.1	2.1	0.3
Delay (s)	2.3	0.9	5.2	4.2	31.5	27.9
Level of Service	A	A	A	A	C	C
Approach Delay (s)	1.5			4.7	29.2	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	78.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	10	3	687	698	2
Future Vol, veh/h	9	10	3	687	698	2
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	10	11	3	747	759	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1513	760	761	0	-	0
Stage 1	760	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	133	409	851	-	-	-
Stage 1	465	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	409	851	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	469	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	205	-	-
HCM Lane V/C Ratio	0.004	-	0.101	-	-
HCM Control Delay (s)	9.2	-	24.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	45	10	647	683	15
Future Vol, veh/h	40	45	10	647	683	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	100	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	44	50	11	719	759	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1509	768	776	0	-	0
Stage 1	768	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	134	405	840	-	-	-
Stage 1	461	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	405	840	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	475	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.4	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	840	-	132	405	-	-
HCM Lane V/C Ratio	0.013	-	0.337	0.123	-	-
HCM Control Delay (s)	9.3	-	45.5	15.1	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0	-	1.4	0.4	-	-

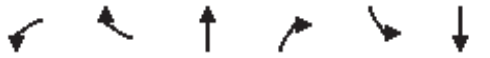
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	4	4	394	333	10
Future Vol, veh/h	27	4	4	394	333	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	92	92	92	92	92	92
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	29	4	4	428	362	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	804	368	373	0	-	0
Stage 1	368	-	-	-	-	-
Stage 2	436	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	355	682	1185	-	-	-
Stage 1	704	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	354	682	1185	-	-	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	656	-	-	-	-	-

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)	1185	-	491	-	-
HCM Lane V/C Ratio	0.004	-	0.069	-	-
HCM Control Delay (s)	8	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	220	500	180	500	260
Future Volume (vph)	170	220	500	180	500	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.18	1.00
Satd. Flow (perm)	1770	1583	1863	1583	342	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	232	526	189	526	274
RTOR Reduction (vph)	0	103	0	80	0	0
Lane Group Flow (vph)	179	129	526	109	526	274
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	13.9	36.7	30.1	44.0	57.9	57.9
Effective Green, g (s)	13.9	36.7	30.1	44.0	57.9	57.9
Actuated g/C Ratio	0.17	0.45	0.37	0.54	0.71	0.71
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	806	685	948	640	1318
v/s Ratio Prot	c0.10	0.04	0.28	0.02	c0.23	0.15
v/s Ratio Perm		0.04		0.05	c0.35	
v/c Ratio	0.60	0.16	0.77	0.12	0.82	0.21
Uniform Delay, d1	31.4	13.4	22.8	9.3	16.1	4.1
Progression Factor	0.91	0.06	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.1	5.2	0.1	8.4	0.1
Delay (s)	31.6	0.8	27.9	9.4	24.4	4.2
Level of Service	C	A	C	A	C	A
Approach Delay (s)	14.3		23.0			17.5
Approach LOS	B		C			B

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	314	386	230	187	163	290
Future Volume (vph)	314	386	230	187	163	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.56	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1038	1863	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	331	406	242	197	172	305
RTOR Reduction (vph)	0	0	0	0	0	253
Lane Group Flow (vph)	331	406	242	197	172	52
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	57.9	71.8	57.9	57.9	13.9	13.9
Effective Green, g (s)	57.9	71.8	57.9	57.9	13.9	13.9
Actuated g/C Ratio	0.71	0.88	0.71	0.71	0.17	0.17
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1318	1583	734	1318	300	268
v/s Ratio Prot	0.18	0.04		0.11	c0.10	
v/s Ratio Perm		0.21	c0.23			0.03
v/c Ratio	0.25	0.26	0.33	0.15	0.57	0.19
Uniform Delay, d1	4.2	0.8	4.6	3.9	31.2	29.1
Progression Factor	0.45	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.3	0.1	2.6	0.4
Delay (s)	2.0	0.9	4.8	4.0	33.9	29.5
Level of Service	A	A	A	A	C	C
Approach Delay (s)	1.4			4.4	31.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	10	3	760	770	2
Future Vol, veh/h	9	10	3	760	770	2
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	11	3	800	811	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1618	812	813	0	-	0
Stage 1	812	-	-	-	-	-
Stage 2	806	-	-	-	-	-
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	114	379	814	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	114	379	814	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	439	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.5	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	814	-	180	-	-
HCM Lane V/C Ratio	0.004	-	0.111	-	-
HCM Control Delay (s)	9.4	-	27.5	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	50	20	720	760	20
Future Vol, veh/h	40	50	20	720	760	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	100	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	2	3	3
Mvmt Flow	42	53	21	758	800	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1611	811	821	0	-	0
Stage 1	811	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	116	383	808	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	383	808	-	-	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	429	-	-	-	-	-
Stage 2	446	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	33.1	0.3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	808	-	113	383	-	-
HCM Lane V/C Ratio	0.026	-	0.373	0.137	-	-
HCM Control Delay (s)	9.6	-	54.7	15.9	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	0.5	-	-

