Prepared for: The City of Commerce City

July 2020

Traffic Technical Report

88TH AVENUE: I-76 NB RAMPS TO HIGHWAY 2

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TABLE OF CONTENTS

LIST OF FIGURES

Page

LIST OF TABLES

Page

ABBREVIATIONS

AADT	Annual Average Daily Traffic
ATD	All Traffic Data
ATS	Average Travel Speed
Blvd	Boulevard
CDOT	Colorado Department of Transportation
CAGR	Compound Annual Growth Rate
DRCOG	Denver Regional Council of Governments
E/O	East of
EB	Eastbound
HCS	Highway Capacity Software
HCM	Highway Capacity Manual
LOS	Level of Service
MPH	Mile Per Hour
MS2	Transportation Data Management System
N/O	North of
NB	Northbound
PDO	Property Damage Only
PFFS	Percent of Free Flow Speed
ROW	Right-of-Way
S/O	South of
SB	Southbound
TWLTL	Two-Way Left Turn Lane
V/C	Volume to Capacity ratio
VMT	Vehicle Mile Traveled
W/O	West of
WB	Westbound

1 INTRODUCTION

1.1 Study Area

The City of Commerce City (City) intends to improve operations along East 88th Avenue. This stage of the project is being developed as an Environmental Assessment and Preliminary Design. The study area is bounded by the Interstate Highway 76 (I-76) east ramp intersection to the west and Highway 2 to the east, encompassing approximately 1.6 miles of East 88th Avenue. The study area also includes approximately one quarter mile of Rosemary Street south of E. 88th Avenue to 86th Avenue as shown in **Figure 1**.

Figure 1. Map of Study Area

1.2 Study Purpose

The purpose of the project is to improve traffic operations along E. 88th Avenue and accommodate all users. Proposed improvements that will be considered as part of this project include:

- Widening E. 88th Avenue with appropriate turn lanes and median
- Upgrading the traffic signal at the intersection of E. 88th Avenue with Rosemary Street and connecting all signals between I-76 and Highway 2
- Constructing sidewalks and providing bike facilities through the corridor in accordance with the City's adopted Bike-Walk-Fit Plan
- Accommodating a new 66" storm sewer planned by Mile High Flood District (MHFD) through the corridor

This traffic technical report will support alternative development and preferred alternative selection for the first two primary proposed improvements for the project. Existing condition evaluations will help identify unsafe areas of the corridor and areas with specific traffic issues. Future traffic forecasts will show need to increase capacity of the roadway. Modeling of proposed improvements will help determine acceleration/deceleration turning lane needs, access changes needed, and other corridor improvement recommendations.

2 EXISTING CONDITIONS

Existing traffic conditions throughout the study corridor are heavily influenced by several factors:

- The Mile-High Flea Market: The Mile-High Flea Market in Commerce City is an open-air market with vendors selling food, antiques, clothes, bikes, etc. from Friday to Sunday throughout the year. The Mile-High Flea Market is located at the west end of the study area and has high eastbound left turn demand into its entrance from E. 88th Avenue. The anecdotal evidence indicates that the traffic to the Mile-High Flea Market entrance on E. 88th Avenue could back up onto the I-76 eastbound mainline travel lanes during the weekend, specifically in spring and summer (See Section 2.5).
- Union Pacific Railroad (UPRR) At-Grade Crossing: The at-grade crossing of the UPRR causes traffic backups while trains are stopped across the tracks intersecting E. 88th Avenue. Due to the train stop, depending on the stop duration, traffic blockage can happen on E. 88th Avenue in both east and west directions as well as northbound on Rosemary Street. These blockages are unpredictable and interrupt businesses, travel time reliability, and emergency responder routes.
- The 88 Drive-In Theatre: The 88 Drive-In Theatre is located on the southeast corner of E. 88th Avenue and Rosemary Street in Commerce City. Access to and from the Theatre causes traffic tie-ups due to high entrance volumes at their single entrance off the Rosemary Street every evening in the open season of the Theatre. Congestion at Rosemary Street and E. 88th Avenue could be worsened during the PM peak hour in summer when the Theatre is open due to the existing two-lane roadway, with no left turning lane pocket at the Drive-In Theatre entrance.
- Industrial Access: The amount of industrial accesses along E. 88th Avenue results in a high heavy vehicle percentage on E. 88th Avenue.

2.1 Overview of the Study Corridor

E. 88th Avenue is designated as a minor arterial in the City's Transportation Plan. It serves as a connection to businesses and residents, but also as a heavily traveled commuter route for vehicles traveling from Rosemary Street (the northern terminus of Quebec Street) to the I-76 and E. 88th Avenue interchange. Therefore, E. 88th Avenue has lower traffic volumes east of the Rosemary Street intersection, splitting the corridor into two logical segments differing in character.

E. 88th Avenue features prominently throughout the City's Comprehensive Plan as a critical connection, not just for vehicle travel, but for pedestrians and cyclists as well. Trail and sidewalk added to E. 88th Avenue will provide opportunity to connect to the west segment toward the future RTD station, future O'Brian Canal Trail, and the Rocky Mountain Arsenal National Wildlife Refuge Perimeter Trail. The corridor currently has no sidewalk, no bike lanes, and a single RTD bus stop for Bus Route 88 at the Brighton Road intersection.

E. 88th Avenue: E. 88th Avenue, an east-west roadway, extends from I-76 to Highway 2 in our study area. E. 88th Avenue currently has two lanes in each direction provided west of Brighton Road to 1-76. One of the eastbound lanes becomes a dedicated left turn lane serving the Mile-High Flea Market entrance. Then the roadway narrows down to one lane each direction at the bridge over the O'Brian Canal, picking up a two-way left turn lane (TWLTL) east of the Rosemary signalized intersection. The TWLTL drops at the FedEx property and E. 88th Avenue remains one lane each direction to the Highway 2 signalized intersection. Outside of the I-76 Interchange, Brighton Road, Rosemary Street, and Highway 2, all other intersections are two-way stop controlled. E. 88th Avenue has a speed limit of 40 mph in the study area.

The major roadways that intersect E. 88th Avenue along the study area are listed below:

Interstate Highway 76, an east-northeast and west-southwest interstate, intersects E. 88th Avenue on the west end of the study area, the interchange improvements are not part of this project. The interstate is a six-lane segment that has eastbound-westbound single lane on and off ramps at E. 88th Avenue. There are two signals for each ramp terminal. The west terminal is a six-legged intersection connected with a north-south frontage road. The west I-76 off ramp has two approaches, a left turn lane and a left-through-right lane. The frontage has the same approach. The east-west left turn movements are protected-permissive, one to the I-76 on-ramp and the other to the frontage road. The east terminal is a four-legged intersection. The east I-76 off ramp has three approaches, a left turn lane, a left-through-right lane, and a right turn

lane. The eastbound left movement is protected-permissive onto the I-76 on ramp. I-76 mainline posted speed limit is 65 mph, and the off-ramp speed limits are posted at 35 mph. The interstate continues northeast to the Nebraska state border, and southwest to connect with I-70.

Brighton Road, a northeast-southwest roadway, intersects with E. 88th Avenue just east of the I-76 interchange. The north-eastbound approach has two lanes, a through-left and a right only. The south westbound approach has two lanes, a left only and a through-right movement. Both legs beyond the intersection are two-lane roadways. This intersection is signalized with eastbound-westbound lefts on E. 88th Avenue being protected-permissive. The posted speed limit on Brighton Road is 35 mph.

Rosemary Street, a north-south roadway, intersects E. 88th Avenue at a T-intersection in the center of the study area. The northbound approach has two lanes, a left only and right only. This intersection is signalized and contains a protected-permissive left westbound turn and right-turn overlap eastbound. Rosemary Street is a two-lane roadway south of the intersection. The posted speed limit is 35 mph. This roadway provides direct access to Highway 2 and Quebec Street making this a major intersection.

> ***86th Avenue,*** an east-west roadway, intersects Rosemary Street at a T-intersection at the southern end of the study area. 86th Avenue is a two-lane, unstriped roadway with an unsignalized (stop controlled) T-intersection at Rosemary Street. The posted speed limit is 25 mph.

Highway 2, a northeast-southwest highway, intersects with E. 88th Avenue at the very east end of the project ending this corridor. This is a signalized T-intersection. The E. 88th Avenue eastbound approach has a left turn lane and a channelized right turn lane. The north-eastbound approach on Highway 2 has a left turn lane and two through lanes. The south-westbound has two through lanes and a channelized right turn. The highway is a four-lane roadway in both directions. The posted speed limit is 55 mph. This highway provides direct access to State Highway 44 and I-76 to the north, and US 85 and I-225 to the south.

2.2 Data Collection

This section presents an overview of existing traffic operation, collected traffic counts, safety information and data sources employed within the project area.

2.2.1 Traffic Signal Timing

Existing traffic signal timing plans for the signalized intersections along E. 88th Avenue were obtained from Commerce City for the Rosemary and Highway 2 intersections, and from CDOT for the West Frontage Road, I-76 westbound ramps, I-76 eastbound ramps, and Brighton Road.

2.2.2 Existing intersection geometry

Intersection geometry including intersection spacing, lane configuration, and turn lane storage lengths were collected from field visits, the project field survey, and the latest available Google Maps.

2.2.3 Intersection Turning Movement Counts (TMC)

Intersection TMC were collected during the typical weekday and on Sunday in 15-minute breakout:

- Weekday: TMC were initially collected at fourteen intersections along E. 88th Avenue on Tuesday, October 16, 2018 during the morning (6:30 AM to 8:30 AM) and afternoon (4:00 PM to 6:00 PM) peak hours. The UPRR train crossed the study corridor during the AM peak count collection causing a delay on traffic movements. To obtain undisturbed traffic movements, AM peak TMC's were recollected on Tuesday, November 13, 2018 for Rosemary and the nine other study intersections west of the train crossing.
- Weekday AM and PM peak TMC at the Rosemary Street and 86th Avenue intersection were collected on Wednesday, August 28, 2019 as the study area was extended south along Rosemary Street to 86th Avenue. **Figure 2** illustrates the 2018 (2019) turning movement traffic counts collected on three signalized intersections and eight unsignalized intersections on a weekday during the AM/PM peak hours.
- Weekend (Sunday): TMC were collected in February 2019 at five intersections west of Rosemary Street including Mile High Flea Market entrance and exit turning lanes to capture the weekend traffic pattern especially due to the high volume entrance/exit to/from Mile High Flea Market on Sundays.

2.2.4 Weekday Train Data

Train data was collected in two consecutive weekdays in February 2019. Due to irregular schedule of the train, during data collection, the collected data shows one "long" period of train stop at E. 88th Avenue for about 36 minutes, from 9:35 am to 10:12 am on Wednesday February 13, 2019.

2.2.5 Drive-In Theatre Data

The Drive-In Movie Theatre entrance and exit volume was collected in two consecutive days on Friday and Saturday, September 6 and 7, 2019, when the Theatre was open. The Drive-In Theatre's only entrance is from Rosemary Street and it has a single exit to E. 88th Avenue. Usually Theatre's box office opens at 6:00 PM on Friday and Saturday and 7:00 PM on Sunday through Thursday. To capture the influence of the Drive-In Theatre congestion on Rosemary Street, the count data was collected from 4:00 PM to 12:00 AM in 15 minutes breakout at the entrance from the Rosemary Street and exit to E. 88th Avenue.

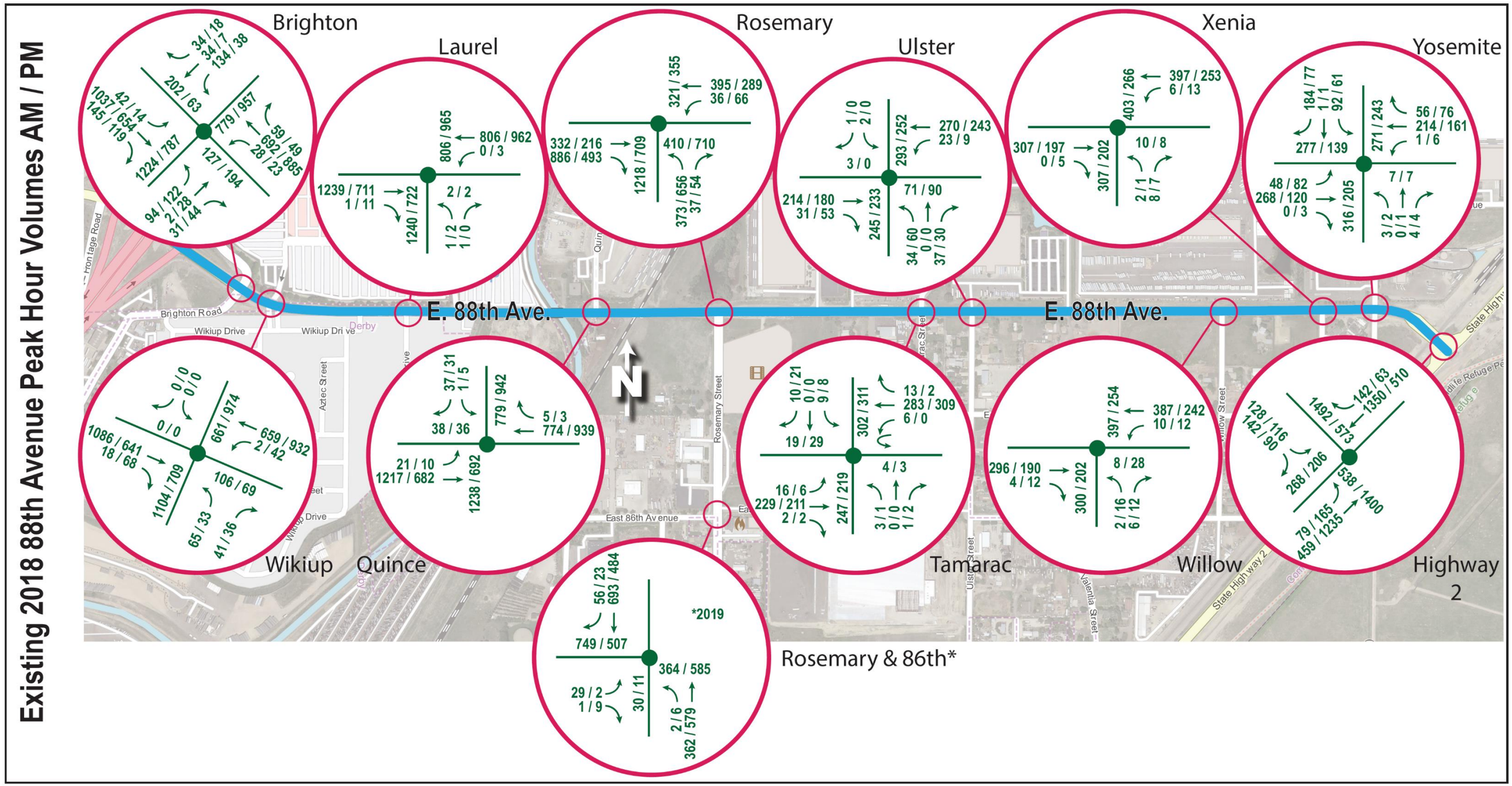

Figure 2. 2018 (*2019) Traffic Data Collection Locations and Weekday AM/PM Peak Hour Turning Movement Counts

2.2.6 Daily Traffic Volumes (ADT)

Weekday daily directional traffic volume counts were collected in January 2018 in 15-minute intervals at three segments on E. 88th Avenue listed below:

- E. 88th Avenue east of I-76 eastbound ramps
- E. 88th Avenue east of Quince Street
- E. 88th Avenue west of Tamarac Street
- Rosemary Street south of 86th Avenue (2019 classification counts)

Figure 3 to **Figure 5** display the 2018 weekday (Tuesday, February 12, 2019) two-directional traffic volumes on E. 88th Avenue daily and during the AM (6:00 – 9:00 AM) and PM (3:00 – 6:00 PM) peak hours, respectively. As shown in the **Figure 4** and **Figure 5** east of Rosemary Street, the traffic volumes are in general 30% to 40% lower in both eastbound and westbound directions during morning and evening peak hours in comparison to the traffic west of Rosemary Street.

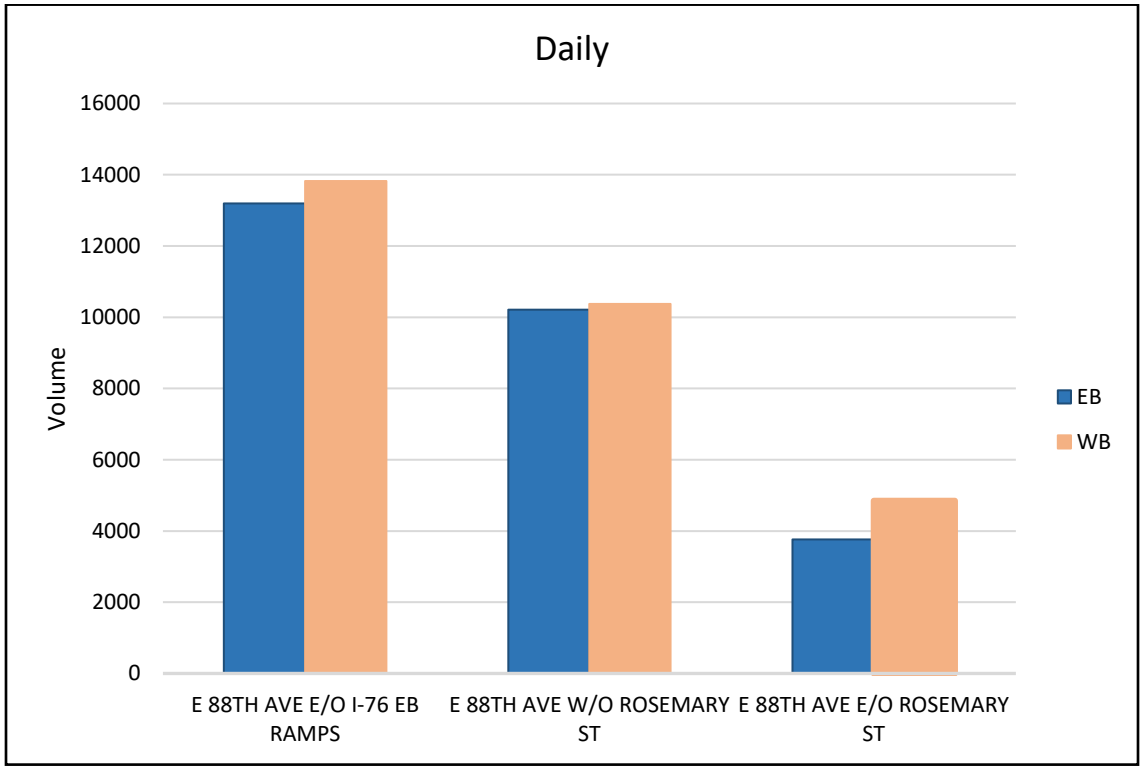

Figure 3. Daily Traffic Volume Profile along E. 88th Avenue in 2019

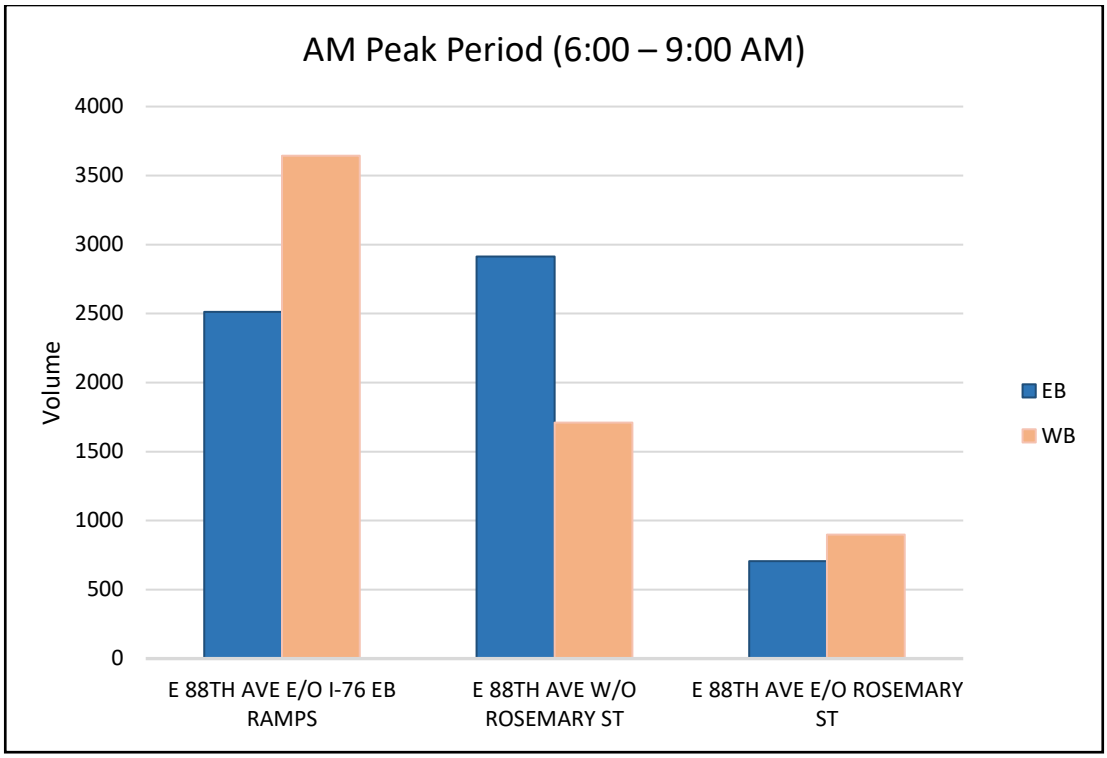

Figure 4. AM Peak Period Traffic Volume Profile along E. 88th Avenue in 2018

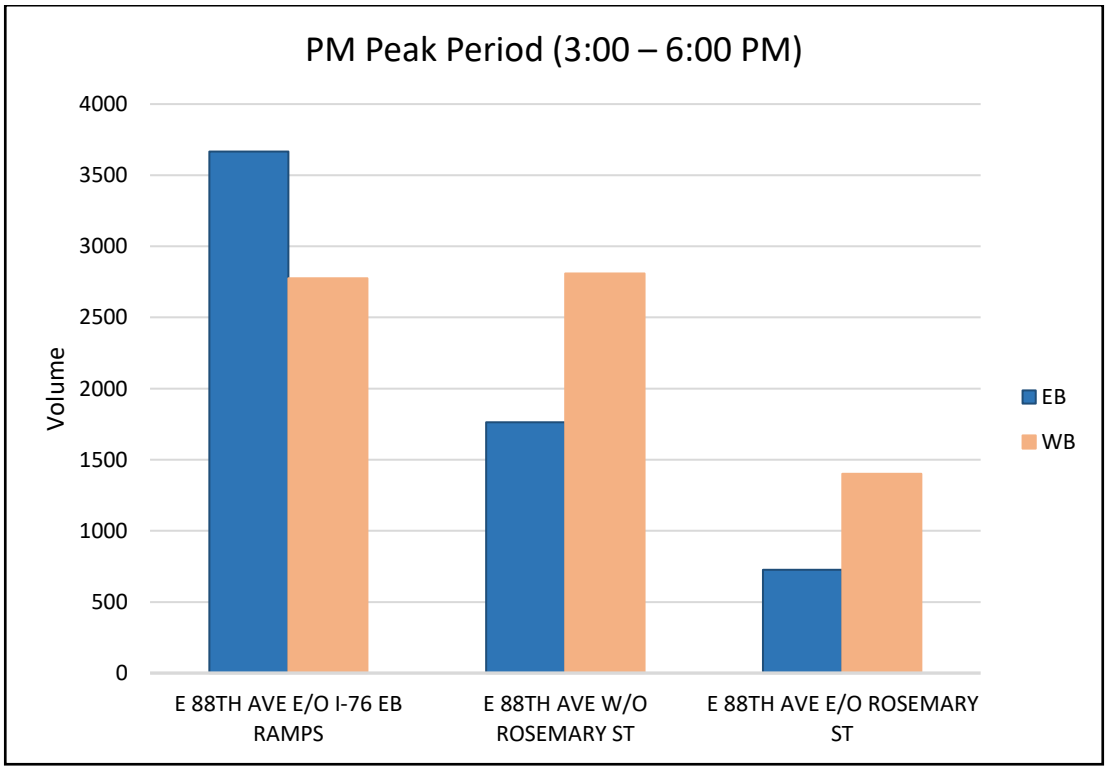

Figure 5. PM Peak Period Traffic Volume Profile along E. 88th Avenue in 2018

In addition to the counts collected for this study, several sources of regional and historical count data were examined to evaluate traffic growth for the corridor:

- Denver Regional Council of Governments (DRCOG) regional traffic counts and regional base year and future horizon model volumes
- Transportation Data Management System (MS2Soft) Annual Average Daily Traffic (AADT) count

2.3 Existing Traffic Operations

Figure 6 illustrates the type of traffic control currently utilized for each intersection in the corridor study. Currently there are six signals along E. 88th Avenue within the traffic study area located at I-76 West Frontage Road, I-76 West ramp, I-76 East ramp, Brighton Road, Rosemary Street, and Highway 2. Among the signalized intersections, the I-76 West Frontage Road and the I-76 East ramp intersections operate under the same controller. There are eight unsignalized intersections along the corridors. Four of the unsignalized intersections at Wikiup Street, Tamarac Street, Ulster Street, and Yosemite Street are two-way stop-controlled intersections. Intersections at Laurel Drive, Quince Street, Willow Street, and Xenia Street are one-way stop controlled. These stop-controlled intersections do not stop E. 88th Avenue.

Figure 6. E. 88th Avenue Existing Traffic Operations (Public ROW)

2.4 UPRR Train Crossing

Key consideration for the traffic study area includes the effect of a railroad at-grade crossing at E. 88th Avenue between Laurel Dr. and Rosemary St. According to several anecdotal stories the train crossing causes delays of over an hour per stop at E. 88th Avenue. Each train crossing during the day can cause traffic to queue up onto I-76 to the west, E. 88th Avenue to the east, and south on Rosemary Street. The

collected train data in February 2019, which recorded a 36-minute stop at E. 88th Avenue intersection, supports the anecdotal reports of significant traffic backlog and travel delay due to the train stop at this corridor. The UPRR does not share or publish its train schedule and it is subject to change at any time.

2.5 Mile High Flea Market

Mile High Flea Market is located at 7007 E. 88th Avenue, on the North-East corner of E. 88th Avenue and I-76. It is a year-round open-air market with vendors selling from Friday to Sunday 7:00 AM-5:00 PM. The main entrance is located on E. 88th Avenue between Laurel Dr. and Quince St., west of Rosemary Street. The main entrance has a 335-foot driveway with six ticket booths. There is a second smaller entrance off Brighton Rd. with a 240-foot driveway and three ticket booths. Neither entrance has reported traffic queuing up from the ticket booth to block traffic on the main roads. The Mile-High Flea Market has one two-lane exit which is the north leg of the Wikiup intersection.

Hourly volume of total tickets vended at the ticket booths on Fridays through Sundays in 2017 and 2018 are provided by Mile High Flea Market. The data reflects higher volume of vended tickets on Sundays especially in the peak season in Spring.

2.5.1 Mile High Flea Market Count Adjustment Factor

Table 1 below shows the seasonal average tickets sold on Sundays in 2018.

Table 1. Average Tickets Sold on Sundays in Seasons and in February - 2018

2018	Average Sold Ticket
Spring	13,850
Summer	13,160
Fall	10,460
Winter	7,720
February	***7,570***

Traffic counts at the entrances of the Mile-High Flea Market traffic were collected on Sunday, February 10, 2019. Based on the vended tickets from Mile High Flea Market data, spring season has the highest average number of commuters to Mile High Flea Market. To account for the seasonality factor to the

collected traffic counts in February 2019, a seasonal adjustment rate was calculated, shown in **Table 2** below. The adjustment factor is calculated based on the average of two type of factors:

- Fall to Spring adjustment factor
- February to Spring adjustment Factor

Table 2. Calculated Average Seasonal Adjustment Rate

Factor Type	Adjustment Factor
February/Spring	1.83
Winter/Spring	1.79
Average Adjustment Factor	**1.81**

The average adjustment factor is utilized to adjust the traffic counts collected on Sunday, February 10, 2019 at Mile High Flea Market entrance. Applying the adjustment factor to account for peak hour seasonality factor in Spring, **Figure 7** below represents the traffic volumes determined for existing (2019) analysis on Sunday during the peak hour.

Figure 7. Traffic Volumes Estimated on a Sunday at the Mile-High Flea Market Entrance in 2019 – Synchro 10 Graphic

To estimate representative Friday traffic at the Mile-High Flea Market, we looked at the ticketed data on Fridays in 2018 and followed the assumptions below for determining the Friday volume for analysis:

- From the Mile-High Flea Market Data on Fridays in 2018, selected the 4th largest high-volume ticketed hour as the peak hour volume
- Assumed the average 2 person per car as the car occupancy rate
- Applied the distribution rate determined from the traffic count collected on Sunday to determine E. 88th Avenue westbound right turn and westbound left turn traffic to Mile High Flea Market
- Utilized the weekday counts collected on Tuesday to represent the thru traffic on Friday
- Traffic volume entering the Mile-High Flea Market stays constant in future years assuming no changes in the flea market development

Considering the above assumptions, **Figure 8** below represents the traffic volumes determined for existing (2019) analysis on Friday during peak hour.

Figure 8. Traffic Volumes Estimated on Friday at Mile High Flea Market Entrance in 2019 - Synchro 10 Graphic

2.6 The 88 Drive-In Theatre

The 88 Drive-In Theatre is located on the southeast corner of E. 88th Avenue and Rosemary Street in Commerce City. The Theatre box office opens at 6 PM on Friday and Saturday and 7 PM on Sunday through Thursday. Movies start at 7:30 PM and can run well past 2:00 AM on some nights. Along Rosemary Street, there is not currently a southbound left turn lane to accommodate the turning traffic to the movie theatre. The absence of a turning lane entrance causes congestion along Rosemary Street while vehicles are entering the movie theatre lot. The Drive-In lot has a two-lane wide, exit only, north of the lot which exits onto E. 88th Avenue. The Drive-In lot has an approximately 450-foot-long driveway to its ticket booth. **Figure 9** depicts traffic volumes entering and exiting 88 Drive-In on Friday during the peak PM period from 4:00PM to 6:00 PM.

Figure 9. September 2019 Traffic Counts Collected on Friday 4:00 PM to 6:00 PM at 88 Drive-In Theatre

Based on the 88 Drive-In Theatre traffic counts collected in September 2019, it is determined that the weekday Rosemary Street entrance peak volume occurs from 6:30 PM to 7:30 PM. This high-volume traffic

occurs after the PM peak hour determined for Rosemary Street (5:30 to 6:30 PM) and causes traffic back-ups due to vehicle queueing along Rosemary Street to enter the Drive-In lot. This volume consists of 150 vehicles making the right turn and 296 vehicles making the left turn from Rosemary Street into the Drive-In lot. Based on the collected data from 4:00 PM to 12:00 AM, on Friday, E. 88th Avenue exit highest volume of traffic occurs from 11:00 PM to 11:45 PM This volume consists of 114 vehicles making the left turn and 23 vehicles making the right turn from the Drive-In lot onto E. 88th Avenue. The remaining traffic exits the Drive-In after the final movie features. **Table 3** shows the summary of the total collected counts at the entrance and exit of the 88 Drive-In Theatre on Friday and Saturday, September 6 and 7, 2019.

Table 3. The 88 Drive-In Entrance and Exit Volumes from 4:00 PM to 12:00 AM on Friday and Saturday, September 2019

	Entrance Volume from Rosemary St		Total	Exit Volume to 88th Ave		Total
	NB RT	SB LT		NB LT	NB RT	
Friday	150	296	446	114	23	137
Saturday	158	286	444	62	13	75

2.7 Operation Analysis of Existing Conditions

2.7.1 Roadway Segments

The slow-moving or stopped freight trains at the at-grade crossing create slow and unpredictable travel times. Traffic operations are affected by an at-grade rail crossing, with 44 trains including UPRR and BNSF on average crossing E. 88th Avenue per day (Federal Railroad Administration, 2017). As discussed earlier, based on anecdotal evidence, slow or stalled freight trains (daily average of 10 UPRR trains) frequently block traffic for a total time of longer than an hour on E. 88th Avenue along the study area.

E. 88th Avenue has insufficient capacity to accommodate the current and projected demand for vehicle trips in the corridor. Daily traffic volume in 2018 exceeded 20,000 vehicles per day west of Rosemary Street. Daily volume at this location is projected to exceed 27,500 vehicles per day in 2040, an increase of 37.5%. Highway Capacity Software (HCS) was used for a segment analysis at three locations: E. 88th Avenue: West of Rosemary Street, E. 88th Avenue: East of Rosemary Street, and Rosemary Street: South

of 86th Ave. AM and PM peak directional volumes were used to determine these values. **Table 4** summarize the LOS criteria for Two-Lane Highway Class III from HCM 6th edition. **Table 5** below summarized the results of segment HCM analysis during the AM and PM peak hours.

LOS criteria for a Two-Lane Highway – (Class III) is based on Percent of Free Flow Speed (PFFS).

Table 4. HCM 6th Edition – Motorized Vehicle LOS for Two-Lane Highway - Class III Highway

LOS	Percent of Free Flow Speed
A	>91.7
B	>83.3 - 91.7
C	>75.0 - 83.3
D	>66.7 - 75.0
E	≤66.7
F	Demand exceeds capacity

Table 5. Summary of AM/PM Peak Hour Segment LOS Analysis: Existing Conditions, 2019

Segment	Direction	AM			PM		
		V/C	PFFS (%)	LOS	V/C	PFFS (%)	LOS
E. 88th Ave: West of Rosemary St	EB	0.73	62	E	0.5	57.5	E
	WB	0.38	64.4	E	0.72	61.7	E
E. 88th Ave: East of Rosemary St	EB	0.18	80.8	C	0.24	79.6	C
	WB	0.16	78.3	C	0.41	74.9	D
Rosemary St: South of 86th Ave	EB	0.16	77.2	C	0.32	77.2	C
	WB	0.57	70.8	D	0.27	77.9	C

Figure 10 below exhibits the existing (2019) and future forecasted (2040) daily traffic volumes (the annual growth rate is 1.4%, see Section 3.1). It also shows the average truck percentages along the corridor. The truck percentage varies east and west of Rosemary Street.

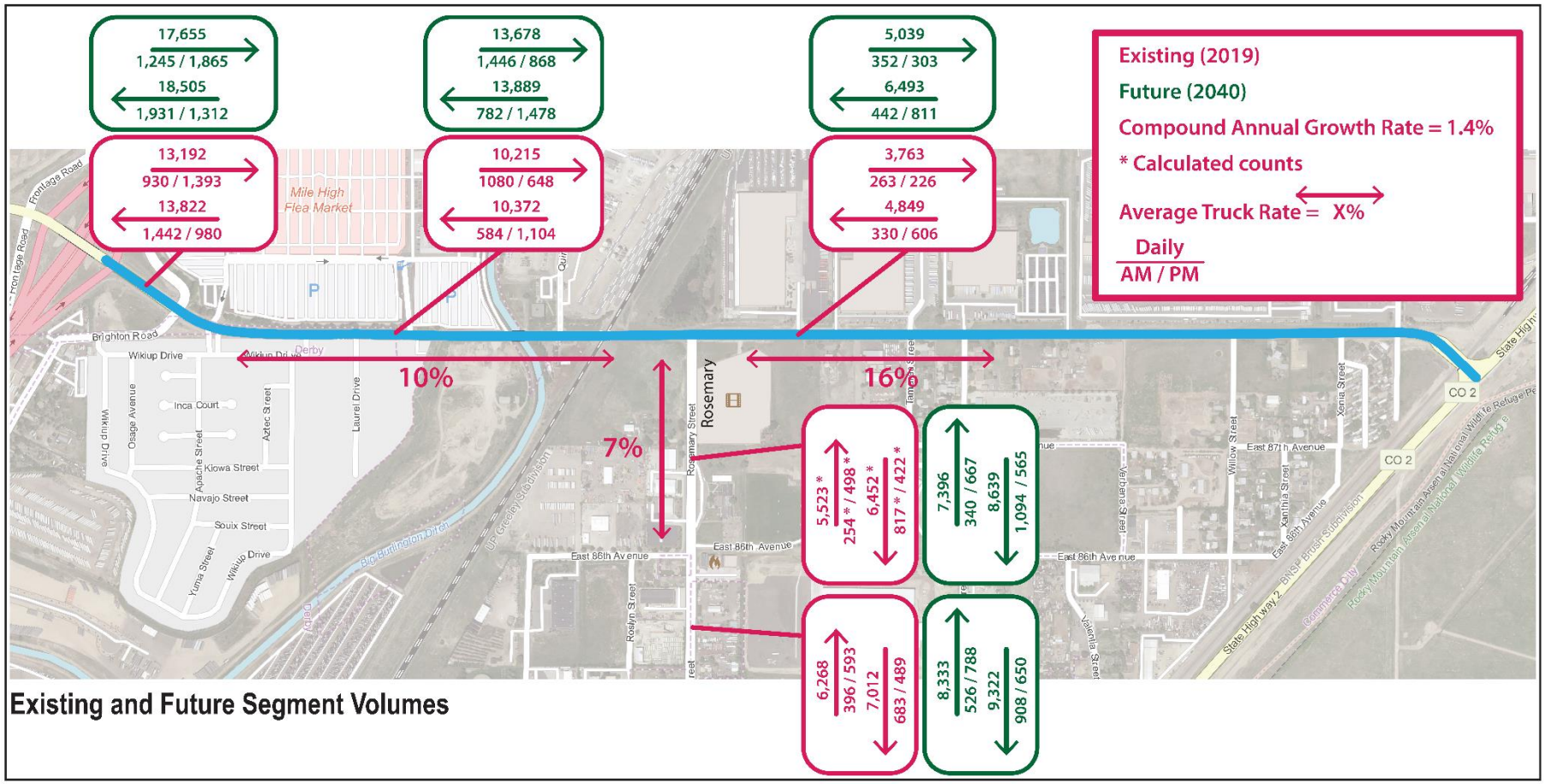

Figure 10. Existing (2019) and Future (2040) Segment Volumes and Average Truck Percentage

2.7.2 Intersection Level of Service (LOS)

For intersection LOS analysis along the study corridor on E. 88th Avenue, Synchro 10 software based on the Highway Capacity Manual (HCM), 6th Edition (Transportation Research Board [TRB], 2016) is utilized for signalized/unsignalized intersection analysis.

As described earlier, the traffic study of the project includes three signalized and eight unsignalized intersections where we collected Turning Movement Counts (TMC) in AM and PM peak periods at 6:30 AM – 8:30 AM and 4:00 PM – 6:00 PM. The collected TMCs are surface volumes which do not represent the queue volumes that may occur at the intersection.

2.7.2.1 Signalized Intersections – LOS Analysis

Level of Service (LOS) for signalized intersections is determined by the amount of wait time, or delay, a vehicle experiences for a movement of the traffic signal. The delay includes the time from when a vehicle joins a queue or is the first to start a queue, and the time stops when the vehicle can complete the movement.

Signalized intersections along the study corridor on E. 88th Avenue are listed below:

- Brighton Road
- Rosemary Street
- Highway 2

2.7.2.2 Un-signalized Intersections LOS Analysis and Accesses

The LOS for un-signalized intersections is similar to the signalized intersections. Similarly, the delay is determined by the amount of wait time a vehicle experiences before being able to complete a maneuver, but since there are no stop signs for the east or west approaches on E. 88th Avenue, the delay is negligible in these directions. Vehicles on the minor/crossing roadway approaches, north and south, experience some delay and the level of service drops accordingly.

Un-signalized intersections along the study corridor on E. 88th Avenue are listed below:

- Wikiup Drive
- Laurel Drive
- Quince Street

- Tamarac Street
- Ulster Street
- Willow Street
- Xenia Street
- Yosemite Street, and
- Rosemary Street at 86th Avenue

The results of the LOS analysis for the signalized intersections and approach LOS for unsignalized intersections are summarized in

Figure 11 during the AM and PM peak hours. These results came from a Synchro 10 model analysis (the model results are presented in the absence of train stopping at the intersection with E. 88th Avenue). All LOS analysis on the intersections are based off the HCM 6th Edition.

Note: U-turn movements recorded at some of the intersections during the AM and PM peak hours were added to left-turn volumes at that intersection.