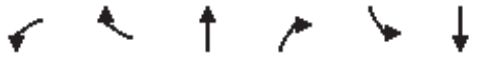
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	10	10	450	370	10
Future Vol, veh/h	30	10	10	450	370	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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	11	11	474	389	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	891	395	400	0	-	0
Stage 1	395	-	-	-	-	-
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	313	654	1159	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	310	654	1159	-	-	-
Mov Cap-2 Maneuver	434	-	-	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1159	-	474	-	-
HCM Lane V/C Ratio	0.009	-	0.089	-	-
HCM Control Delay (s)	8.1	-	13.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	209	238	342	150	353	306
Future Volume (vph)	209	238	342	150	353	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.25	1.00
Satd. Flow (perm)	1770	1583	1863	1583	474	1863
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	249	283	407	179	420	364
RTOR Reduction (vph)	0	129	0	83	0	0
Lane Group Flow (vph)	249	154	407	96	420	364
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	14.6	30.5	20.9	35.5	41.8	41.8
Effective Green, g (s)	14.6	30.5	20.9	35.5	41.8	41.8
Actuated g/C Ratio	0.22	0.46	0.31	0.53	0.63	0.63
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	389	846	586	965	608	1172
v/s Ratio Prot	c0.14	0.04	0.22	0.02	c0.17	0.20
v/s Ratio Perm		0.05		0.04	c0.27	
v/c Ratio	0.64	0.18	0.69	0.10	0.69	0.31
Uniform Delay, d1	23.5	10.6	20.0	7.6	8.3	5.7
Progression Factor	0.89	0.15	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	3.6	0.0	3.4	0.2
Delay (s)	24.5	1.7	23.5	7.6	11.7	5.8
Level of Service	C	A	C	A	B	A
Approach Delay (s)	12.4		18.7			9.0
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	337	168	168	255	164	284
Future Volume (vph)	337	168	168	255	164	284
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.54	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1002	1863	1770	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	351	175	175	266	171	296
RTOR Reduction (vph)	0	0	0	0	0	231
Lane Group Flow (vph)	351	175	175	266	171	65
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	41.8	56.4	41.8	41.8	14.6	14.6
Effective Green, g (s)	41.8	56.4	41.8	41.8	14.6	14.6
Actuated g/C Ratio	0.63	0.85	0.63	0.63	0.22	0.22
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1172	1583	630	1172	389	348
v/s Ratio Prot	c0.19	0.02		0.14	c0.10	
v/s Ratio Perm		0.09	0.17			0.04
v/c Ratio	0.30	0.11	0.28	0.23	0.44	0.19
Uniform Delay, d1	5.6	0.8	5.5	5.3	22.4	21.1
Progression Factor	0.54	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.2	0.1	0.8	0.3
Delay (s)	3.1	0.9	5.8	5.4	23.2	21.3
Level of Service	A	A	A	A	C	C
Approach Delay (s)	2.4			5.6	22.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	34	25	580	632	22
Future Vol, veh/h	24	34	25	580	632	22
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	100	50	-	-	-
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	5	3	2
Mvmt Flow	26	37	27	630	687	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1383	699	711	0	-	0
Stage 1	699	-	-	-	-	-
Stage 2	684	-	-	-	-	-
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	440	888	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	153	440	888	-	-	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.9	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	888	-	153	440	-	-
HCM Lane V/C Ratio	0.031	-	0.171	0.084	-	-
HCM Control Delay (s)	9.2	-	33.3	13.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.3	-	-