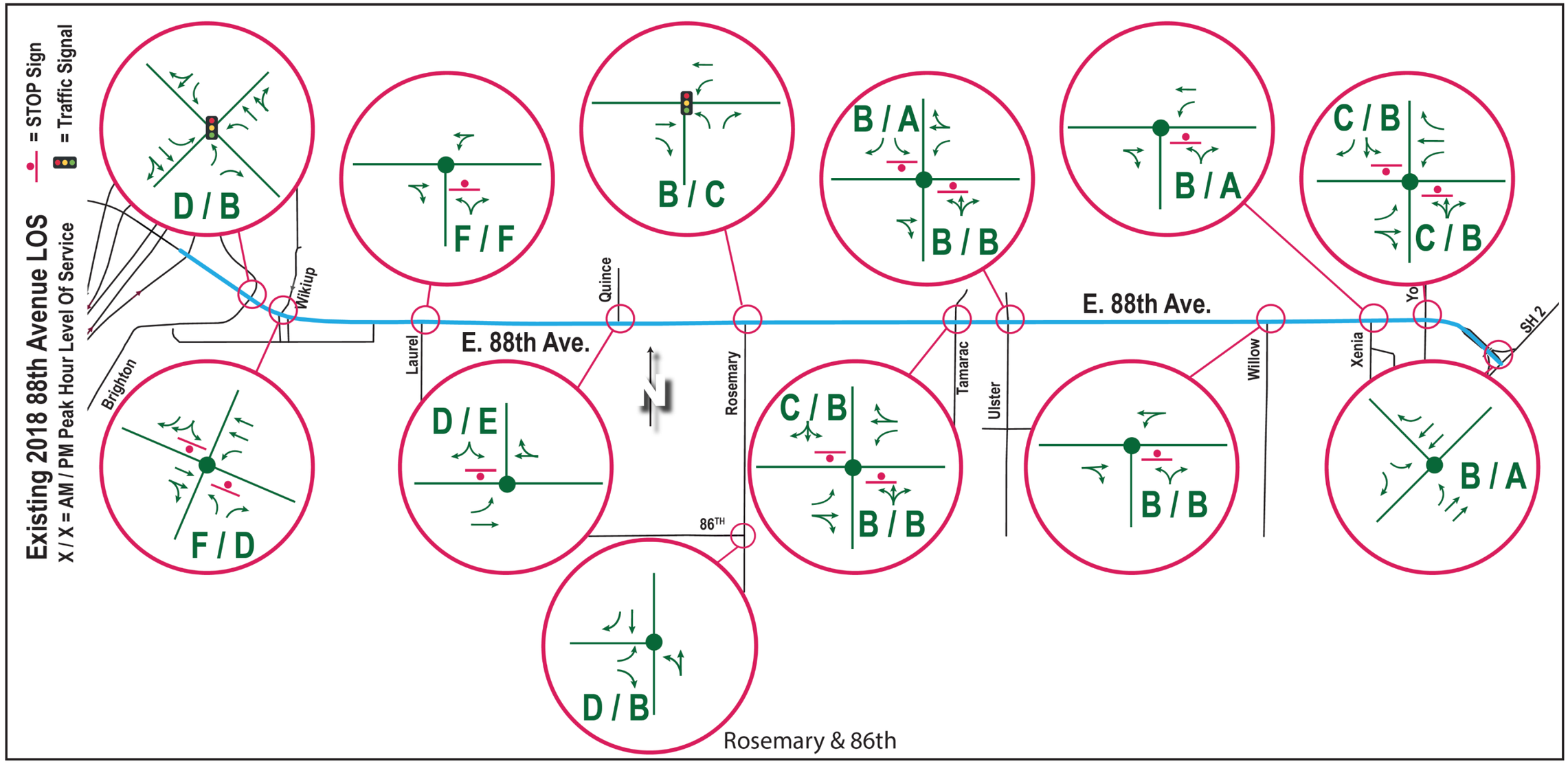

Figure 11. Exiting Geometry and Intersection (approach) LOS during AM and PM Peak Hours

2.8 Safety Analysis of Existing Conditions

Six years of crash data was provided for the study area by the Commerce City Police Department on November 9, 2018. The crash data included incidents occurring for the time period from January 1, 2013 through October 18, 2018. Two-hundred and seventy-three (333) crashes were reported. For each crash, the following data was supplied:

- Location (Address)
- Number of Vehicles
- Fatality
- Injury
- Property Damage
- Accident Type (Rear-end, Pedestrian, etc.)
- Citation (Speeding, Failure to Stop, etc.)
- Light Condition (Daylight/Dark-Lighted)
- Road Condition (Dry/Wet)
- Date and Time

2.8.1 Segment Safety Analysis

To establish segment crash rates E. 88th Avenue was split into two segments, (1) West segment: I-76 Service Road to (and including) the Rosemary intersection, and (2) East segment: Just east of Rosemary Street to (and including) the Highway 2 intersection. As exhibited in **Figure 10**, E. 88th Avenue has significantly lower traffic volumes east of Rosemary Street. **Figure 12** shows the segment dividing line as the segment crash rates would be more representative of the actual volume traveling on that segment.

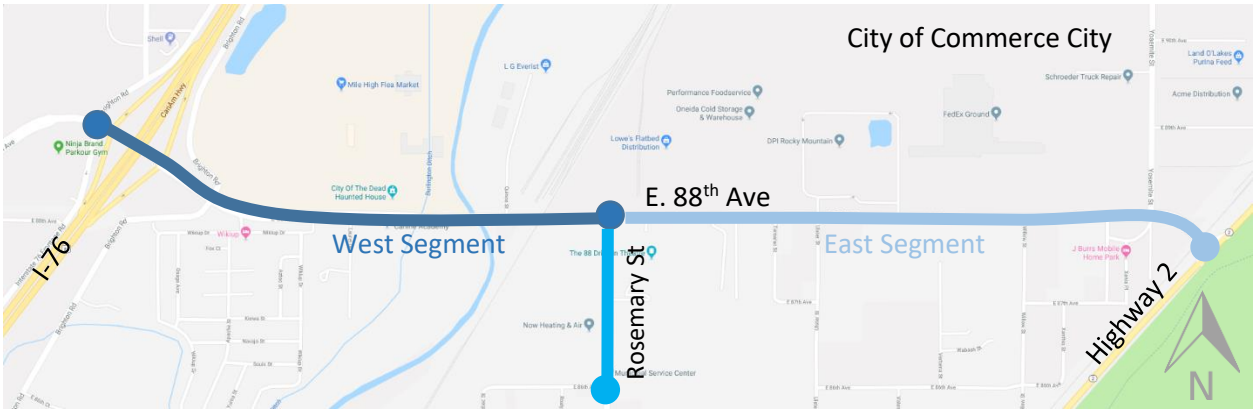

Figure 12. Safety Analysis Segments

The E. 88th Ave west segment, which is 0.8 miles in length, had 231 crashes reported. The total trips for the six years of crash data collected were estimated from DRCOG Regional Traffic Counts (http://gis.drcog.org/trafficcounts/) using historical count data. For years when no counts were available, the previous year's counts were conservatively assumed. The total daily trips assumed were as follows: 2013 – 17,623, 2014 – 19,466, 2015 - 19,466, 2016 -19,466, 2017 – 20,324, and 2018 – 20,324. These trips and the 0.8-mile segment length result in 34,067,348 vehicle miles of travel (VMT). The resulting crash rate per million vehicle miles of travel is 6.78.

The E. 88th Ave east segment, which is 0.9 miles in length, had 42 crashes reported. The total trips for the six years were estimated from 2011 daily counts (5,701) provided in the DRCOG Regional Traffic Count map and conservatively assumed constant across the crash data collection timeframe. These trips and the 0.9-mile length result in 11,236,671 VMT. The resulting crash rate per million vehicle miles of travel is 3.72.

The Rosemary St segment, which extends from E. 88th Ave to 86th Ave, is 0.25 miles in length. This segment had 60 crashes reported. The total trips for the six years were estimated from 2011 daily counts (9,650) provided in the DRCOG Regional Traffic Count map and conservatively assumed constant across the crash data collection timeframe. These trips and the 0.25-mile length result in 21.133,500 VMT. The resulting crash rate per million vehicle miles of travel is 2.84.

Table 6 summarizes the crash rate per million VMT by segment.

Table 6. Summary of Crash Rate by Segment

Study Segments	Total # Of Crashes	Total VMT	Crash Rate
E. 88TH Ave West Segment: I-76 Service Road to Rosemary Intersection	231	34,067,348	**6.78**
E. 88th Ave East Segment: East of Rosemary Intersection to Highway 2	42	11,236,671	**3.72**
Rosemary St Segment: E. 88th Ave to 86th Ave	60	21,133,500	**2.84**

These crash rates were compared to CDOT statewide crash rates for minor arterial roadways (https://www.codot.gov/library/traffic/safety-crash-data/accident-rates-books-coding/crash-rate-books-accident-rates-books/accident-rates-book-2012) which had a 1.75 rate in 2012 (the most recent available). From this comparison, both segments of East E. 88th Avenue within the study area exceed the statewide average crash rate.

Summaries of crash data by severity and crash type for each segment are provided below in **Table 7** through **Table 9**.

Table 7. Summary of Crash Data by Severity – E. 88TH Avenue West Segment

West Segment	Total # Of Crashes	% of Fatal
INJURY	19	8.20%
PDO	212	91.80%
FATALITY	0	0.00%
West Segment Total	231	100%

Table 8. Summary of Crash Data by Severity – E. 88th Avenue East Segment

East Segment	Total # Of Crashes	% of Fatal
INJURY	4	9.50%
PDO	37	88.10%
FATALITY	1	2.40%
East Segment Total	42	100%

Table 9. Summary of Crash Data by Severity – Rosemary St E. 88th to 86th St Segment

ROSEMARY ST	Total # Of Crashes	% of Fatal
INJURY	2	3.30%
PDO	58	96.70%
FATALITY	0	0%
ROSEMARY St TOTAL	60	100%

3 FUTURE NO-BUILD TRAFFIC CONDITION

In the future, the E. 88th Avenue corridor is anticipated to continue developing as a major economic and employment generator for the City with additional light industrial and the transformation of the Mile-High Flea Market into a regional infill commercial center.

This section presents the methodology and assumptions used to forecast traffic volumes on E. 88th Avenue for the forecast year of 2040 used in this traffic study.

3.1 Background Traffic Future Growth Rates

Background traffic and traffic growth rates for the E. 88th Avenue corridor were evaluated based on the annual traffic volumes using the base year 2015 and future year 2040 model volumes from Denver Regional Council of Governments (DRCOG) travel demand model. DRCOG 2015 and 2040 model volumes were evaluated using NCHRP 765 modeling adjustments to obtain growth rates at two locations: west-of Rosemary Street and east-of Rosemary Street as illustrated in **Table 10.** The average of the two growth rates is used as a final average compound annual growth rate (CAGR) of 1.4% to forecast volume along the whole E. 88th Avenue corridor and Rosemary Street.

Table 10. DRCOG 2015 and 2040 modeled traffic volume and the CAGR

Location	2015	2040	CAGR
E. 88th Avenue W/O Rosemary	19,675	27,500	1.40%
E. 88th Avenue E/O Rosemary	6,146	8,600	1.40%
Rosemary Street S/O 86th	12,683	16,910	1.40%

3.2 Trip Generation

Synchro TripGen 10 is used for weekday AM and PM peak hour trip generation determining the number of trips for the future (2040) potential developments around E. 88th Avenue. The land use has been zoned by Commerce City as industrial, agricultural, and planned unit development (PUD). There were 15 sites that EST deemed would influence E. 88th Avenue. **Figure 13** presents where those sites are located.

Figure 13. Location of the 15 Future Developing Zones

Table 11 below shows the land use zoning and characteristics. It also shows the number of trips entering and exiting the labelled area during the AM and PM peak hours generated by Synchro TripGen 10 for the horizon year of 2040.

Table 11. Future Potential Land Use Zoning and Characteristics

Location	Size (Acres)	Commerce City Zoning	Land Use Type (used in Synchro TripGen 10)	Entry Trips AM (PM)	Exit Trips AM (PM)
A	19	Agriculture	General Heavy Industrial	61 (40)	61 (40)
B	8	Agriculture	General Heavy Industrial	26 (17)	25 (17)
C	5	Medium Industrial	General Heavy Industrial	16 (11)	16 (10)
D	7	Medium Industrial	General Heavy Industrial	23 (15)	22 (15)
E	18	Medium Industrial	General Heavy Industrial	58 (38)	57 (38)
F	9	Medium Industrial	General Heavy Industrial	29 (19)	29 (19)
G	10	Agriculture	General Heavy Industrial	32 (21)	32 (21)
H	5	Agriculture	General Heavy Industrial	16 (11)	16 (10)
J	2	Industrial Storage	General Heavy Industrial	7 (4)	6 (4)
K	23	Heavy Industrial	General Heavy Industrial	74 (49)	73 (48)
L	4	Medium Industrial	General Heavy Industrial	13 (9)	13 (8)
M	4	Heavy Industrial	General Heavy Industrial	13 (9)	13 (8)
N	2	Medium Industrial	General Heavy Industrial	7 (4)	6 (4)
P	5	Medium Industrial	General Heavy Industrial	16 (11)	16 (10)
Q	30	Planned Unit Development	Residential Planned Unit Development	74 (62)	73 (62)
			Total:	**465 (320)**	**458 (314)**

For this study, EST considered the agricultural zoning areas as heavy industrial. This is a conservative approach because agricultural land use yields very few to no trips. The medium industrial zoning areas are considered also as heavy industrial. There were no trip adjustments (internal capture or pass-by-trips) applied to this trip generation estimate.

3.2.1 Trip Distribution

Three areas are determined along E. 88th Avenue and considered as the boundaries for trip distribution. These three areas are:

- West of Rosemary Street,
- East of Rosemary Street to Yosemite Street, and
- Yosemite Street to Highway 2

The intersections within these boundaries had relatively the same percentages of trip distribution. Based on engineering judgement and analysis results, an overall average of those percentages was considered to determine the trip distribution of the future developments along E. 88th Avenue. **Table 12** summarizes the trip distribution percentages in each area and the average directional percentage during the AM and PM peak hours.

Table 12. Summary of Trip Distribution Percentages

Intersection	Direction	AM	PM
East of Rosemary Street	Eastbound	60%	43%
	Westbound	40%	57%
East of Rosemary Street	Eastbound	44%	43%
	Westbound	56%	57%
East of Yosemite Street	Eastbound	56%	45%
	Westbound	44%	55%
Average Distribution	Eastbound	53%	44%
	Westbound	47%	56%

The study area distribution was applied to all of the future land developments along E. 88th Avenue which includes A, D, G, H, J, and K. B and C developments are along Rosemary Street, E and F are along Ulster Street, and L, M, N, P, and Q are along Yosemite Street. A directional distribution was determined for those on the perspective streets they have access too. Where each future development access is located was based on engineering judgement and *Commerce City Standard and Specifications* Access Guidelines. The trips entering and exiting the future developments were distributed through the study area based on the percentage of each movement of every approach at the fourteen intersections. **Figure 14** below shows the distribution of the trips.

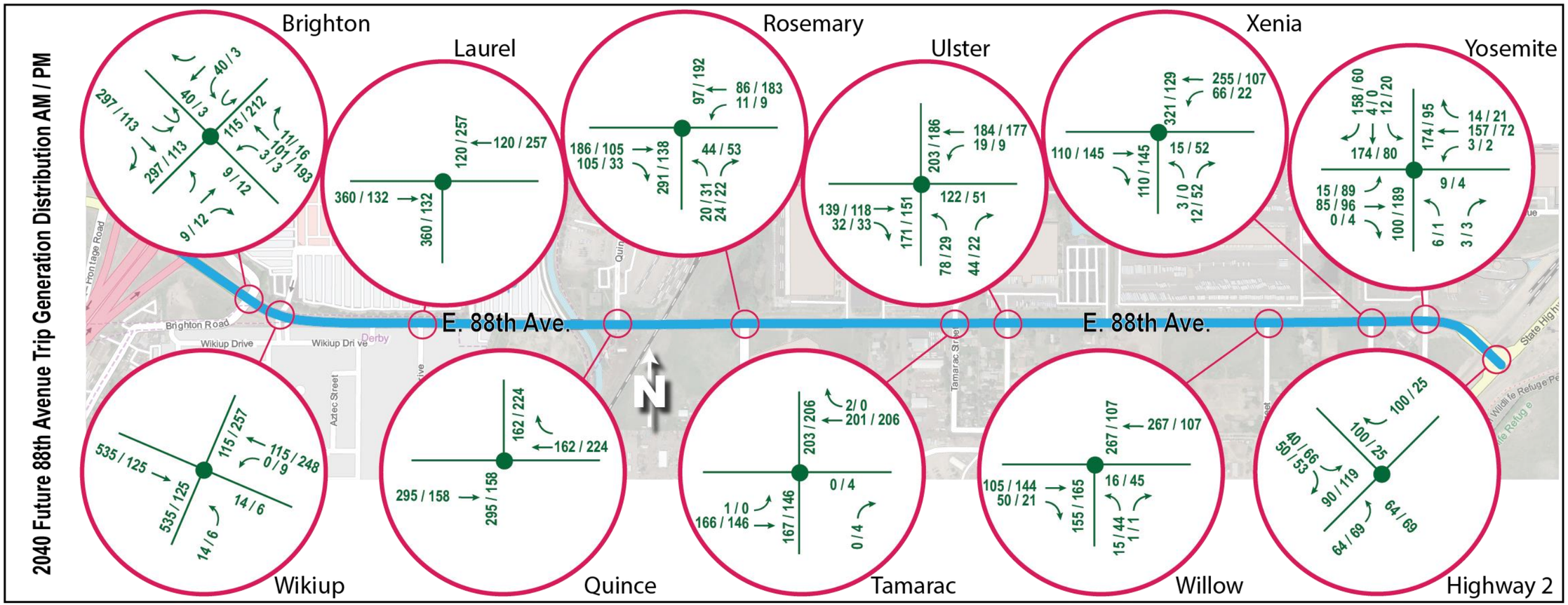

Figure 14. Distribution of the Trips Generated from the Development Zones

3.3 Future (2040) No-Build Traffic Forecasts

Applying the background annual traffic growth rate of 1.4%, **Figure 15** shows the 2040 no-build turning movement counts along the study area. The traffic counts are grown from the 2018/2019 collected counts.

3.3.1 Future No-Build Geometry and Intersection LOS

LOS for signalized intersections is determined by the amount of wait time, or delay, a vehicle experiences for a movement of the traffic signal as mentioned above. The delay includes the time from when a vehicle joins a queue or is the first to start a queue, and the time stops when the vehicle can complete the movement. 2040 no-build geometry and the results of the LOS analysis for the signalized and unsignalized intersections are summarized in **Figure 16** for AM and PM peak hours. These results are analyzed using a Synchro 10 model. All intersections are based off the HCM 6th Edition.

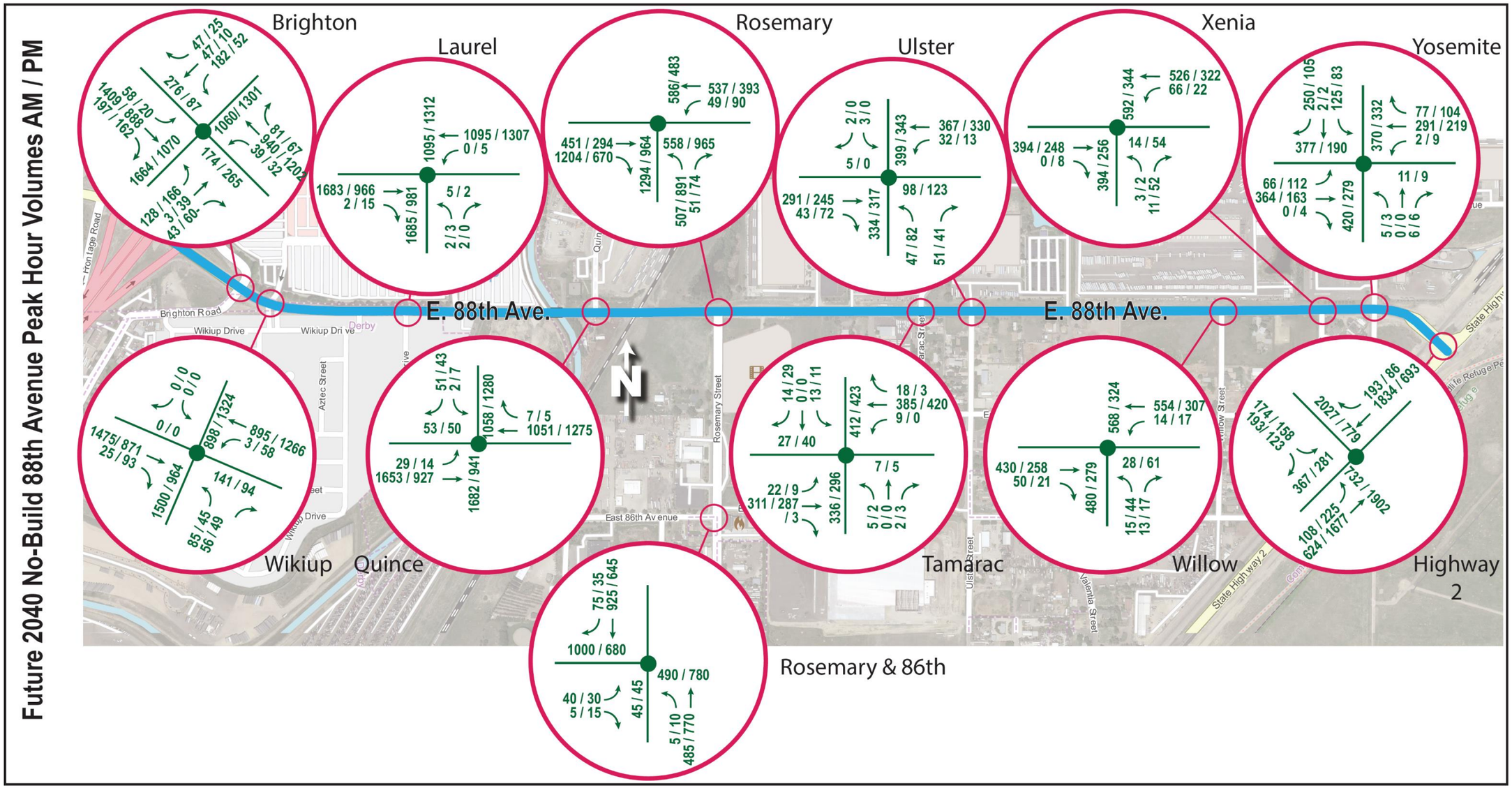

Figure 15. 2040 No-Build Turning Movement Volumes – AM/PM Peak hours

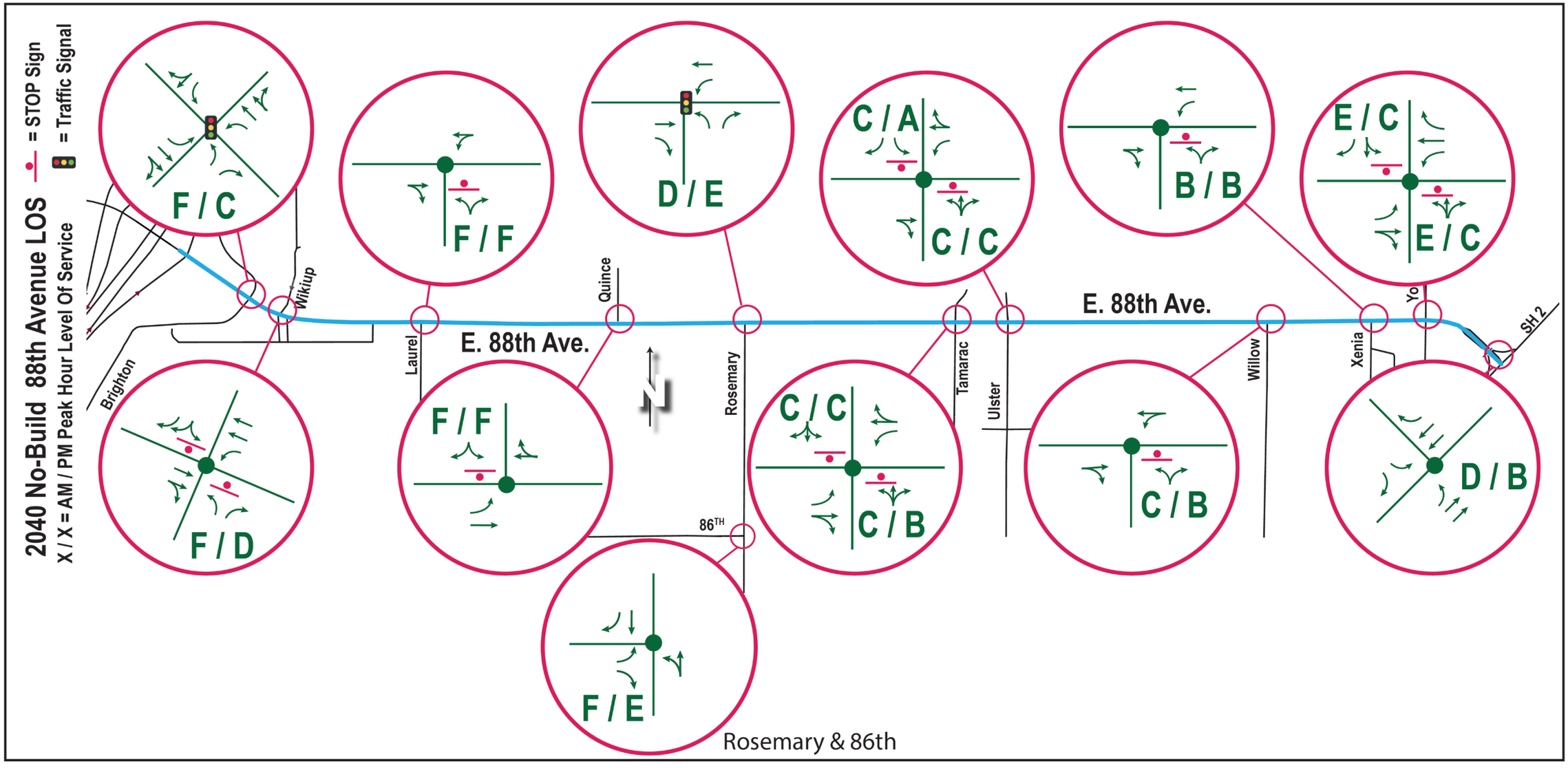

Figure 16. 2040 No-Build Lane Geometry and Intersection (approach) LOS during AM and PM Peak Hours

4 FUTURE BUILD ALTERNATIVES

This section presents the methodology, standards, and assumptions used to determine general and auxiliary lane requirements on E. 88th Avenue and Rosemary Street accounting for the forecasted traffic volumes in 2040. Result of the operation analysis is provided in the form of LOS at the signalized and unsignalized intersections for the future build recommended geometry and forecasted 2040 volumes.

4.1 Lane Requirements on E. 88th Avenue and Rosemary Street

Roadway design standards vary by county in the State of Colorado. **Table 13** below provides the summary of the lane requirements by facility and the roadway capacity values for three counties.

Table 13. General Lane Requirements Standards by Three Denver Metro Area Counties

County	Planning / Roadway Capacity	Daily Roadway Capacity - Standards			
		2- Lane	3 - Lane	4-Lane	6-lane
Adams County	Minor Arterial	12,000	N/A	24,000	36,000
Arapahoe County	Semi Urban - LOS=D	13,600	20,000	27,000	42,000
Douglas County	Minor Arterial - LOS=C	**Hourly Capacity Per Lane**		**900**	

Table 14 and **Table 15** summarize the 2019 exiting traffic volume and 2040 future forecasted volumes east and west of Rosemary Street.

Table 14. Daily Traffic on E. 88th Avenue, east and west of Rosemary Street (Collected and Forecasted)

	2019			2040			
Location: E. 88th Ave	WB	EB	Total	WB	EB	Total	Max. of AM/PM Peak Hour - Volume
W/O Quince	10,372	10,215	20,600	13,889	13,678	27,600	2,350
E/O Rosemary	4,849	3,763	8,700	6,493	5,039	11,600	1,120

Table 15. Daily Traffic on Rosemary Street, north and south of 86th Avenue (Collected, Estimated and Forecasted)

	2019			2040			
Location: Rosemary Street	NB	SB	Total	NB	SB	Total	Max. of AM/PM Peak Hour - Volume
S/O E. 88th Avenue *	5,523	6,452	11,975	7,396	8,639	16,035	1,659
N/O 86th Avenue**	6,268	7,012	13,280	8,333	9,322	17,655	1,558

*2019 Calculated, ** 2019 Collected Counts

Table 16 below summarizes the recommended number of highway lanes along the study area with respect to three Denver metro area county standards by volume/classification.

Table 16. Summary of the recommended number of highway lanes

	Recommended No. of Lanes		
County Standards	On E. 88th Avenue, W/O Rosemary - E/O Brighton	On E. 88th Avenue, E/O Rosemary	On Rosemary Street, N/O 86th Avenue
Adams County	4 - 6	2	-
Arapahoe County	4	3	3
Douglas County	4	2	-

Our recommendation for ultimate Rosemary Street is a 3-lane section. The recommendation is supported by volumes and maintaining access to driveways to/from Rosemary Street. However, we are recommending 4-lane segment north of 86th Avenue on Rosemary Street for consistency and intersection performance at Rosemary Street at E. 88th Avenue.

4.2 Future Auxiliary Lane Requirements

Section 3.04.1 of the *City of Commerce City,* Department of Public Works, *ENGINEERING CONSTRUCTION STANDARDS AND SPECIFICATIONS, updated March 2013* is used to assess the criteria for the need of acceleration and deceleration lanes. The deceleration and acceleration lengths, taper lengths, and storage lengths are determined for the study area according to the most recent version of the City requirements. Based on the auxiliary lane criteria following the minimum requirements on *Table 3-6 to Table 3-9 in the City Standards*, **Table 17** to **Table 19,** summarize the recommended right-turn and left-turn auxiliary lanes at the study intersections, considering the impacts of the 2040 future horizon volumes at the study intersections.

Table 17. Summary of 2040 Right Turn Deceleration Lane Requirements on E. 88th Avenue & Rosemary Street

E. 88th Avenue (Minor/Multimodal Arterial)

Cross Street	Direction (Right Turn)	Right Turn (VPH)	Deceleration Lane Length (ft)	Taper Rate	Taper Length (ft)	Total Length (ft)
Brighton Rd.	EB	197	135	15:1	180	315
	WB	122	135	15:1	180	315
Wikiup Dr./Flea Market E. 88th Avenue Exit	EB	93	135	15:1	180	315
Laurel Dr.	EB	20	135	15:1	180	315
Flea Market Entrance	WB	253**	135	15:1	180	315
Quince St.	WB	7	-	-	-	-
Rosemary St.	NB*	74	135	15:1	180	315
	EB	1,204	135	15:1	180	315
Tamarac St.	EB	3	-	-	-	
	WB	18	-	-	-	
Ulster St.	EB	72	135	15:1	180	315
Willow St.	EB	50	135	15:1	180	315
Xenia St.	EB	8	-	-	-	
Yosemite St.	EB	4	-	-	-	
	WB	104	135	15:1	180	315
Highway 2	EB	193	135	15:1	180	315

* Right Turn Deceleration Lane at NB Rosemary Street

** Event Traffic Count

Rosemary Street (Minor Arterial)

Cross Street	Direction (Right Turn)	Right Turn (VPH)	Deceleration Lane Length (ft)	Taper Rate	Taper Length (ft)	Total Length (ft)
88 Drive-In Theatre Entrance	NB	56*	135	15:01	180	315
86th Avenue	SB	75	135	15:01	180	315

*PM Peak: Northbound Right Turn Volume (Friday, September 6, 2019, 6:30 to 7:30 PM)

NOTE: **Data Found in Table 3-6 Right-Turn Deceleration Lanes;** ***City of Commerce City Engineering Construction Standards and Specifications***

Table 18. Summary of 2040 Left Turn Deceleration Lane requirements on E. 88th Avenue and Rosemary Street

E. 88th Avenue (Minor/Multimodal Arterial)

Cross Street	Direction (Left Turn)	Left Turn (VPH)	Deceleration Lane Length (ft)	Taper Rate	Taper Length (ft)	Storage Length (ft)	Total Length (ft)
Brighton Rd.*	EB	58	135	15:1	180	100	415
	WB	39	135	15:1	180	100	415
Flea Market Entrance	EB	447**	135	15:1	180	250	565
Quince St.	EB	29	135	15:1	180	50	365
Rosemary St.*	NB	891	135	15:1	180	300	615
	WB	90	135	15:1	180	100	415
Tamarac St.	EB	22	135	15:1	180	50	365
	WB	9	135	15:1	180	50	365
Ulster St.	WB	32	135	15:1	180	50	365
Willow St.	WB	17	135	15:1	180	50	365
Xenia St.	WB	66	135	15:1	180	100	415
Yosemite St.	EB	112	135	15:1	180	175	490
	WB	9	135	15:1	180	40	355
Highway 2*	EB	174	135	15:1	180	200	515

*Minimum storage for signalized intersection is 100 ft based on *City of Commerce City Engineering Construction Standards and Specifications* and storage length for turning volume greater than 200 ft is followed by *State of Colorado State Highway Access Code*
**Event Traffic Count

Rosemary Street (Minor Arterial)

Cross Street	Direction (Left Turn)	Left Turn (VPH)	Deceleration Lane Length (ft)	Taper Rate	Taper Length (ft)	Storage Length (ft)	Total Length (ft)
88 Drive-In Theatre Entrance	SB	98*	135	15:1	180	100	415
86th Avenue	NB	10	135	15:1	180	50	365

*PM Peak: Southbound Left Turn Volume (on Friday, September 6, 2019, 6:30 to 7:30 PM)

NOTE: Data Found in Table 3-7 Left-Turn Deceleration Lanes and Table 3-9 Storage Lengths for Auxiliary Lanes at Unsignalized Intersections; *City of Commerce City, Engineering Construction Standards and Specifications*.

Table 19. Summary of 2040 Right Turn Acceleration Lane Requirements

Cross Street	Direction (Right Turn)	Right Turn (VPH)	Acceleration Lane Length (ft)*
Brighton Rd.	NB	60	575
	SB	47	575
Wikiup Dr./Flea Market E. 88th Avenue Exit	NB	101	575
	SB	954**	575
Laurel Dr.	NB	4	-
Quince St.	SB	51	575
Rosemary St.	NB	74	575
Tamarac St.	NB	3	-
	SB	29	575
Ulster St.	NB	51	575
	SB	2	-
Willow St.	NB	17	-
Xenia St.	NB	52	575
Yosemite St.	NB	6	-
	SB	250	575
Highway 2	SB	193	575

* Includes Taper Length = 180 ft. with the Taper Rate of 15:1

** Event Traffic Count

NOTE: Data Found in Table 3-8 Right-Turn Acceleration Lane Requirements; *City of Commerce City, Engineering Construction Standards and Specifications*

Note: due to the right of way (ROW) restriction in the study area, the proposed roadway design for future Build alternative may not accommodate all the auxiliary lane required length exhibited in the auxiliary lane requirement tables.

4.3 Recommended 2040 Right Turn Acceleration/Deceleration Lanes

EST team also considered auxiliary lane requirements following the State of Colorado, State Highway Access Code guidelines for *Non-Rural Arterial - Category NR-B* of *CDOT* roadway classification. Per discussions with the City of Commerce City staff, the recommended right turn auxiliary lanes presented in **Table 20** and **Table 21** are confirmed as right turn acceleration and deceleration lane requirements in Future build at this corridor.

Table 20. Summary of CDOT, City of Commerce City, and Recommended 2040 Right Turn Acceleration Lane Requirements

Cross Street	Direction (Right Turn)	Right Turn (VPH)	Recommended by CDOT Criteria (none for <40 mph)***	Recommended by City Criteria (20 vph)	Row Available	Truck %	CDOT Acceleration Lane Length (ft)*	City Acceleration Lane Length (ft)*	Recommended for project	Recommended Lane Length (ft)*
Brighton Rd.	NB	60	No	Yes	No	11.4	380	575	No	-
	SB	47	No	Yes	No	14.7	380	575	No	-
Wikiup Dr./Flea Market E. 88th Avenue Exit	NB	101	No	Yes	No	0	380	575	No	-
	SB	954**	No	Yes	No	0	380	575	No	-
Laurel Dr.	NB	4	No	No	No	0	-	-	No	-
Quince St.	SB	51	No	Yes	Yes	62.2	380	575	**Yes**	**380**
Rosemary St.	NB	74	No	Yes	Yes	13	380	575	**Yes**	**380**
Tamarac St.	NB	3	No	No	Yes	0	-	-	No	-
	SB	29	No	Yes	Yes	38.1	380	575	No	-
Ulster St.	NB	51	No	Yes	Yes	18.9	380	575	**Yes**	**380**
	SB	2	No	No	Yes	100	-	-	No	-
Willow St.	NB	17	No	No	Yes	0	-	-	No	-
Xenia St.	NB	52	No	Yes	Yes	0	380	575	No	-
Yosemite St.	NB	6	No	No	Yes	0		-	No	-
	SB	250	No	Yes	Yes	21.7	380	575	**Yes**	**380**

** Includes Taper Length = 180 ft. with the Taper Rate of 15:1*
*** Event Traffic Count*
**** An acceleration lane is generally not required except as may be determined by subsection 3.5 of the access code (safety, operational needs)*

Table 21. Summary of CDOT, City of Commerce City, and Recommended 2040 Right Turn Deceleration Lane Requirements

Cross Street	Direction (Right Turn)	Right Turn (VPH)	Recommended by CDOT Criteria (50 vph)	Recommended by City Criteria (20 vph)	Row Available	Truck %	CDOT Lane Length (ft)			C3 Lane Length (ft)			Recommended for project	Recommended Lane Length (ft)*
							Taper	Storage	Total	Taper	Storage	Total		
Brighton Rd.	EB	197	Yes	Yes	No	4.1	144	200	344	180	135	315	No	-
	WB	122	Yes	Yes	No	6.8	144	200	344	180	135	315	No	-
Wikiup Dr./Flea Market E. 88th Avenue Exit	EB	93	Yes	Yes	Yes	2.9	144	100	244	180	135	315	**Yes**	**Match Existing**
Laurel Dr.	EB	20	No	Yes	No	0	-	-	-	180	135	-	No	-
Flea Market Entrance	WB	253**	Yes	Yes	Yes	0	144	300	444	180	135	315	**Yes**	**315**
Quince St.	WB	7	No	No	Yes	0	-	-	-	-	-	-	No	-
Rosemary St.	NB*	74	Yes	Yes	Yes	13	144	100	244	180	135	315	**Yes**	**315**
	EB	1,204	Yes	Yes	Yes	2.3	144	300	444	180	135	315	Yes	**315**
Tamarac St.	EB	3	No	No	Yes	0	-	-	-	-	-	-	No	-
	WB	18	No	No	Yes	53.8	-	-	-	-	-	-	No	-
Ulster St.	EB	72	Yes	Yes	Yes	22.6	144	100	244	180	135	315	**Yes**	**315**
Willow St.	EB	50	Yes	Yes	Yes	0	144	100	244	180	135	315	No	-
Xenia St.	EB	8	No	No	Yes	0	-	-	-	-	-	-	No	-
Yosemite St.	EB	4	No	No	Yes	0	-	-	-	-	-	-	No	-
	WB	104	Yes	Yes	Yes	26.3	144	200	344	180	135	315	**Yes**	**Match Existing**

** Right Turn Deceleration Lane at NB Rosemary Street*
*** Event Traffic Count*

4.4 Future Build Geometry and Intersection LOS

Figure 17 shows the 2040 build turning movement counts and distribution along the study area. The traffic counts are grown from the 2018/2019 collected counts and redistributed if necessary due to the future roadway geometry updates along the study area. Build geometry and the results of the LOS analysis for the signalized and unsignalized intersections are summarized in **Figure 18** for AM and PM peak hours. These results are analyzed using Synchro 10, based off the HCM 6th Edition analysis.

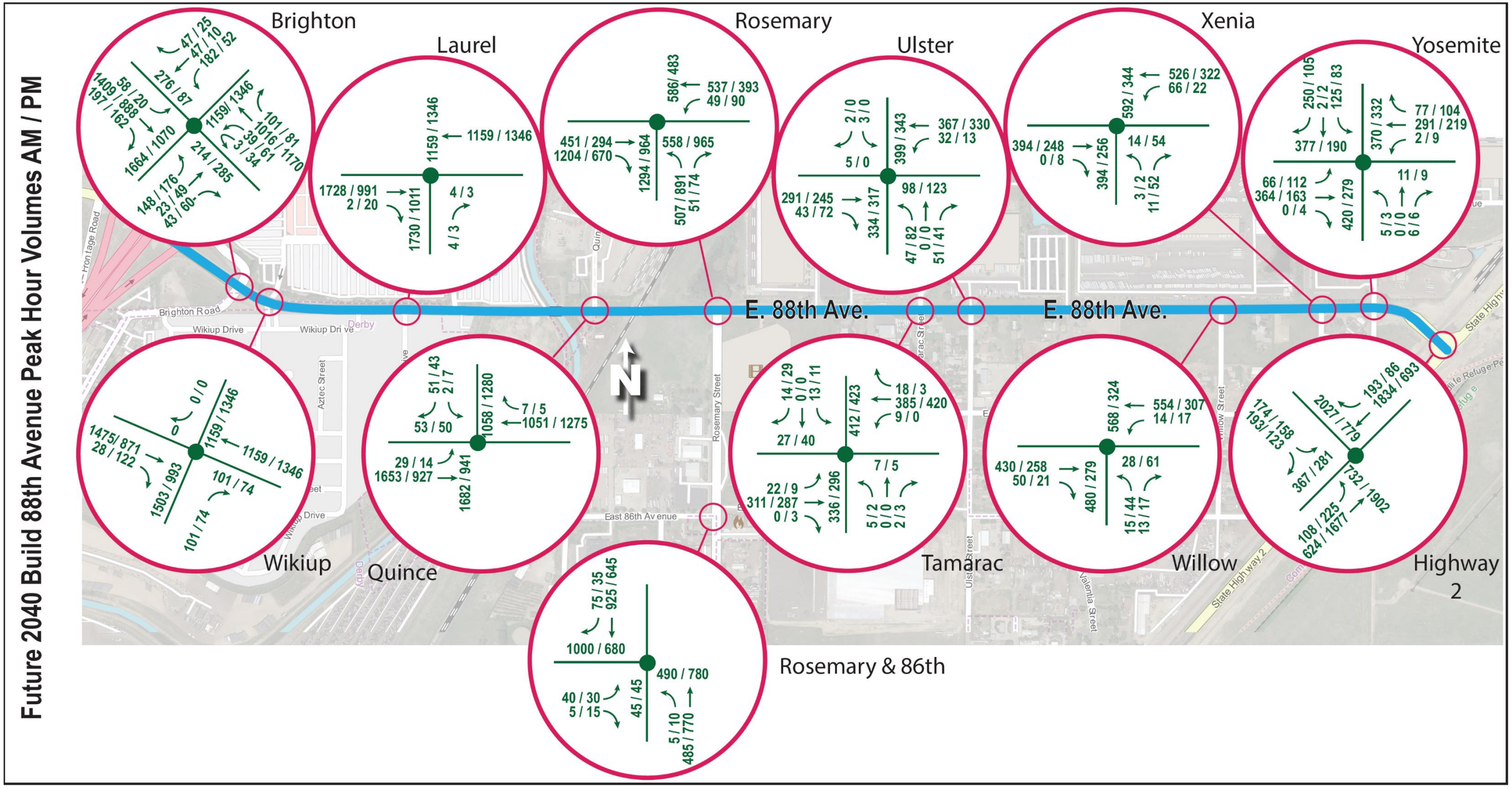

Figure 17. 2040 Build Peak Hour Turning Movement Traffic Volume

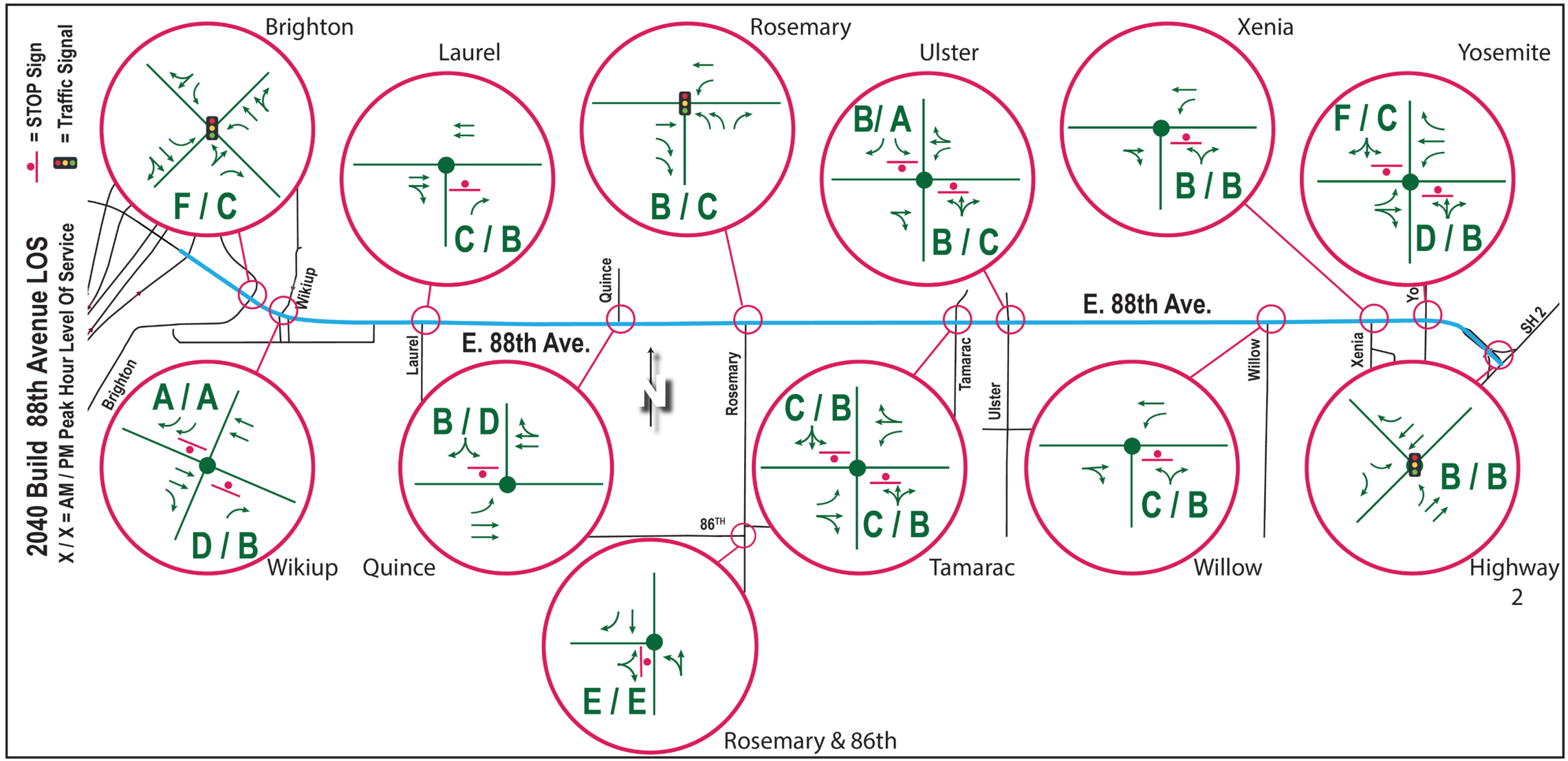

Figure 18. 2040 Build Lane Geometry and Intersection (approach) LOS during AM and PM Peak Hours