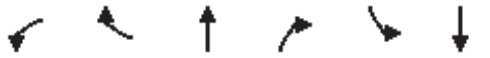
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	8	3	539	503	29
Future Vol, veh/h	15	8	3	539	503	29
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	9	3	586	547	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1155	563	579	0	-	0
Stage 1	563	-	-	-	-	-
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	218	526	995	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	526	995	-	-	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	995	-	400	-	-
HCM Lane V/C Ratio	0.003	-	0.063	-	-
HCM Control Delay (s)	8.6	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	230	260	380	170	390	340
Future Volume (vph)	230	260	380	170	390	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.26	1.00
Satd. Flow (perm)	1770	1583	1863	1583	486	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	242	274	400	179	411	358
RTOR Reduction (vph)	0	133	0	84	0	0
Lane Group Flow (vph)	242	141	400	95	411	358
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	14.4	30.2	20.6	35.0	41.4	41.4
Effective Green, g (s)	14.4	30.2	20.6	35.0	41.4	41.4
Actuated g/C Ratio	0.22	0.46	0.31	0.53	0.63	0.63
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	387	846	583	962	614	1172
v/s Ratio Prot	c0.14	0.04	0.21	0.02	c0.16	0.19
v/s Ratio Perm		0.05		0.04	c0.26	
v/c Ratio	0.63	0.17	0.69	0.10	0.67	0.31
Uniform Delay, d1	23.3	10.4	19.8	7.6	8.1	5.6
Progression Factor	0.90	0.05	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.1	0.1	3.3	0.0	2.8	0.1
Delay (s)	24.1	0.6	23.1	7.7	10.8	5.7
Level of Service	C	A	C	A	B	A
Approach Delay (s)	11.6		18.3			8.5
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	375	185	190	287	183	310
Future Volume (vph)	375	185	190	287	183	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.51	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	941	1863	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	395	195	200	302	193	326
RTOR Reduction (vph)	0	0	0	0	0	255
Lane Group Flow (vph)	395	195	200	302	193	71
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	41.4	55.8	41.4	41.4	14.4	14.4
Effective Green, g (s)	41.4	55.8	41.4	41.4	14.4	14.4
Actuated g/C Ratio	0.63	0.85	0.63	0.63	0.22	0.22
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1172	1583	592	1172	387	346
v/s Ratio Prot	0.21	0.03		0.16	c0.11	
v/s Ratio Perm		0.10	c0.21			0.05
v/c Ratio	0.34	0.12	0.34	0.26	0.50	0.21
Uniform Delay, d1	5.7	0.8	5.7	5.4	22.5	21.0
Progression Factor	0.54	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.3	0.1	1.0	0.3
Delay (s)	3.2	0.9	6.1	5.5	23.5	21.3
Level of Service	A	A	A	A	C	C
Approach Delay (s)	2.5			5.7	22.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	65.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	670	720	0
Future Vol, veh/h	0	0	0	670	720	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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	705	758	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1463	758	758	0	-	0
Stage 1	758	-	-	-	-	-
Stage 2	705	-	-	-	-	-
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	142	407	853	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	407	853	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	463	-	-	-	-	-
Stage 2	490	-	-	-	-	-

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)	853	-	-	-	-
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	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	30	30	640	700	20
Future Vol, veh/h	30	30	30	640	700	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	100	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	5	3	2
Mvmt Flow	32	32	32	674	737	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1486	748	758	0	-	0
Stage 1	748	-	-	-	-	-
Stage 2	738	-	-	-	-	-
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	137	412	853	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	473	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	132	412	853	-	-	-
Mov Cap-2 Maneuver	132	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	473	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.6	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	853	-	132	412	-	-
HCM Lane V/C Ratio	0.037	-	0.239	0.077	-	-
HCM Control Delay (s)	9.4	-	40.6	14.5	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	0.2	-	-

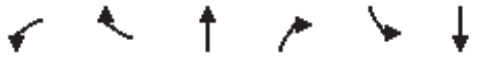
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	590	550	30
Future Vol, veh/h	20	10	10	590	550	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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	11	11	621	579	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1238	595	611	0	-	0
Stage 1	595	-	-	-	-	-
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	194	504	968	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	504	968	-	-	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	545	-	-	-	-	-
Stage 2	523	-	-	-	-	-