4.5 Left Turn Signal Warrant Analysis on Flea Market East Driveway and E. 88 Avenue (Entrance)

At the intersection of Flea Market Entrance and E. 88th Avenue, 2040-forecasted peak hour volume for an average Sunday is provided in **Table 22.** These volumes were calculated based on collected counts on Sunday, February 10, 2019 with a peak hour volume at 12:00PM – 1:00PM. The counts are grown to 2040 volume based on the growth rate and the historical data provided by Flea Market. As shown in **Table 22,** peak hour eastbound left turn traffic movement accessing the Flea Market plus the U-turn traffic is 447 veh/hr. This traffic is crossing the peak hour westbound through traffic movement of 543 veh/hr in the opposing direction. Therefore, the need for a traffic control signal has been studied at this intersection. For signal warrant analysis, "Warrant 3, Peak Hour", Left Turn Signal Warrant analysis is applied for 2040 weekend traffic at this intersection. According to MUTCD- 2009 edition- chapter 4C on traffic control signal needs studies, "at an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis is performed by considering the higher of the major-street left-turn volumes as the "minor-street" volume and the corresponding single direction of opposing traffic on the major street as the "major-street" volume" (MUTCD-2009 edition 4C). This Warrant is satisfied if the point representing the higher of the major-street left-turn volumes per hour and the corresponding single direction of opposing traffic per hour on the major street falls above the applicable MUTCD graph.

Table 22-2040 Forecasted Peak hour volumes on Sunday at Flea Market East Driveway and E. 88 Avenue

Location	**E. 88th Avenue**						**FLEA MARKET EAST DRIVEWAY**	
Approach	**Eastbound**			**Westbound**			Southbound	
Direction	**U-Turn**	**Left**	Thru	U-Turn	**Thru**	Right	Left	Right
Volume (vph)	**2**	**445**	921	0	**543**	253	0	2

According to the peak hour volumes and as shown in Error! Reference source not found., at this intersection, the red dot representing the major-street left-turn volume per hour (EBL) and the corresponding single direction of opposing traffic per hour on the major street (WBT) falls above "1 LANE & 1 LANE" and right at the border of "2 OR MORE LANES & 1 LANE" graphs. Warrant 3, for left-turn signal is satisfied for Flea Market East Driveway Entrance and 88th Avenue intersection.

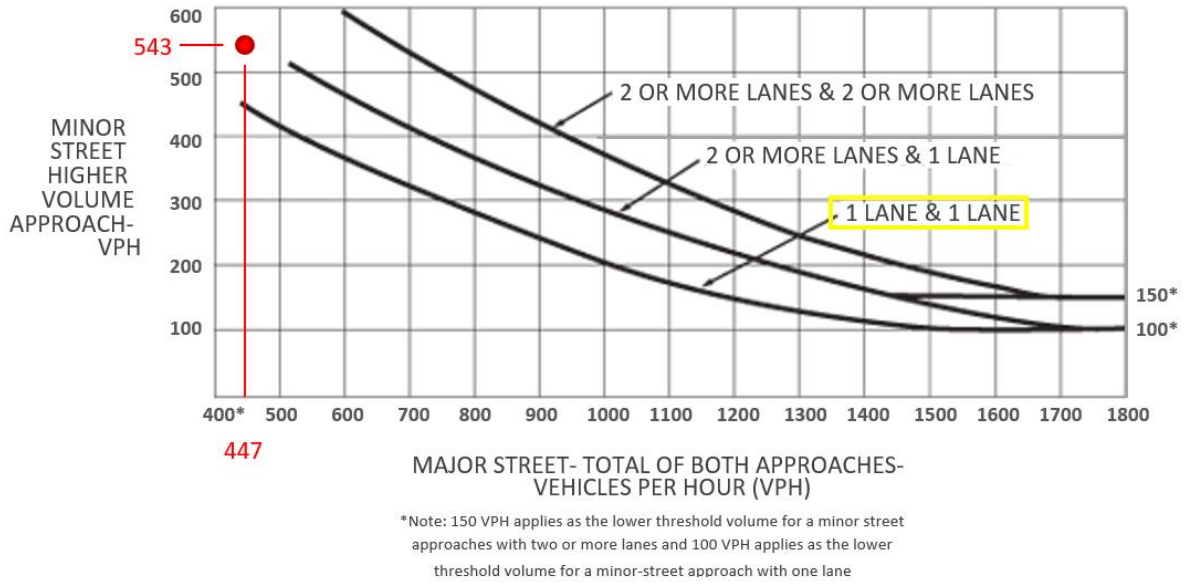

Figure 19. Left Turn Warrant 3, Peak Hour Graph* 2040 peak hour volume on 88th Avenue
Source: MUTCD 2009 edition- chapter 4C

APPENDIX A TRAFFIC COUNT DATA

All Traffic Data Services

Wheat Ridge, CO 80033

Site Code: 2
Station ID: 2
E 88TH AVE E/O I-76 EB RAMPS

Start Time	12-Feb-19 Tue	EB	WB							Total
12:00 AM		75	94							169
01:00		69	114							183
02:00		85	88							173
03:00		138	111							249
04:00		125	204							329
05:00		327	757							1084
06:00		812	1284							2096
07:00		**927**	**1352**							**2279**
08:00		773	1008							1781
09:00		624	650							1274
10:00		580	649							1229
11:00		611	646							1257
12:00 PM		752	613							1365
01:00		688	696							1384
02:00		842	671							1513
03:00		1208	890							2098
04:00		**1331**	**976**							**2307**
05:00		1128	910							2038
06:00		722	610							1332
07:00		439	398							837
08:00		321	362							683
09:00		321	316							637
10:00		203	275							478
11:00		91	148							239
Total		13192	13822							27014
Percent		48.8%	51.2%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	927	1352	-	-	-	-	-	-	2279
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	1331	976	-	-	-	-	-	-	2307
Grand Total		13192	13822							27014
Percent		48.8%	51.2%							
ADT		ADT 27,014		AADT 27,014						

All Traffic Data Services

Wheat Ridge, CO 80033

Site Code: 3
Station ID: 3
E 88TH AVE E/O QUINCE ST

Start Time	12-Feb-19 Tue	EB	WB							Total
12:00 AM		72	59							131
01:00		86	55							141
02:00		60	69							129
03:00		116	114							230
04:00		181	97							278
05:00		565	236							801
06:00		**1080**	**584**							**1664**
07:00		976	567							1543
08:00		857	560							1417
09:00		423	424							847
10:00		410	380							790
11:00		495	507							1002
12:00 PM		503	637							1140
01:00		489	544							1033
02:00		536	718							1254
03:00		586	**1005**							**1591**
04:00		578	939							1517
05:00		**599**	866							1465
06:00		495	676							1171
07:00		302	403							705
08:00		256	312							568
09:00		255	331							586
10:00		196	194							390
11:00		99	95							194
Total		10215	10372							20587
Percent		49.6%	50.4%							
AM Peak	-	06:00	06:00	-	-	-	-	-	-	06:00
Vol.	-	1080	584	-	-	-	-	-	-	1664
PM Peak	-	17:00	15:00	-	-	-	-	-	-	15:00
Vol.	-	599	1005	-	-	-	-	-	-	1591
Grand Total		10215	10372							20587
Percent		49.6%	50.4%							
ADT		ADT 20,587		AADT 20,587						

All Traffic Data Services

Wheat Ridge, CO 80033

Site Code: 4
Station ID: 4
E 88TH AVE W/O TAMARAC ST

Start Time	12-Feb-19 Tue	EB	WB							Total
12:00 AM		40	37							77
01:00		51	31							82
02:00		39	45							84
03:00		56	90							146
04:00		74	44							118
05:00		164	124							288
06:00		242	297							539
07:00		**262**	**327**							**589**
08:00		201	275							476
09:00		155	215							370
10:00		168	197							365
11:00		182	229							411
12:00 PM		237	314							551
01:00		284	234							518
02:00		189	247							436
03:00		198	366							564
04:00		226	**606**							**832**
05:00		**303**	430							733
06:00		146	199							345
07:00		119	115							234
08:00		100	107							207
09:00		126	197							323
10:00		153	81							234
11:00		48	42							90
Total		3763	4849							8612
Percent		43.7%	56.3%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	262	327	-	-	-	-	-	-	589
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	303	606	-	-	-	-	-	-	832
Grand Total		3763	4849							8612
Percent		43.7%	56.3%							
ADT		ADT 8,612		AADT 8,612						

All Traffic Data Services Inc.
(303) 216-2439
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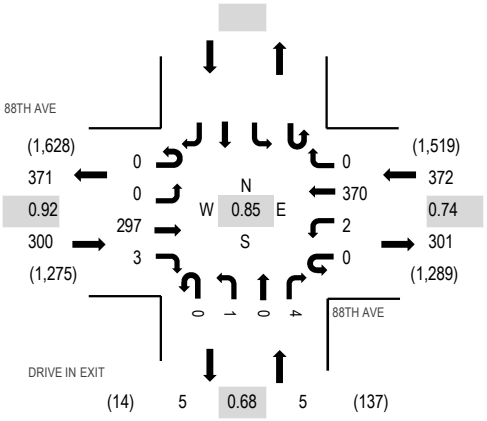
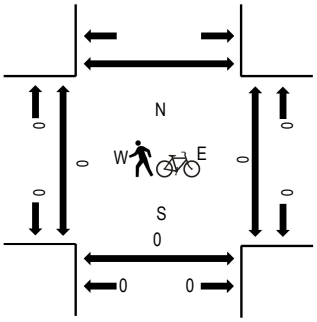
Location: 1 DRIVE IN EXIT & 88TH AVE PM
Date: Friday, September 6, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	88TH AVE Eastbound				88TH AVE Westbound				DRIVE IN EXIT Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South North
4:00 PM	0	0	64	1	0	2	56	0	0	1	0	0					124	572	0	1	0
4:15 PM	0	0	70	0	0	0	74	0	0	0	0	0					144	594	0	0	0
4:30 PM	0	0	84	0	2	2	71	0	0	0	0	1					160	630	0	0	0
4:45 PM	0	0	77	1	1	0	65	0	0	0	0	0					144	668	0	0	0
5:00 PM	0	0	93	2	0	0	50	0	0	1	0	0					146	677	0	0	0
5:15 PM	0	0	94	0	0	1	84	0	0	0	0	1					180	661	0	0	0
5:30 PM	0	0	60	1	0	1	133	0	0	0	0	3					198	588	0	0	0
5:45 PM	0	0	50	0	0	0	103	0	0	0	0	0					153	483	0	0	0
6:00 PM	0	0	57	0	0	2	71	0	0	0	0	0					130	408	0	0	0
6:15 PM	0	0	42	0	0	0	65	0	0	0	0	0					107	368	0	0	0
6:30 PM	0	0	35	0	0	0	57	0	0	1	0	0					93	336	0	0	0
6:45 PM	0	0	33	0	0	0	45	0	0	0	0	0					78	306	0	0	0
7:00 PM	0	0	42	0	0	0	47	0	0	1	0	0					90	291	0	0	0
7:15 PM	0	0	32	0	0	0	42	0	0	1	0	0					75	270	0	0	0
7:30 PM	2	0	25	0	0	0	36	0	0	0	0	0					63	261	0	0	0
7:45 PM	0	0	28	0	0	0	32	0	0	3	0	0					63	257	0	0	0
8:00 PM	0	0	27	0	0	0	39	0	0	2	0	1					69	261	0	0	0
8:15 PM	0	0	32	0	0	0	31	0	0	2	0	1					66	235	0	0	0
8:30 PM	0	0	24	0	0	0	32	0	0	3	0	0					59	219	0	0	0
8:45 PM	1	0	28	0	1	0	35	0	0	1	0	1					67	213	0	0	0
9:00 PM	1	0	23	0	0	0	18	0	0	1	0	0					43	238	0	0	0
9:15 PM	0	0	20	0	0	0	27	0	0	3	0	0					50	283	0	0	0
9:30 PM	0	0	23	0	0	0	29	0	0	1	0	0					53	325	0	0	0
9:45 PM	1	0	38	0	0	0	50	0	0	2	0	1					92	358	0	0	0
10:00 PM	2	0	27	1	0	0	49	0	0	9	0	0					88	320	0	0	0
10:15 PM	0	0	43	0	0	0	46	0	0	2	0	1					92	286	0	0	0
10:30 PM	0	0	33	0	0	0	47	0	0	5	0	1					86	242	0	0	0
10:45 PM	0	0	11	0	0	0	27	0	0	13	0	3					54	185	0	0	0
11:00 PM	0	0	10	0	0	0	18	0	0	21	0	5					54	164	0	0	0
11:15 PM	0	0	19	0	0	0	11	0	0	16	0	2					48		0	0	0
11:30 PM	0	0	10	0	0	0	8	0	0	11	0	0					29		0	0	0
11:45 PM	0	0	8	0	0	0	9	0	0	14	0	2					33		0	0	0
Count Total	7	0	1,262	6	4	8	1,507	0	0	114	0	23					2,931		0	1	0
Peak Hour	0	0	297	3	0	2	370	0	0	1	0	4					677		0	0	0

All Traffic Data Services Inc.
(303) 216-2439
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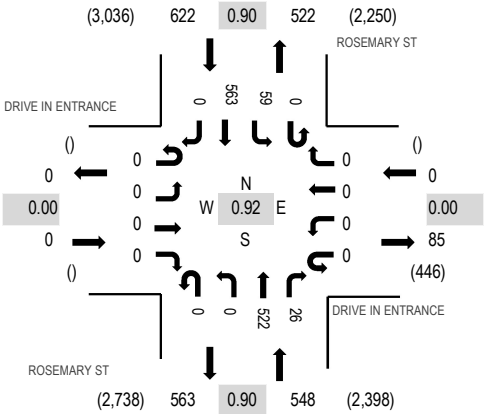
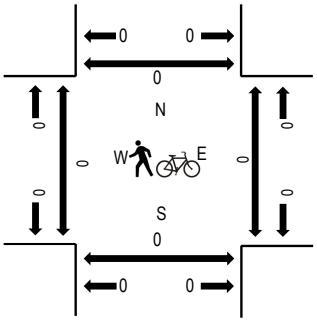
Location: 2 ROSEMARY ST & DRIVE IN ENTRANCE PM
Date: Friday, September 6, 2019
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 06:00 PM - 06:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



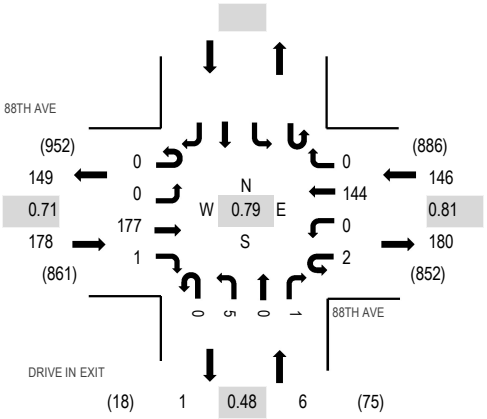
Traffic Counts

Interval Start Time	DRIVE IN ENTRANCE Eastbound				DRIVE IN ENTRANCE Westbound				ROSEMARY ST Northbound				ROSEMARY ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	0	0	0	0	0	76	0	0	0	163	0	239	918	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	85	2	0	0	159	0	246	933	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	53	1	0	1	146	0	201	947	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	93	3	0	3	133	0	232	1,040	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	67	3	0	2	182	0	254	1,078	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	67	2	0	9	182	0	260	1,141	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	113	1	0	16	164	0	294	1,170	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	132	7	0	8	123	0	270	1,143	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	142	12	0	15	148	0	317	1,134	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	135	6	0	20	128	0	289	1,071	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	107	11	0	20	129	0	267	985	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	110	13	0	23	115	0	261	890	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	99	17	0	20	118	0	254	773	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	74	15	0	35	79	0	203	658	0	0	0	1
7:30 PM	0	0	0	0	0	0	0	0	0	0	70	4	0	15	83	0	172	575	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	55	7	0	10	72	0	144	518	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	51	8	0	11	69	0	139	496	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	52	3	0	15	50	0	120	483	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	48	2	0	13	52	0	115	485	0	1	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	51	4	1	11	55	0	122	489	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	64	2	0	5	55	0	126	515	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	50	8	0	18	46	0	122	472	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	63	10	0	9	37	0	119	439	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	92	5	1	5	45	0	148	406	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	41	1	0	8	33	0	83	327	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	58	3	0	3	25	0	89	292	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	51	0	0	0	35	0	86	266	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	41	0	0	0	28	0	69	225	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	27	0	0	0	21	0	48	193	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	32	0	0	0	31	0	63		0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	31	0	0	0	14	0	45		0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	1	18	0	37		0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	2,248	150	2	296	2,738	0	5,434		0	1	0	1
Peak Hour	0	0	0	0	0	0	0	0	0	0	522	26	0	59	563	0	1,170		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

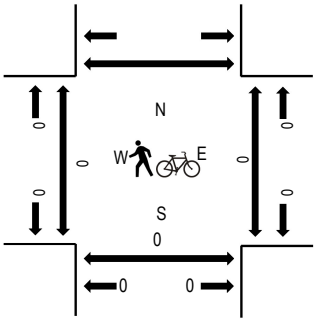
Location: 1 DRIVE IN EXIT & 88TH AVE PM
Date: Saturday, September 7, 2019
Peak Hour: 07:00 PM - 08:00 PM
Peak 15-Minutes: 07:45 PM - 08:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



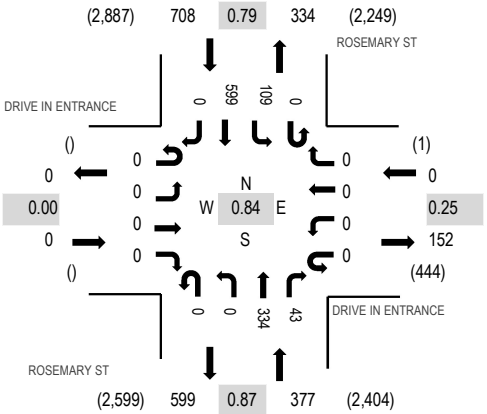
Traffic Counts

Interval Start Time	88TH AVE Eastbound				88TH AVE Westbound				DRIVE IN EXIT Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South North
4:00 PM	0	0	23	0	0	0	33	0	0	0	0	0					56	234	0	0	0
4:15 PM	0	0	41	0	0	0	26	0	0	0	0	0					67	259	0	0	0
4:30 PM	0	0	30	1	0	0	27	0	0	1	0	0					59	297	0	0	0
4:45 PM	0	0	24	1	0	0	26	0	0	1	0	0					52	305	0	0	0
5:00 PM	0	0	33	2	0	2	42	0	0	1	0	1					81	311	0	0	0
5:15 PM	2	0	47	4	0	0	50	0	0	2	0	0					105	305	0	0	0
5:30 PM	0	0	26	1	0	0	40	0	0	0	0	0					67	267	0	0	0
5:45 PM	0	0	30	1	0	0	27	0	0	0	0	0					58	251	0	0	1
6:00 PM	0	0	30	1	0	0	43	0	0	0	0	1					75	262	0	0	0
6:15 PM	0	0	31	0	0	0	34	0	0	2	0	0					67	284	0	0	0
6:30 PM	0	0	23	0	0	0	27	0	0	1	0	0					51	298	0	0	0
6:45 PM	0	0	36	0	0	0	30	0	0	1	0	2					69	295	0	0	0
7:00 PM	0	0	60	0	1	0	36	0	0	0	0	0					97	330	0	0	0
7:15 PM	0	0	41	0	1	0	38	0	0	1	0	0					81	300	0	0	0
7:30 PM	0	0	14	0	0	0	31	0	0	3	0	0					48	288	0	0	0
7:45 PM	0	0	62	1	0	0	39	0	0	1	0	1					104	281	0	0	0
8:00 PM	2	0	34	0	0	0	30	0	0	0	0	1					67	219	0	0	1
8:15 PM	0	0	27	0	0	0	42	0	0	0	0	0					69	195	0	0	0
8:30 PM	0	0	26	0	0	0	15	0	0	0	0	0					41	169	0	0	0
8:45 PM	0	0	23	0	0	0	19	0	0	0	0	0					42	175	0	0	0
9:00 PM	1	0	23	0	0	0	18	0	0	0	0	1					43	188	0	0	0
9:15 PM	0	0	17	0	1	0	24	0	0	1	0	0					43	204	0	0	0
9:30 PM	1	0	24	0	0	1	21	0	0	0	0	0					47	205	0	0	0
9:45 PM	4	0	14	2	0	0	29	0	0	5	0	1					55	192	0	0	0
10:00 PM	0	0	18	0	0	0	26	0	0	13	0	2					59	164	0	0	0
10:15 PM	0	0	11	0	0	0	30	0	0	3	0	0					44	130	0	0	0
10:30 PM	0	0	16	0	0	0	13	0	0	4	0	1					34	112	0	0	0
10:45 PM	0	0	7	0	0	0	18	0	0	2	0	0					27	114	0	0	0
11:00 PM	0	0	10	1	0	0	12	0	0	2	0	0					25	114	0	0	0
11:15 PM	0	0	10	0	0	0	13	0	0	2	0	1					26		0	0	0
11:30 PM	0	0	13	0	0	0	12	0	0	10	0	1					36		0	0	0
11:45 PM	0	0	12	0	0	0	9	0	0	6	0	0					27		0	0	0
Count Total	10	0	836	15	3	3	880	0	0	62	0	13					1,822		0	0	2
Peak Hour	0	0	177	1	2	0	144	0	0	5	0	1					330		0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

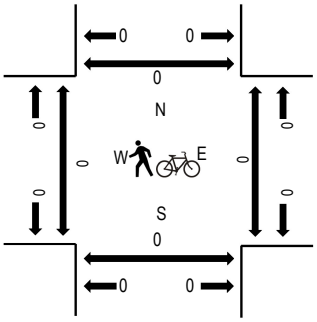
Location: 2 ROSEMARY ST & DRIVE IN ENTRANCE PM
Date: Saturday, September 7, 2019
Peak Hour: 05:30 PM - 06:30 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

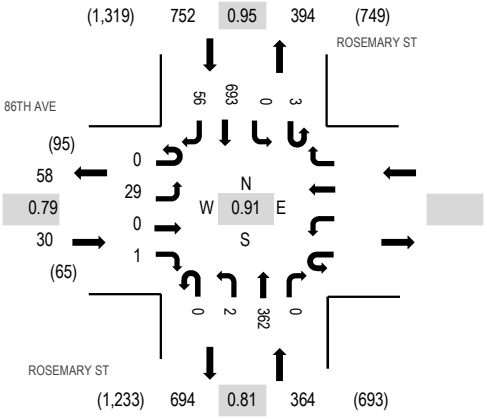
Interval Start Time	DRIVE IN ENTRANCE Eastbound				DRIVE IN ENTRANCE Westbound				ROSEMARY ST Northbound				ROSEMARY ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	0	0	0	0	0	87	0	0	1	114	0	202	918	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	76	4	0	6	128	0	214	966	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	97	5	0	6	136	0	245	965	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	93	3	0	10	151	0	257	980	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	87	25	0	5	133	0	250	1,045	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	54	7	1	15	136	0	213	1,047	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	94	9	0	22	135	0	260	1,085	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	92	7	0	34	189	0	322	1,051	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	74	16	0	30	132	0	252	912	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	74	11	0	23	143	0	251	778	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	66	9	0	41	110	0	226	586	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	45	12	0	46	80	0	183	495	0	5	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	56	18	0	20	24	0	118	560	0	4	1	2
7:15 PM	0	0	0	0	0	0	0	0	0	0	20	15	0	15	9	0	59	601	0	4	0	1
7:30 PM	0	0	0	0	0	0	0	0	0	0	72	17	0	12	34	0	135	717	0	2	0	1
7:45 PM	0	0	0	0	0	0	0	0	0	0	114	0	0	0	134	0	248	708	0	6	1	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	78	0	0	0	81	0	159	577	0	6	0	7
8:15 PM	0	0	0	0	0	0	0	0	0	0	90	0	0	0	85	0	175	579	0	1	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	60	0	0	0	66	0	126	582	0	0	0	2
8:45 PM	0	0	0	0	0	0	0	0	0	0	59	0	0	0	58	0	117	615	0	2	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	80	0	0	0	81	0	161	616	0	8	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	103	0	0	0	75	0	178	563	0	3	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	80	0	0	0	79	0	159	544	0	6	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	66	0	0	0	52	0	118	533	0	8	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	63	0	0	0	45	0	108	486	0	2	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	122	0	0	0	37	0	159	431	0	0	0	2
10:30 PM	0	0	0	0	0	0	0	0	0	0	115	0	0	0	33	0	148	322	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	44	0	0	0	27	0	71	211	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	31	0	0	0	22	0	53	178	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	0	26	0	50		0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	15	0	0	0	22	0	37		0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	15	0	1	0	22	0	38		0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	2,246	158	2	286	2,599	0	5,292		0	57	2	15
Peak Hour	0	0	0	0	0	0	0	0	0	0	334	43	0	109	599	0	1,085		0	0	0	0

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

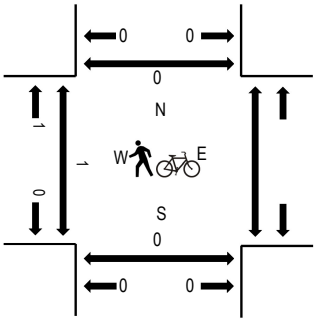
Location: 1 ROSEMARY ST & 86TH AVE AM
Date: Wednesday, August 28, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

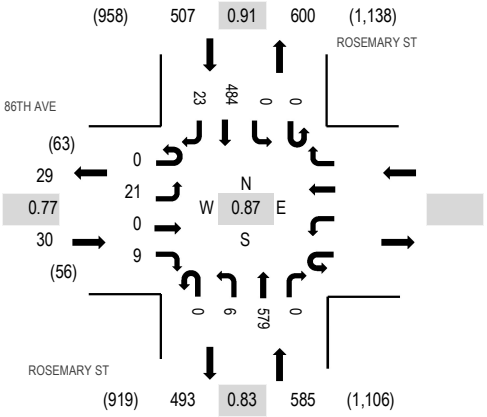
Interval Start Time	86TH AVE Eastbound				Westbound				ROSEMARY ST Northbound				ROSEMARY ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	9	0	0					0	1	85	0	0	0	131	13	239	1,111	0		0	0
7:15 AM	0	5	0	1					0	0	88	0	0	0	178	19	291	1,146	0		0	0
7:30 AM	0	8	0	0					0	0	114	0	0	0	183	10	315	1,125	1		0	0
7:45 AM	0	7	0	0					0	2	81	0	3	0	164	9	266	1,045	0		0	0
8:00 AM	0	9	0	0					0	0	79	0	0	0	168	18	274	966	0		0	0
8:15 AM	0	10	0	0					0	1	92	0	0	0	160	7	270		0		0	0
8:30 AM	0	11	0	1					0	1	78	0	0	0	140	4	235		0		0	0
8:45 AM	0	1	0	3					0	2	69	0	0	0	104	8	187		0		0	0
Count Total	0	60	0	5					0	7	686	0	3	0	1,228	88	2,077		1		0	0
Peak Hour	0	29	0	1					0	2	362	0	3	0	693	56	1,146		1		0	0

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

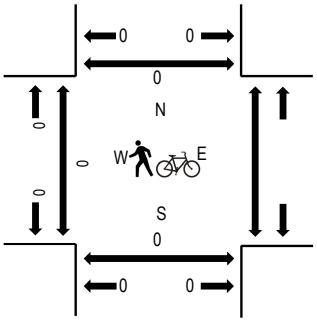
Location: 1 ROSEMARY ST & 86TH AVE PM
Date: Wednesday, August 28, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	86TH AVE Eastbound				Westbound				ROSEMARY ST Northbound				ROSEMARY ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	5	0	1					0	1	130	0	0	0	84	9	230	998	0		0	1
4:15 PM	0	4	0	2					0	0	144	0	0	0	126	7	283	1,089	0		0	0
4:30 PM	0	4	0	1					0	0	119	0	0	0	113	2	239	1,046	0		0	0
4:45 PM	0	7	0	2					0	2	125	0	0	0	97	13	246	1,084	0		0	0
5:00 PM	0	8	0	3					0	0	176	0	0	0	127	7	321	1,122	0		0	0
5:15 PM	0	7	0	1					0	2	120	0	0	0	103	7	240		0		0	0
5:30 PM	0	4	0	2					0	2	129	0	0	0	133	7	277		0		0	0
5:45 PM	0	2	0	3					0	2	154	0	0	0	121	2	284		0		0	0
Count Total	0	41	0	15					0	9	1,097	0	0	0	904	54	2,120		0		0	1
Peak Hour	0	21	0	9					0	6	579	0	0	0	484	23	1,122		0		0	0

All Traffic Data Sevices

www.alltrafficdata.net

Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/27/19	0	23	3	0	1	0	0	1	1	0	0	0	0	29
01:00	0	26	3	0	0	0	0	1	0	0	0	0	0	30
02:00	0	26	3	0	0	0	0	0	2	0	0	0	0	31
03:00	0	35	1	0	0	0	0	2	0	0	0	0	0	38
04:00	0	37	9	0	1	0	0	1	0	0	0	0	0	48
05:00	1	128	9	0	4	0	0	5	1	0	0	0	0	148
06:00	1	**281**	41	0	5	**3**	0	3	1	0	0	0	0	335
07:00	**3**	279	**44**	**1**	**22**	3	0	9	1	0	0	0	0	**362**
08:00	1	237	31	0	3	0	0	11	2	0	0	0	0	285
09:00	1	211	42	1	7	2	0	**15**	2	0	**1**	**1**	0	283
10:00	0	190	36	1	5	2	0	8	**4**	0	0	0	**1**	247
11:00	3	195	44	0	7	1	0	6	3	0	0	0	0	259
12 PM	1	257	47	**2**	**12**	**4**	0	9	1	0	0	0	0	333
13:00	1	228	48	1	8	2	0	8	**2**	0	0	0	0	298
14:00	0	385	**68**	1	9	1	0	**11**	1	0	0	0	0	476
15:00	1	**424**	58	1	6	2	0	5	2	0	0	**1**	**1**	**501**
16:00	**4**	353	47	1	0	2	0	3	0	0	0	0	0	410
17:00	4	308	33	1	2	0	0	1	0	**1**	0	0	0	350
18:00	2	411	56	1	2	3	0	1	2	0	0	0	0	478
19:00	0	286	24	0	3	0	0	2	0	0	0	0	0	315
20:00	1	173	21	0	1	0	0	1	0	0	0	0	0	197
21:00	1	146	12	0	3	0	0	1	1	0	0	0	0	164
22:00	0	120	3	0	1	0	0	0	1	0	0	0	0	125
23:00	0	72	6	0	1	0	0	2	1	0	0	0	0	82
Day Total	25	4831	689	11	103	25	0	106	28	1	1	2	2	5824
Percent	0.4%	82.9%	11.8%	0.2%	1.8%	0.4%	0.0%	1.8%	0.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	06:00	07:00	07:00	07:00	06:00		09:00	10:00		09:00	09:00	10:00	07:00
Vol.	3	281	44	1	22	3		15	4		1	1	1	362
PM Peak	16:00	15:00	14:00	12:00	12:00	12:00		14:00	13:00	17:00		15:00	15:00	15:00
Vol.	4	424	68	2	12	4		11	2	1		1	1	501

All Traffic Data Sevices
www.alltrafficdata.net

Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/28/19	0	31	1	0	0	0	0	0	0	0	0	0	0	32
01:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
02:00	0	18	2	0	1	1	0	0	0	0	0	0	0	22
03:00	0	23	4	0	0	0	0	0	0	0	0	0	0	27
04:00	0	48	5	0	0	0	0	0	0	0	0	0	0	53
05:00	1	145	14	0	2	1	0	2	1	**1**	0	0	0	167
06:00	**3**	**307**	34	0	6	**3**	0	4	0	0	0	0	0	357
07:00	1	288	45	**1**	**12**	0	0	**14**	0	1	0	0	0	**362**
08:00	0	268	**47**	0	6	3	0	8	0	0	0	0	0	332
09:00	2	199	37	0	10	1	0	14	1	0	0	0	0	264
10:00	0	208	38	1	10	2	0	12	**5**	0	0	0	0	276
11:00	3	246	22	0	12	2	0	6	1	0	0	0	0	292
12 PM	1	262	**52**	0	**9**	0	0	**8**	1	0	0	0	0	333
13:00	4	219	32	**1**	8	**3**	0	5	1	0	0	0	0	273
14:00	0	401	46	0	3	2	0	2	0	0	0	0	0	454
15:00	**5**	482	38	0	9	2	0	3	**2**	0	0	0	0	541
16:00	1	**524**	31	1	1	1	0	3	1	0	0	0	0	563
17:00	4	512	49	0	5	2	0	3	0	0	0	0	0	**575**
18:00	3	397	36	0	3	0	0	1	1	**1**	0	0	0	442
19:00	1	282	19	1	4	0	0	2	0	0	0	0	0	309
20:00	0	244	11	0	2	0	0	1	0	0	0	0	0	258
21:00	0	148	6	0	4	0	0	4	0	0	0	0	0	162
22:00	0	103	4	0	2	0	0	2	1	0	0	0	0	112
23:00	0	63	2	0	1	0	0	0	2	0	0	0	0	68
Day Total	29	5439	577	5	110	23	0	94	17	3	0	0	0	6297
Percent	0.5%	86.4%	9.2%	0.1%	1.7%	0.4%	0.0%	1.5%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	06:00	08:00	07:00	07:00	06:00		07:00	10:00	05:00				07:00
Vol.	3	307	47	1	12	3		14	5	1				362
PM Peak	15:00	16:00	12:00	13:00	12:00	13:00		12:00	15:00	18:00				17:00
Vol.	5	524	52	1	9	3		8	2	1				575

All Traffic Data Sevices
www.alltrafficdata.net

Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/29/19	0	39	1	0	1	0	0	0	0	0	0	0	0	41
01:00	0	19	0	0	2	0	0	0	0	0	0	0	0	21
02:00	0	27	1	0	0	0	0	1	0	0	0	0	0	29
03:00	0	29	2	0	0	0	0	0	1	0	0	0	0	32
04:00	0	47	6	0	0	1	0	0	0	0	0	0	0	54
05:00	0	127	14	0	4	0	0	1	1	0	0	0	0	147
06:00	3	**313**	**45**	0	1	1	0	5	0	**1**	0	0	0	**369**
07:00	3	303	35	0	4	**3**	0	6	2	0	0	0	0	356
08:00	**4**	272	44	1	**15**	1	0	1	2	0	0	0	0	340
09:00	1	201	32	0	11	1	0	**8**	**3**	0	0	0	0	257
10:00	4	191	30	0	9	3	0	4	2	0	0	0	0	243
11:00	3	206	27	**2**	9	3	0	7	0	0	0	0	0	257
12 PM	**4**	278	**54**	0	**6**	1	0	2	1	0	0	0	0	346
13:00	2	295	52	**3**	5	1	0	**5**	**4**	0	**1**	0	0	368
14:00	2	450	47	0	5	1	0	3	0	0	0	0	0	**508**
15:00	1	351	25	1	5	**2**	0	4	0	**1**	0	0	0	390
16:00	1	**457**	36	0	3	2	0	4	0	0	0	0	**2**	505
17:00	4	422	25	0	1	1	0	3	2	1	0	0	0	459
18:00	3	407	43	0	3	1	0	3	0	0	0	0	0	460
19:00	0	338	23	0	4	1	0	1	0	1	0	0	0	368
20:00	0	231	11	2	3	0	0	2	0	0	0	0	0	249
21:00	0	130	13	0	3	0	0	2	0	0	0	0	0	148
22:00	0	117	9	0	1	0	0	1	0	0	0	0	0	128
23:00	0	73	7	0	2	0	0	1	0	0	0	0	0	83
Day Total	35	5323	582	9	97	23	0	64	18	4	1	0	2	6158
Percent	0.6%	86.4%	9.5%	0.1%	1.6%	0.4%	0.0%	1.0%	0.3%	0.1%	0.0%	0.0%	0.0%	
AM Peak	08:00	06:00	06:00	11:00	08:00	07:00		09:00	09:00	06:00				06:00
Vol.	4	313	45	2	15	3		8	3	1				369
PM Peak	12:00	16:00	12:00	13:00	12:00	15:00		13:00	13:00	15:00	13:00		16:00	14:00
Vol.	4	457	54	3	6	2		5	4	1	1		2	508
Grand Total	89	15593	1848	25	310	71	0	264	63	8	2	2	4	18279
Percent	0.5%	85.3%	10.1%	0.1%	1.7%	0.4%	0.0%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data Sevices
www.alltrafficdata.net

Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/27/19	1	22	0	0	0	0	0	1	0	0	0	0	0	24
01:00	2	24	2	0	0	2	0	0	1	0	0	0	0	31
02:00	0	21	3	0	0	0	0	0	0	0	0	0	0	24
03:00	0	59	0	0	0	0	0	1	0	0	0	0	0	60
04:00	0	85	8	0	1	0	0	3	1	0	0	0	0	98
05:00	0	364	16	0	4	1	0	0	1	0	0	0	0	386
06:00	0	**613**	**55**	0	10	1	0	4	0	0	0	0	0	**683**
07:00	1	534	35	0	**11**	1	0	**8**	1	0	0	0	0	591
08:00	**4**	469	35	0	9	4	0	8	**3**	0	0	**1**	0	533
09:00	2	251	35	0	9	**5**	0	7	3	0	0	0	0	312
10:00	0	250	33	0	4	5	0	6	2	0	0	0	0	300
11:00	2	226	21	**1**	4	4	0	4	1	**1**	0	0	0	264
12 PM	2	265	25	1	11	**7**	0	**13**	**4**	0	0	0	0	328
13:00	2	255	26	**2**	**14**	5	0	13	3	0	0	0	0	320
14:00	2	327	26	0	5	2	0	7	0	0	0	0	0	369
15:00	0	**416**	**32**	0	9	1	0	7	2	0	0	0	0	**467**
16:00	2	310	32	1	6	2	0	1	2	0	0	0	0	356
17:00	**3**	273	23	0	5	0	0	2	0	0	0	0	0	306
18:00	1	361	31	0	10	1	0	2	0	0	0	0	0	406
19:00	0	228	18	0	1	1	0	0	0	0	0	0	0	248
20:00	1	177	17	1	0	0	0	2	0	0	0	0	0	198
21:00	0	135	6	0	0	0	0	1	0	0	0	0	0	142
22:00	1	79	4	0	1	1	0	2	0	0	0	0	0	88
23:00	0	42	2	0	0	0	0	1	0	0	0	0	0	45
Day Total	26	5786	485	6	114	43	0	93	24	1	0	1	0	6579
Percent	0.4%	87.9%	7.4%	0.1%	1.7%	0.7%	0.0%	1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	06:00	06:00	11:00	07:00	09:00		07:00	08:00	11:00		08:00		06:00
Vol.	4	613	55	1	11	5		8	3	1		1		683
PM Peak	17:00	15:00	15:00	13:00	13:00	12:00		12:00	12:00					15:00
Vol.	3	416	32	2	14	7		13	4					467