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)	968	-	374	-	-
HCM Lane V/C Ratio	0.011	-	0.084	-	-
HCM Control Delay (s)	8.8	-	15.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	245	130	382	169	330	354
Future Volume (vph)	245	130	382	169	330	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.24	1.00
Satd. Flow (perm)	1770	1583	1863	1583	444	1863
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	263	140	411	182	355	381
RTOR Reduction (vph)	0	80	0	85	0	0
Lane Group Flow (vph)	263	60	411	97	355	381
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	12.9	23.3	15.9	28.8	31.3	31.3
Effective Green, g (s)	12.9	23.3	15.9	28.8	31.3	31.3
Actuated g/C Ratio	0.24	0.43	0.29	0.53	0.58	0.58
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	421	826	546	987	510	1075
v/s Ratio Prot	c0.15	0.01	0.22	0.02	c0.13	0.20
v/s Ratio Perm		0.02		0.04	c0.27	
v/c Ratio	0.62	0.07	0.75	0.10	0.70	0.35
Uniform Delay, d1	18.5	9.1	17.4	6.3	7.9	6.1
Progression Factor	1.03	2.36	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.0	5.8	0.0	4.1	0.2
Delay (s)	21.9	21.5	23.2	6.3	12.0	6.3
Level of Service	C	C	C	A	B	A
Approach Delay (s)	21.8		18.0			9.1
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	310	197	189	270	74	143
Future Volume (vph)	310	197	189	270	74	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.56	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1041	1863	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	330	210	201	287	79	152
RTOR Reduction (vph)	0	0	0	0	0	116
Lane Group Flow (vph)	330	210	201	287	79	36
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	31.3	44.2	31.3	31.3	12.9	12.9
Effective Green, g (s)	31.3	44.2	31.3	31.3	12.9	12.9
Actuated g/C Ratio	0.58	0.82	0.58	0.58	0.24	0.24
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1075	1583	601	1075	421	376
v/s Ratio Prot	0.18	0.03		0.15	c0.04	
v/s Ratio Perm		0.10	c0.19			0.02
v/c Ratio	0.31	0.13	0.33	0.27	0.19	0.10
Uniform Delay, d1	5.9	1.0	6.0	5.7	16.5	16.1
Progression Factor	0.59	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.3	0.1	0.2	0.1
Delay (s)	3.6	1.1	6.3	5.9	16.7	16.2
Level of Service	A	A	A	A	B	B
Approach Delay (s)	2.6			6.0	16.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	10	532	709	9
Future Vol, veh/h	6	6	10	532	709	9
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	-	200	-	-	-
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	7	11	578	771	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1376	776	781	0	-	0
Stage 1	776	-	-	-	-	-
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	160	397	837	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	158	397	837	-	-	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.9	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	837	-	226	-	-
HCM Lane V/C Ratio	0.013	-	0.058	-	-
HCM Control Delay (s)	9.4	-	21.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	24	38	512	671	38
Future Vol, veh/h	20	24	38	512	671	38
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	100	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	97	86	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	26	41	528	780	41

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1411	801	821	0	-	0
Stage 1	801	-	-	-	-	-
Stage 2	610	-	-	-	-	-
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	152	384	808	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	144	384	808	-	-	-
Mov Cap-2 Maneuver	144	-	-	-	-	-
Stage 1	419	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.9	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	808	-	144	384	-	-
HCM Lane V/C Ratio	0.051	-	0.151	0.068	-	-
HCM Control Delay (s)	9.7	-	34.4	15.1	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0.2	-	-