All Traffic Data Sevices
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Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/28/19	0	17	2	0	0	0	0	1	0	0	0	0	0	20
01:00	1	14	0	0	0	2	0	0	0	0	0	0	0	17
02:00	1	16	1	0	0	1	0	1	0	0	0	0	0	20
03:00	1	63	1	0	2	0	0	0	0	0	0	0	0	67
04:00	2	98	3	0	1	2	0	1	0	1	0	0	0	108
05:00	2	382	29	0	4	**4**	0	2	0	1	0	0	**1**	425
06:00	**4**	**613**	**57**	0	4	1	0	7	1	0	0	0	0	**687**
07:00	2	554	49	0	5	1	0	4	1	1	0	**1**	0	618
08:00	3	517	55	0	**6**	4	0	**9**	1	**2**	0	0	0	597
09:00	2	248	36	0	6	1	0	7	**6**	0	0	0	0	306
10:00	1	233	28	**1**	3	2	0	9	3	0	**1**	0	0	281
11:00	0	214	26	1	4	3	0	9	4	0	0	0	0	261
12 PM	2	269	23	**1**	9	0	0	6	**2**	0	0	0	0	312
13:00	3	256	17	1	6	**3**	0	**9**	1	0	0	0	0	296
14:00	1	322	28	0	9	2	0	9	1	0	0	0	0	372
15:00	**4**	395	33	0	8	2	0	5	2	**1**	0	0	0	450
16:00	0	420	25	0	**11**	1	0	7	0	1	0	0	0	465
17:00	2	**448**	26	0	9	2	0	3	1	0	0	0	0	**491**
18:00	3	414	**41**	0	5	3	0	4	2	1	0	0	0	473
19:00	0	247	21	0	2	0	0	2	0	0	0	0	0	272
20:00	1	188	10	0	3	1	0	3	0	0	0	0	0	206
21:00	0	157	4	0	2	0	0	1	0	0	0	0	0	164
22:00	0	79	3	0	1	0	0	1	0	0	0	0	0	84
23:00	0	52	0	0	2	1	0	0	0	0	0	0	0	55
Day Total	35	6216	518	4	102	36	0	100	25	8	1	1	1	7047
Percent	0.5%	88.2%	7.4%	0.1%	1.4%	0.5%	0.0%	1.4%	0.4%	0.1%	0.0%	0.0%	0.0%	
AM Peak	06:00	06:00	06:00	10:00	08:00	05:00		08:00	09:00	08:00	10:00	07:00	05:00	06:00
Vol.	4	613	57	1	6	4		9	6	2	1	1	1	687
PM Peak	15:00	17:00	18:00	12:00	16:00	13:00		13:00	12:00	15:00				17:00
Vol.	4	448	41	1	11	3		9	2	1				491

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Site Code: 4
Station ID: 4
ROSEMARY ST S.O. 86TH AVE

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/29/19	0	20	2	0	0	0	0	1	1	0	0	0	0	24
01:00	0	11	1	0	1	1	0	0	0	0	0	0	**1**	15
02:00	0	16	1	0	1	0	0	3	0	0	0	0	0	21
03:00	0	61	1	0	1	0	0	1	0	0	0	0	0	64
04:00	0	95	3	0	5	0	0	0	0	0	0	0	0	103
05:00	1	385	32	0	3	0	0	2	0	0	0	0	0	423
06:00	2	**679**	**60**	0	8	1	0	8	0	0	0	0	0	**758**
07:00	**5**	503	38	1	2	2	0	7	2	0	0	0	1	561
08:00	3	465	40	**2**	**9**	1	0	12	**5**	0	0	0	0	537
09:00	0	234	26	0	9	3	0	10	5	0	**1**	0	0	288
10:00	2	224	22	1	5	2	0	7	1	0	0	0	0	264
11:00	1	243	28	0	5	**7**	0	**14**	3	0	0	0	0	301
12 PM	0	255	28	0	9	**6**	0	7	**3**	0	0	0	0	308
13:00	1	239	27	0	7	2	0	**11**	0	0	0	0	0	287
14:00	1	318	18	0	12	3	0	8	0	0	0	0	0	360
15:00	0	327	24	0	8	3	**1**	4	2	0	0	0	0	369
16:00	1	**415**	**40**	0	**15**	1	0	7	0	0	0	0	0	**479**
17:00	**6**	390	27	0	5	2	0	4	0	0	0	0	0	434
18:00	2	410	38	1	5	2	0	2	0	0	0	0	0	460
19:00	2	303	24	1	2	1	0	5	0	0	0	0	0	338
20:00	0	184	13	0	4	1	0	1	0	0	0	0	0	203
21:00	0	133	4	0	1	1	0	3	0	0	0	0	0	142
22:00	0	90	2	**2**	1	0	0	1	0	0	0	0	0	96
23:00	0	56	3	0	2	0	0	0	0	0	0	0	0	61
Day Total	27	6056	502	8	120	39	1	118	22	0	1	0	2	6896
Percent	0.4%	87.8%	7.3%	0.1%	1.7%	0.6%	0.0%	1.7%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	06:00	06:00	08:00	08:00	11:00		11:00	08:00		09:00		01:00	06:00
Vol.	5	679	60	2	9	7		14	5		1		1	758
PM Peak	17:00	16:00	16:00	22:00	16:00	12:00	15:00	13:00	12:00					16:00
Vol.	6	415	40	2	15	6	1	11	3					479
Grand Total	88	18058	1505	18	336	118	1	311	71	9	2	2	3	20522
Percent	0.4%	88.0%	7.3%	0.1%	1.6%	0.6%	0.0%	1.5%	0.3%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data Services Inc.

(303) 216-2439
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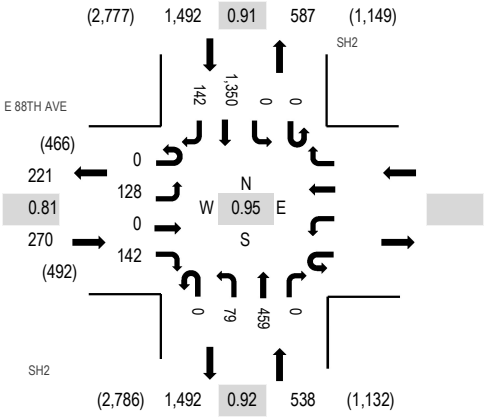
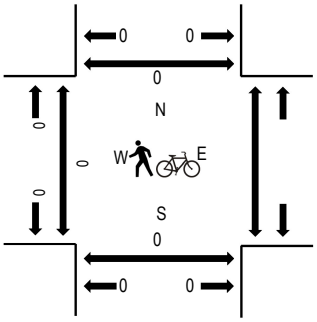
Location: 1 SH2 & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				Westbound				SH2 Northbound				SH2 Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	16	0	15					0	20	111	0	0	0	338	25	525	2,183	0		0	0
6:45 AM	0	8	0	15					0	36	114	0	0	0	337	32	542	2,235	0		0	0
7:00 AM	0	19	0	31					0	17	93	0	0	0	390	28	578	2,300	0		0	0
7:15 AM	0	16	0	17					0	19	128	0	0	0	338	20	538	2,271	0		0	0
7:30 AM	0	44	0	34					0	16	104	0	0	0	333	46	577	2,218	0		0	0
7:45 AM	0	49	0	60					0	27	134	0	0	0	289	48	607		0		0	0
8:00 AM	0	26	0	62					0	34	128	0	0	0	247	52	549		0		0	0
8:15 AM	0	25	0	55					0	17	134	0	0	0	225	29	485		0		0	0
Count Total	0	203	0	289					0	186	946	0	0	0	2,497	280	4,401		0		0	0
Peak Hour	0	128	0	142					0	79	459	0	0	0	1,350	142	2,300		0		0	0

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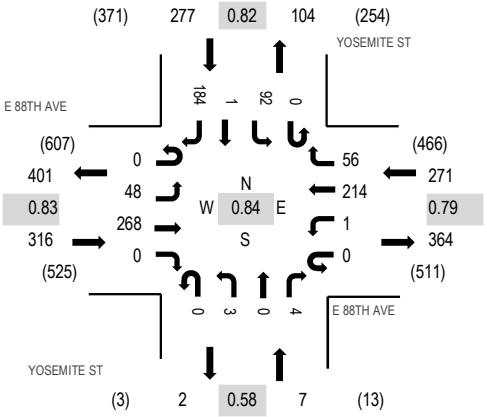
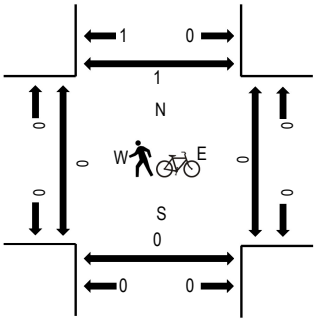
Location: 2 YOSEMITE ST & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				YOSEMITE ST Northbound				YOSEMITE ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	25	26	0	0	0	31	14	0	0	0	1	0	5	0	13	115	504	0	0	0	0
6:45 AM	0	21	18	0	0	0	47	19	0	0	0	2	0	4	0	14	125	578	0	0	0	0
7:00 AM	0	22	41	0	0	0	31	13	0	0	0	1	0	8	1	22	139	711	0	0	0	0
7:15 AM	0	22	34	0	0	0	26	14	0	1	0	1	0	6	0	21	125	824	0	0	0	0
7:30 AM	0	8	61	0	0	0	50	10	0	0	0	1	0	19	1	39	189	871	0	0	0	0
7:45 AM	0	14	81	0	0	1	61	17	0	2	0	1	0	30	0	51	258		0	0	0	1
8:00 AM	0	12	70	0	0	0	67	19	0	0	0	0	0	25	0	59	252		0	0	0	0
8:15 AM	0	14	56	0	0	0	36	10	0	1	0	2	0	18	0	35	172		0	0	0	0
Count Total	0	138	387	0	0	1	349	116	0	4	0	9	0	115	2	254	1,375		0	0	0	1
Peak Hour	0	48	268	0	0	1	214	56	0	3	0	4	0	92	1	184	871		0	0	0	1

All Traffic Data Services Inc.

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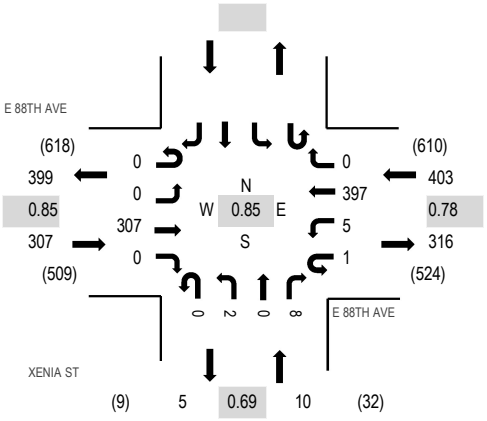
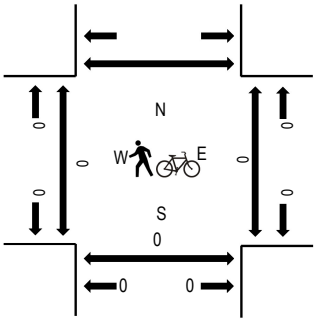
Location: 3 XENIA ST & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				XENIA ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	50	0	0	1	44	0	0	4	0	2					101	431	0	0	0	
6:45 AM	0	0	37	0	0	1	58	0	0	5	0	3					104	489	0	0	0	
7:00 AM	0	0	62	0	0	0	54	0	0	1	0	1					118	592	0	0	0	
7:15 AM	0	0	52	1	0	1	48	0	0	5	0	1					108	687	0	0	0	
7:30 AM	0	0	68	0	0	1	89	0	0	0	0	1					159	720	0	0	0	
7:45 AM	0	0	90	0	0	0	112	0	0	0	0	5					207		0	0	0	
8:00 AM	0	0	83	0	0	3	126	0	0	0	0	1					213		0	0	0	
8:15 AM	0	0	66	0	1	1	70	0	0	2	0	1					141		0	0	0	
Count Total	0	0	508	1	1	8	601	0	0	17	0	15					1,151		0	0	0	
Peak Hour	0	0	307	0	1	5	397	0	0	2	0	8					720		0	0	0	

All Traffic Data Services Inc.

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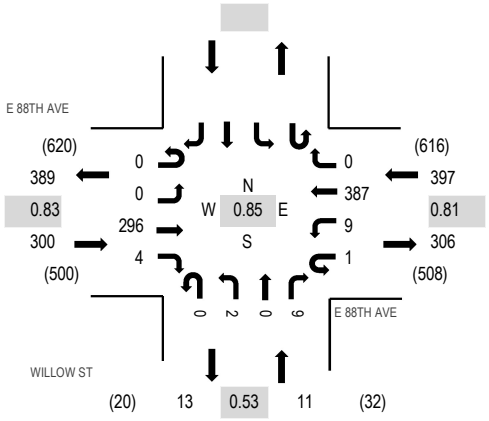
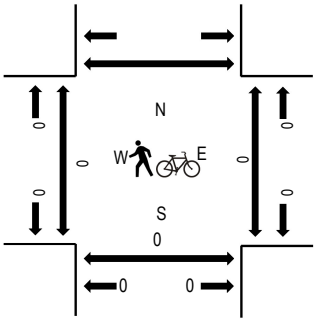
Location: 4 WILLOW ST & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WILLOW ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	50	1	0	1	47	0	0	9	0	1					109	440	0	0	0	
6:45 AM	0	0	33	1	0	2	61	0	0	2	0	2					101	485	0	0	0	
7:00 AM	0	0	62	1	0	0	54	0	0	3	0	1					121	590	0	0	0	
7:15 AM	0	0	52	0	0	1	53	0	0	2	0	1					109	677	0	0	0	
7:30 AM	0	0	66	0	0	0	87	0	0	0	0	1					154	708	0	0	0	
7:45 AM	0	0	89	1	1	3	109	0	0	1	0	2					206		0	0	0	
8:00 AM	0	0	79	2	0	3	120	0	0	1	0	3					208		0	0	0	
8:15 AM	0	0	62	1	0	3	71	0	0	0	0	3					140		0	0	0	
Count Total	0	0	493	7	1	13	602	0	0	18	0	14					1,148		0	0	0	
Peak Hour	0	0	296	4	1	9	387	0	0	2	0	9					708		0	0	0	

All Traffic Data Services Inc.

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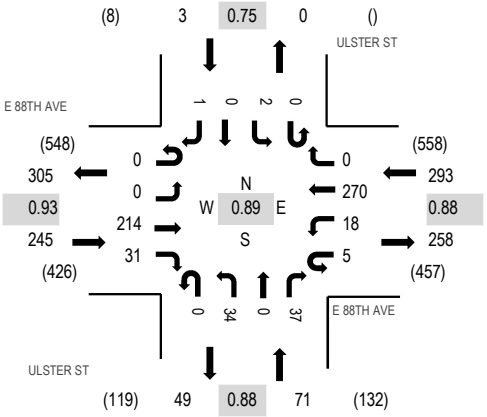
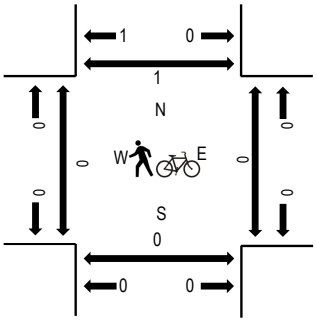
Location: 5 ULSTER ST & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				ULSTER ST Northbound				ULSTER ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	0	49	9	1	10	48	0	0	5	0	3	0	0	0	1	126	537	0	0	0	0
6:45 AM	0	0	36	26	0	7	52	0	0	14	0	2	0	0	0	0	137	577	0	0	0	0
7:00 AM	0	0	53	14	0	4	54	0	0	9	0	7	0	0	0	0	141	612	0	0	0	0
7:15 AM	0	0	50	12	0	5	48	0	0	11	0	6	0	0	0	1	133	604	0	0	0	0
7:30 AM	0	0	53	3	1	4	83	0	0	11	0	11	0	0	0	0	166	587	0	0	0	0
7:45 AM	0	0	58	2	4	5	85	0	0	3	0	13	0	2	0	0	172		0	0	0	1
8:00 AM	0	0	31	0	11	8	59	0	0	3	0	19	0	0	0	2	133		0	0	0	0
8:15 AM	0	0	30	0	2	10	57	0	0	1	0	14	0	1	0	1	116		0	0	0	0
Count Total	0	0	360	66	19	53	486	0	0	57	0	75	0	3	0	5	1,124		0	0	0	1
Peak Hour	0	0	214	31	5	18	270	0	0	34	0	37	0	2	0	1	612		0	0	0	1

All Traffic Data Services Inc.

(303) 216-2439
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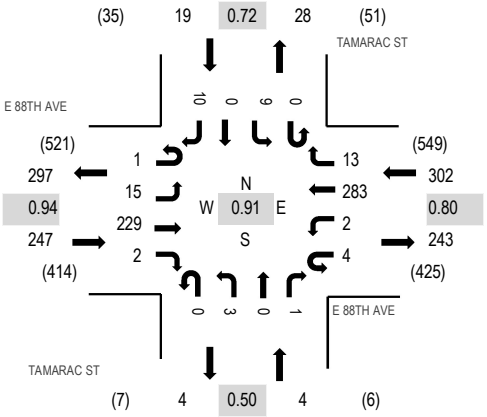
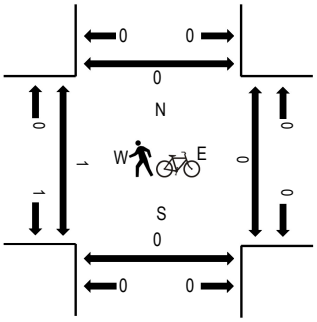
Location: 6 TAMARAC ST & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

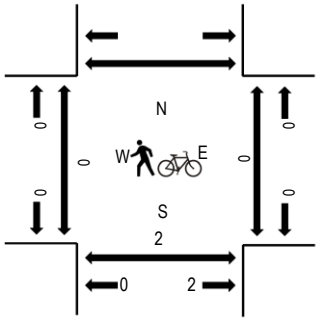
Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				TAMARAC ST Northbound				TAMARAC ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	3	61	0	0	0	59	1	0	0	0	0	0	0	0	1	125	533	0	0	0	0
6:45 AM	0	4	61	0	0	0	62	3	0	0	0	0	0	1	0	3	134	565	0	0	0	0
7:00 AM	0	7	64	1	0	0	59	5	0	1	0	0	0	1	0	3	141	572	0	0	0	0
7:15 AM	1	5	63	0	0	0	59	1	0	1	0	0	0	1	0	2	133	514	1	0	0	0
7:30 AM	0	3	54	1	0	0	92	2	0	1	0	0	0	2	0	2	157	471	0	0	0	0
7:45 AM	0	0	48	0	4	2	73	5	0	0	0	1	0	5	0	3	141		0	0	0	0
8:00 AM	0	0	14	0	8	0	49	5	0	0	0	0	0	5	0	2	83		0	0	0	0
8:15 AM	0	1	23	0	4	3	47	6	0	0	0	2	0	3	0	1	90		0	0	0	0
Count Total	1	23	388	2	16	5	500	28	0	3	0	3	0	18	0	17	1,004		1	0	0	0
Peak Hour	1	15	229	2	4	2	283	13	0	3	0	1	0	9	0	10	572		1	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 7 ROSEMARY ST & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				ROSEMARY ST Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	21	88	4	30	40	0	0	62	0	19					264	1,813	0	0	1	
6:45 AM	0	0	80	232	0	9	111	0	0	103	0	9					544	2,059	0	0	0	
7:00 AM	0	0	80	230	0	10	83	0	0	74	0	11					488	1,985	0	0	0	
7:15 AM	0	0	93	226	0	4	92	0	0	97	0	5					517	1,928	0	0	1	
7:30 AM	0	0	79	198	0	13	109	0	0	99	0	12					510	1,722	0	0	1	
7:45 AM	0	0	84	184	0	13	107	0	0	79	0	3					470		0	0	1	
8:00 AM	0	0	53	200	0	20	59	0	0	85	0	14					431		0	0	0	
8:15 AM	0	0	37	118	0	14	47	0	0	82	0	13					311		0	0	0	
Count Total	0	0	527	1,476	4	113	648	0	0	681	0	86					3,535		0	0	4	
Peak Hour	0	0	332	886	0	36	395	0	0	373	0	37					2,059		0	0	2	

All Traffic Data Services Inc.