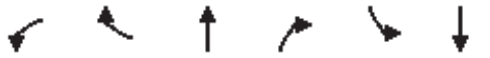
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	8	7	332	408	19
Future Vol, veh/h	20	8	7	332	408	19
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	9	8	361	443	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	831	454	464	0	-	0
Stage 1	454	-	-	-	-	-
Stage 2	377	-	-	-	-	-
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	340	606	1097	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	338	606	1097	-	-	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1097	-	492	-	-
HCM Lane V/C Ratio	0.007	-	0.062	-	-
HCM Control Delay (s)	8.3	-	12.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	270	140	420	190	370	390
Future Volume (vph)	270	140	420	190	370	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.21	1.00
Satd. Flow (perm)	1770	1583	1863	1583	386	1863
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	284	147	442	200	389	411
RTOR Reduction (vph)	0	83	0	74	0	0
Lane Group Flow (vph)	284	64	442	126	389	411
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	13.3	24.0	16.5	29.8	32.2	32.2
Effective Green, g (s)	13.3	24.0	16.5	29.8	32.2	32.2
Actuated g/C Ratio	0.24	0.43	0.30	0.54	0.58	0.58
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	424	827	553	992	490	1080
v/s Ratio Prot	c0.16	0.01	0.24	0.03	c0.15	0.22
v/s Ratio Perm		0.03		0.05	c0.31	
v/c Ratio	0.67	0.08	0.80	0.13	0.79	0.38
Uniform Delay, d1	19.1	9.2	18.0	6.4	8.8	6.3
Progression Factor	1.04	2.60	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	7.9	0.1	8.6	0.2
Delay (s)	23.8	24.1	25.9	6.4	17.4	6.5
Level of Service	C	C	C	A	B	A
Approach Delay (s)	23.9		19.8			11.8
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	340	220	210	293	77	160
Future Volume (vph)	340	220	210	293	77	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.53	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	994	1863	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	358	232	221	308	81	168
RTOR Reduction (vph)	0	0	0	0	0	128
Lane Group Flow (vph)	358	232	221	308	81	40
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	1 2	8		6	8	
Permitted Phases		1 2	6			8
Actuated Green, G (s)	32.2	45.5	32.2	32.2	13.3	13.3
Effective Green, g (s)	32.2	45.5	32.2	32.2	13.3	13.3
Actuated g/C Ratio	0.58	0.82	0.58	0.58	0.24	0.24
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1080	1583	576	1080	424	379
v/s Ratio Prot	0.19	c0.04		0.17	0.05	
v/s Ratio Perm		0.11	c0.22			0.03
v/c Ratio	0.33	0.15	0.38	0.29	0.19	0.11
Uniform Delay, d1	6.1	1.0	6.3	5.9	16.8	16.5
Progression Factor	0.56	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.4	0.1	0.2	0.1
Delay (s)	3.5	1.1	6.7	6.0	17.0	16.6
Level of Service	A	A	A	A	B	B
Approach Delay (s)	2.5			6.3	16.7	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	10	570	780	9
Future Vol, veh/h	6	6	10	570	780	9
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	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	6	11	600	821	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1448	826	830	0	-	0
Stage 1	826	-	-	-	-	-
Stage 2	622	-	-	-	-	-
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	372	802	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	143	372	802	-	-	-
Mov Cap-2 Maneuver	143	-	-	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.5	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	802	-	207	-	-
HCM Lane V/C Ratio	0.013	-	0.061	-	-
HCM Control Delay (s)	9.5	-	23.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	40	560	740	40
Future Vol, veh/h	20	20	40	560	740	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	100	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	21	42	589	779	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1473	800	821	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	673	-	-	-	-	-
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	140	385	808	-	-	-
Stage 1	442	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	133	385	808	-	-	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	419	-	-	-	-	-
Stage 2	507	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	808	-	133	385	-	-
HCM Lane V/C Ratio	0.052	-	0.158	0.055	-	-
HCM Control Delay (s)	9.7	-	37.1	14.9	-	-
HCM Lane LOS	A	-	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	10	10	370	450	20
Future Vol, veh/h	20	10	10	370	450	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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	11	11	389	474	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	896	485	495	0	-	0
Stage 1	485	-	-	-	-	-
Stage 2	411	-	-	-	-	-
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	582	1069	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	308	582	1069	-	-	-
Mov Cap-2 Maneuver	432	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1069	-	473	-	-
HCM Lane V/C Ratio	0.01	-	0.067	-	-
HCM Control Delay (s)	8.4	-	13.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

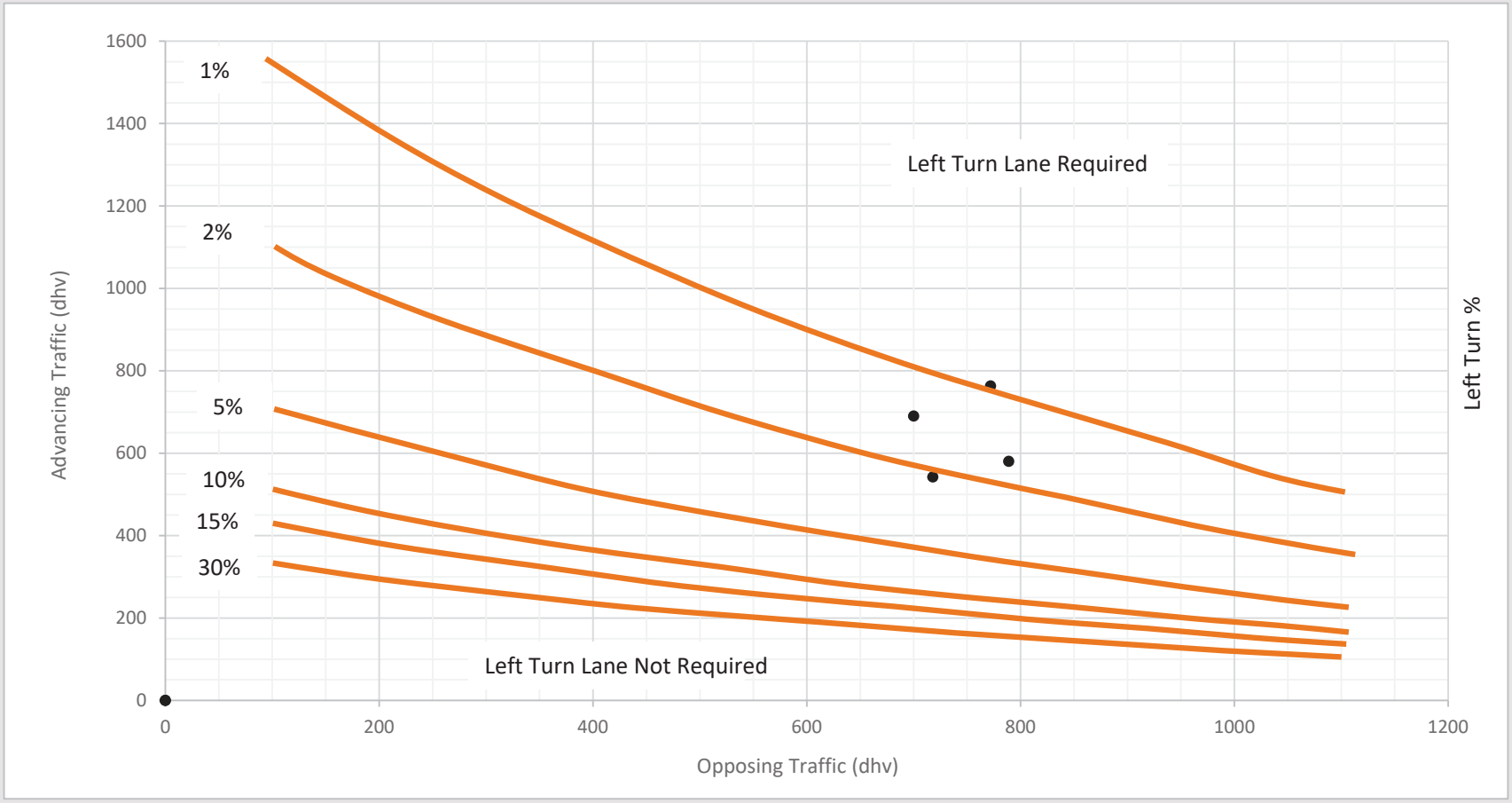
APPENDIX H
PINE RIDGE – TURN LANE WARRANTS

2-Lane Highway Left Turn Lane Warrant (=<40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-5a

State Rd. & Pine Ridge Dr.

Design Period	AM Peak			PM Peak		
	2021	-	2041	2021	-	2041
Advancing Traffic (dhv) [Includes Left Turns]	690	0	763	542	0	580
Opposing Traffic (dhv)	700	0	772	718	0	789
Left Turn %	0.4%	0%	0.4%	1.8%	0%	1.7%



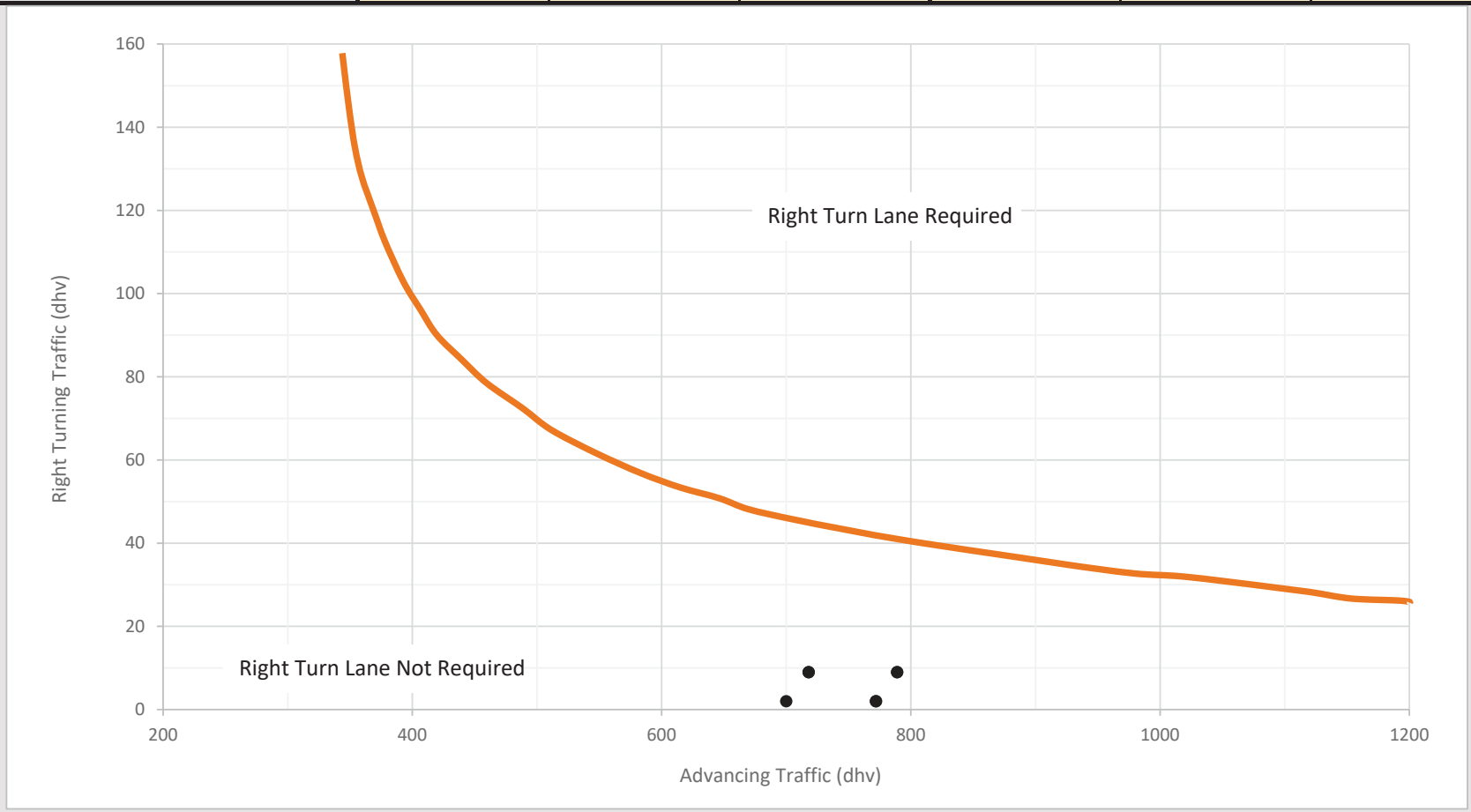
Warrant Satisfied?	NO	-	NO	NO	-	NO

2-Lane Highway Right Turn Lane Warrant (=<40 mph Posted Speed)

ODOT L&D Vol. 1 - Fig. 401-6a

State Rd. & Pine Ridge Dr.

Design Period	AM Peak			PM Peak		
	2021	-	2041	2021	-	2041
Right Turning Traffic (dhv)	2	0	2	9	0	9
Advancing Traffic (dhv) [Includes Right Turns]	700	0	772	718	0	789



Warrant Satisfied?	NO	-	NO	NO	-	NO

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APPENDIX I
PRELIMINARY CONCEPT

WYOGA LAKE CORRIDOR STUDY - PRELIMINARY LAYOUT

MODEL: Untitled Sheet PAPERSIZE: 17x11 (in.) DATE: 6/9/2021 TIME: 10:46:44 AM USER: bmorgan
O:\Eric Smith_Production\Cuyahoga Falls\Wyoga Triangle Corridor Study\CAD\Alt 1 - Preliminary Layout.dgn