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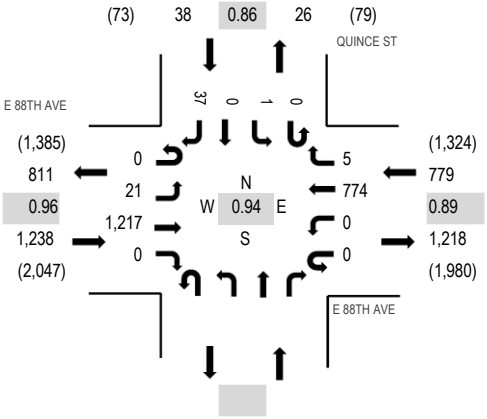
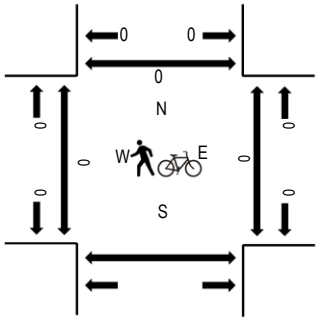
Location: 6 QUINCE ST & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				Northbound				QUINCE ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	6	100	0	0	0	84	1					0	0	0	5	196	1,754	0	0		1
6:45 AM	0	6	312	0	0	0	216	2					0	0	0	10	546	2,055	0	0		0
7:00 AM	0	7	306	0	0	0	159	0					0	1	0	9	482	1,988	0	0		0
7:15 AM	0	4	319	0	0	0	193	3					0	0	0	11	530	1,913	0	0		0
7:30 AM	0	4	280	0	0	0	206	0					0	0	0	7	497	1,690	0	0		0
7:45 AM	1	12	266	0	0	0	191	2					1	0	0	6	479		0	0		0
8:00 AM	0	13	241	0	0	0	142	1					0	1	0	9	407		0	0		0
8:15 AM	1	16	153	0	0	0	123	1					0	1	0	12	307		0	0		0
Count Total	2	68	1,977	0	0	0	1,314	10					1	3	0	69	3,444		0	0		1
Peak Hour	0	21	1,217	0	0	0	774	5					0	1	0	37	2,055		0	0		0

All Traffic Data Services Inc.
(303) 216-2439
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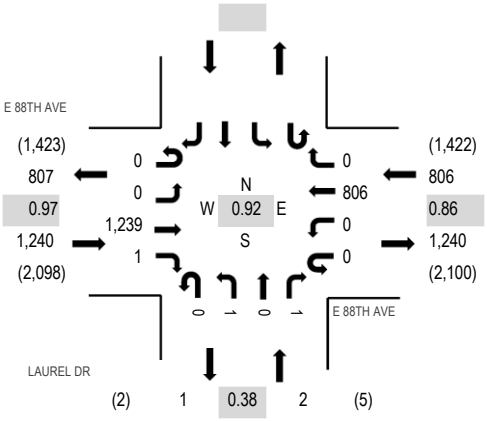
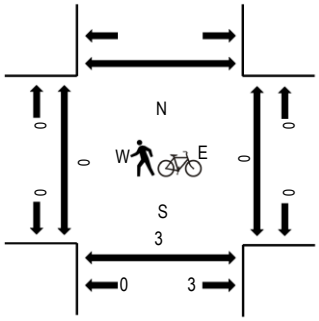
Location: 5 LAUREL DR & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				LAUREL DR Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	149	0	0	0	111	0	0	0	0	0					260	1,809	0	0	1	
6:45 AM	0	0	320	0	0	0	235	0	0	0	0	0					555	2,048	0	0	0	
7:00 AM	0	0	309	0	0	0	165	0	0	1	0	0					475	1,982	0	0	0	
7:15 AM	0	0	318	1	0	0	199	0	0	0	0	1					519	1,908	0	0	2	
7:30 AM	0	0	292	0	0	0	207	0	0	0	0	0					499	1,716	0	0	1	
7:45 AM	0	0	275	0	0	0	214	0	0	0	0	0					489		0	0	1	
8:00 AM	0	0	246	0	0	0	154	0	0	0	0	1					401		0	0	0	
8:15 AM	0	0	187	1	0	0	137	0	0	0	0	2					327		0	0	0	
Count Total	0	0	2,096	2	0	0	1,422	0	0	1	0	4					3,525		0	0	5	
Peak Hour	0	0	1,239	1	0	0	806	0	0	1	0	1					2,048		0	0	3	

All Traffic Data Services Inc.
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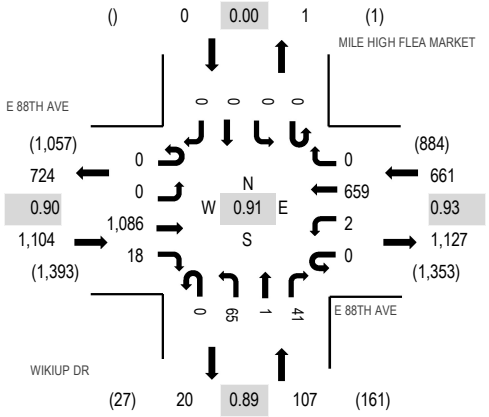
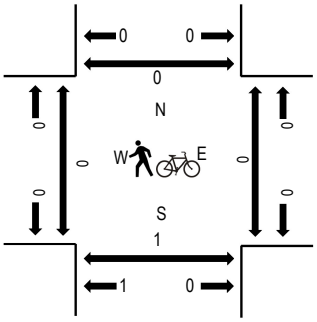
Location: 10 WIKIUP DR & E 88TH AVE AM
Date: Tuesday, October 16, 2018
Peak Hour: 06:30 AM - 07:30 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WIKIUP DR Northbound				MILE HIGH FLEA MARKET Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	254	4	0	1	174	0	0	18	0	12	0	0	0	0	463	1,872	0	0	0	0
6:45 AM	0	0	303	5	0	0	178	0	0	16	1	13	0	0	0	0	516	1,646	0	0	1	0
7:00 AM	0	0	270	6	0	1	151	0	0	20	0	3	0	0	0	0	451	1,251	0	0	0	0
7:15 AM	0	0	259	3	0	0	156	0	0	11	0	13	0	0	0	0	442	908	0	0	0	0
7:30 AM	16	0	123	3	0	0	79	0	0	15	0	1	0	0	0	0	237	566	0	0	0	0
7:45 AM	12	0	40	1	0	0	55	0	0	12	0	1	0	0	0	0	121		0	0	1	0
8:00 AM	13	0	33	2	0	0	45	0	0	14	0	1	0	0	0	0	108		0	0	0	0
8:15 AM	19	0	26	1	0	0	44	0	0	9	0	1	0	0	0	0	100		0	0	0	0
Count Total	60	0	1,308	25	0	2	882	0	0	115	1	45	0	0	0	0	2,438		0	0	2	0
Peak Hour	0	0	1,086	18	0	2	659	0	0	65	1	41	0	0	0	0	1,872		0	0	1	0

All Traffic Data Services Inc.
(303) 216-2439
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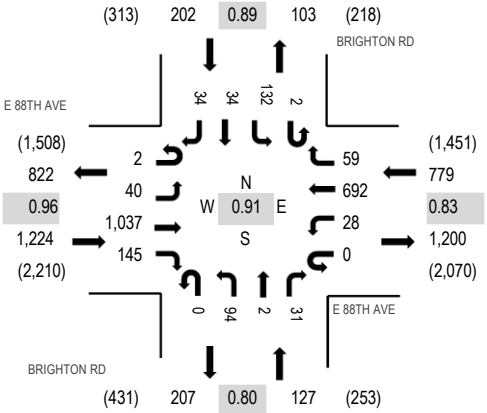
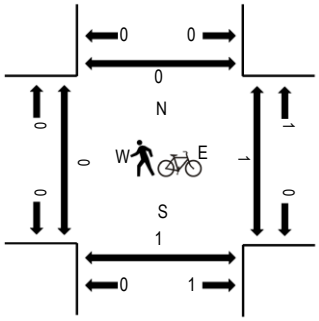
Location: 4 BRIGHTON RD & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				BRIGHTON RD Northbound				BRIGHTON RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	1	24	180	34	0	28	83	28	0	18	2	5	0	20	17	6	446	2,197	1	1	0	1
6:45 AM	1	14	264	41	0	8	207	19	0	20	1	7	0	42	12	4	640	2,332	0	0	0	0
7:00 AM	0	9	255	40	0	6	145	17	0	18	0	5	2	40	12	2	551	2,272	0	0	0	0
7:15 AM	0	6	249	32	0	6	160	12	0	32	1	13	0	33	8	8	560	2,195	0	1	0	0
7:30 AM	1	11	269	32	0	8	180	11	0	24	0	6	0	17	2	20	581	2,030	0	0	1	0
7:45 AM	0	25	231	35	0	11	211	8	0	32	0	7	0	13	3	4	580		0	0	0	0
8:00 AM	0	10	209	32	0	7	147	5	0	26	0	6	0	22	6	4	474		0	0	0	0
8:15 AM	0	2	163	40	0	8	125	11	0	24	0	6	0	8	3	5	395		0	0	0	0
Count Total	3	101	1,820	286	0	82	1,258	111	0	194	4	55	2	195	63	53	4,227		1	2	1	1
Peak Hour	2	40	1,037	145	0	28	692	59	0	94	2	31	2	132	34	34	2,332		0	1	1	0

All Traffic Data Services Inc.
(303) 216-2439
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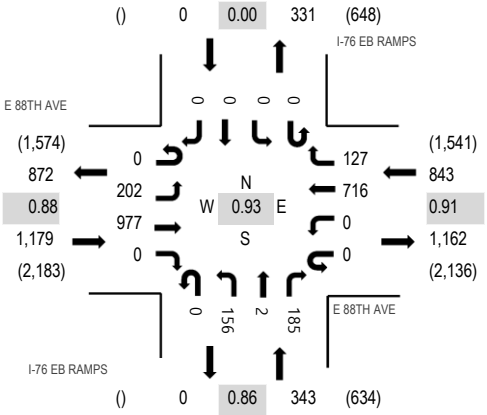
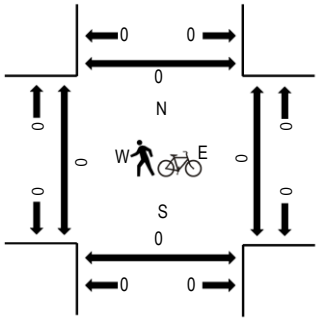
Location: 3 I-76 EB RAMPS & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 EB RAMPS Northbound				I-76 EB RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	42	193	0	0	0	109	29	0	39	0	40	0	0	0	0	452	2,188	0	0	0	2
6:45 AM	0	51	249	0	0	0	199	33	0	45	0	56	0	0	0	0	633	2,365	0	0	0	0
7:00 AM	0	54	231	0	0	0	151	34	0	35	0	47	0	0	0	0	552	2,335	0	0	0	0
7:15 AM	0	42	215	0	0	0	177	32	0	40	0	45	0	0	0	0	551	2,301	0	0	0	0
7:30 AM	0	55	282	0	0	0	189	28	0	36	2	37	0	0	0	0	629	2,170	0	0	0	0
7:45 AM	0	70	231	0	0	0	176	32	0	42	0	52	0	0	0	0	603		0	0	0	0
8:00 AM	0	40	228	0	0	0	154	40	0	29	0	27	0	0	0	0	518		0	0	0	0
8:15 AM	0	37	163	0	0	0	131	27	0	22	0	40	0	0	0	0	420		0	0	0	0
Count Total	0	391	1,792	0	0	0	1,286	255	0	288	2	344	0	0	0	0	4,358		0	0	0	2
Peak Hour	0	202	977	0	0	0	716	127	0	156	2	185	0	0	0	0	2,365		0	0	0	0

All Traffic Data Services Inc.
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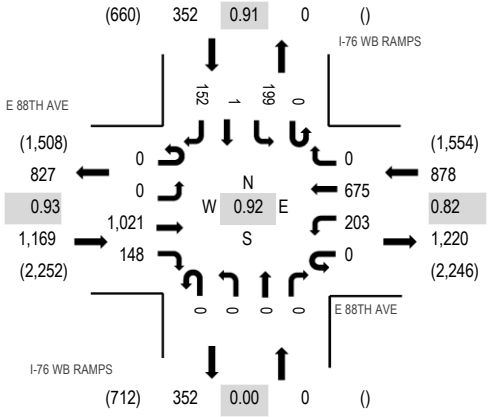
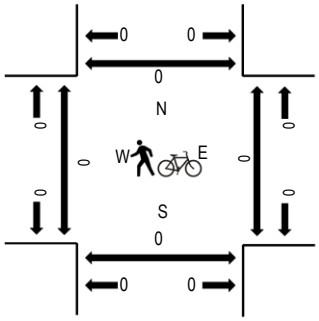
Location: 2 I-76 WB RAMPS & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 WB RAMPS Northbound				I-76 WB RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	0	236	47	0	35	88	0	0	0	0	0	0	30	0	42	478	2,243	0	0	0	0
6:45 AM	0	0	271	53	0	67	174	0	0	0	0	0	0	32	0	46	643	2,389	0	0	0	0
7:00 AM	0	0	255	37	0	43	123	0	0	0	0	0	0	47	0	38	543	2,399	0	0	0	0
7:15 AM	0	0	247	38	0	40	174	0	0	0	0	0	0	40	0	40	579	2,370	0	0	0	0
7:30 AM	0	0	272	26	0	56	173	0	0	0	0	0	0	60	1	36	624	2,223	0	0	0	0
7:45 AM	0	0	247	47	0	64	205	0	0	0	0	0	0	52	0	38	653		0	0	0	0
8:00 AM	0	0	224	37	0	37	129	0	0	0	0	0	0	37	0	50	514		0	0	0	0
8:15 AM	0	0	171	44	0	40	106	0	0	0	0	0	0	25	0	46	432		0	0	0	0
Count Total	0	0	1,923	329	0	382	1,172	0	0	0	0	0	0	323	1	336	4,466		0	0	0	0
Peak Hour	0	0	1,021	148	0	203	675	0	0	0	0	0	0	199	1	152	2,399		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
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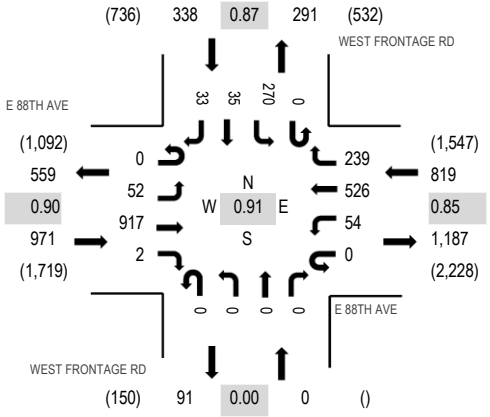
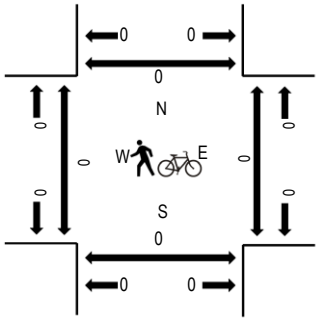
Location: 1 WEST FRONTAGE RD & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WEST FRONTAGE RD Northbound				WEST FRONTAGE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	1	12	200	0	0	14	67	54	0	0	0	0	0	78	3	9	438	2,029	0	0	0	0
6:45 AM	0	23	248	0	0	14	136	75	0	0	0	0	0	66	10	11	583	2,128	0	0	0	0
7:00 AM	0	11	230	1	0	11	117	43	0	0	0	0	0	66	9	4	492	2,106	0	0	0	0
7:15 AM	0	5	213	1	0	16	144	58	0	0	0	0	0	62	7	10	516	2,085	0	0	0	0
7:30 AM	0	13	226	0	0	13	129	63	0	0	0	0	0	76	9	8	537	1,973	0	0	0	0
7:45 AM	0	11	193	2	0	9	171	71	0	0	0	0	0	93	7	4	561		0	0	0	0
8:00 AM	0	2	174	2	0	3	129	46	0	0	0	0	0	85	7	23	471		0	0	0	0
8:15 AM	0	5	145	1	0	6	118	40	0	0	0	0	0	73	5	11	404		0	0	0	0
Count Total	1	82	1,629	7	0	86	1,011	450	0	0	0	0	0	599	57	80	4,002		0	0	0	0
Peak Hour	0	52	917	2	0	54	526	239	0	0	0	0	0	270	35	33	2,128		0	0	0	0

All Traffic Data Services Inc.
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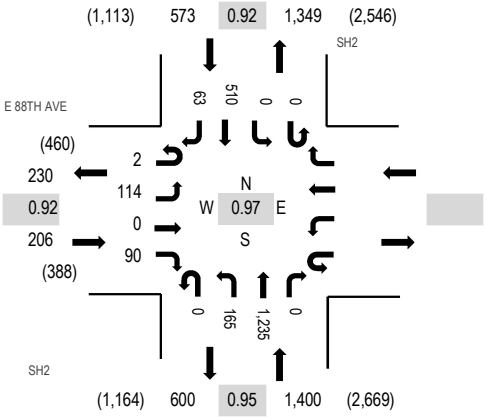
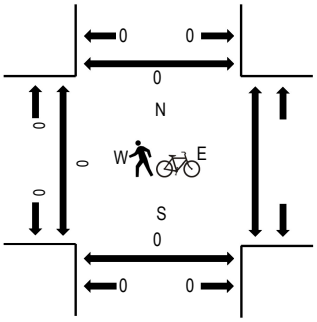
Location: 1 SH2 & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				Westbound				SH2 Northbound				SH2 Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	29	0	24					0	34	268	0	0	0	107	20	482	2,130	0		0	0
4:15 PM	0	24	0	21					0	31	326	0	0	0	125	15	542	2,170	0		0	0
4:30 PM	0	26	0	21					0	32	306	0	0	0	134	24	543	2,179	0		0	0
4:45 PM	1	30	0	22					0	49	318	0	0	0	130	13	563	2,109	0		0	0
5:00 PM	0	25	0	25					0	38	295	0	0	0	127	12	522	2,040	0		0	0
5:15 PM	1	33	0	22					0	46	316	0	0	0	119	14	551		0		0	0
5:30 PM	0	18	0	25					0	42	247	0	0	0	124	17	473		0		0	0
5:45 PM	0	18	0	23					0	54	267	0	0	0	115	17	494		0		0	0
Count Total	2	203	0	183					0	326	2,343	0	0	0	981	132	4,170		0		0	0
Peak Hour	2	114	0	90					0	165	1,235	0	0	0	510	63	2,179		0		0	0

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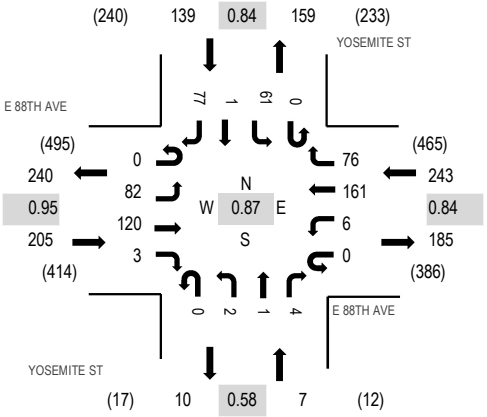
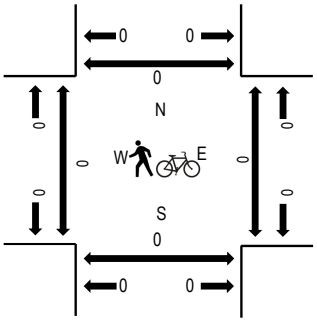
Location: 2 YOSEMITE ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				YOSEMITE ST Northbound				YOSEMITE ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	7	45	2	0	0	48	5	0	0	0	1	0	6	0	15	129	537	0	0	0	0
4:15 PM	0	16	39	0	0	0	39	6	0	0	0	1	0	13	0	14	128	542	0	0	0	0
4:30 PM	0	11	37	1	0	1	55	7	0	1	0	0	0	6	0	21	140	585	0	0	0	0
4:45 PM	0	8	43	0	0	1	46	14	0	0	0	2	0	8	2	16	140	588	0	0	0	0
5:00 PM	0	16	24	1	0	1	40	9	0	0	0	1	0	19	1	22	134	594	0	0	0	0
5:15 PM	0	19	46	0	0	2	37	23	0	0	1	0	0	15	0	28	171		0	0	0	0
5:30 PM	0	24	23	1	0	1	38	20	0	1	0	1	0	16	0	18	143		0	0	0	0
5:45 PM	0	23	27	1	0	2	46	24	0	1	0	2	0	11	0	9	146		0	0	0	0
Count Total	0	124	284	6	0	8	349	108	0	3	1	8	0	94	3	143	1,131		0	0	0	0
Peak Hour	0	82	120	3	0	6	161	76	0	2	1	4	0	61	1	77	594		0	0	0	0

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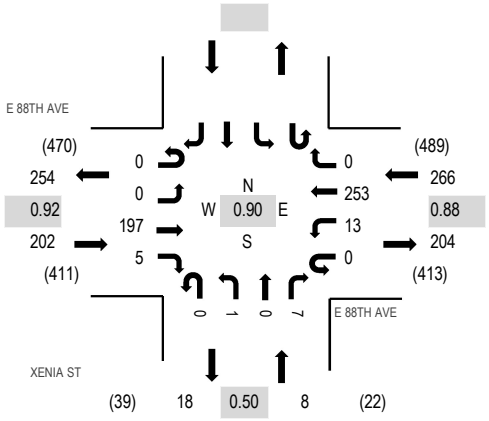
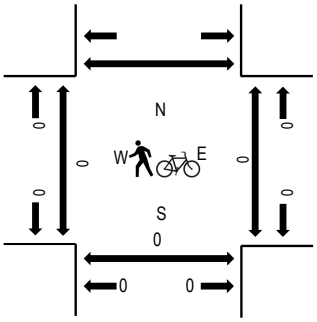
Location: 3 XENIA ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				XENIA ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	53	1	0	5	56	0	0	1	0	1					117	468	0	0	0	
4:15 PM	0	0	54	2	0	2	51	0	0	2	0	2					113	457	0	0	0	
4:30 PM	0	0	44	2	0	4	72	0	0	0	0	2					124	476	0	0	0	
4:45 PM	0	0	49	2	0	2	59	0	0	0	0	2					114	456	0	0	0	
5:00 PM	0	0	40	1	0	3	60	0	0	0	0	2					106	454	0	0	0	
5:15 PM	0	0	64	0	0	4	62	0	0	1	0	1					132		0	0	0	
5:30 PM	0	0	45	3	0	3	51	0	0	1	0	1					104		0	0	0	
5:45 PM	0	0	47	4	1	1	53	0	0	1	0	5					112		0	0	0	
Count Total	0	0	396	15	1	24	464	0	0	6	0	16					922		0	0	0	
Peak Hour	0	0	197	5	0	13	253	0	0	1	0	7					476		0	0	0	

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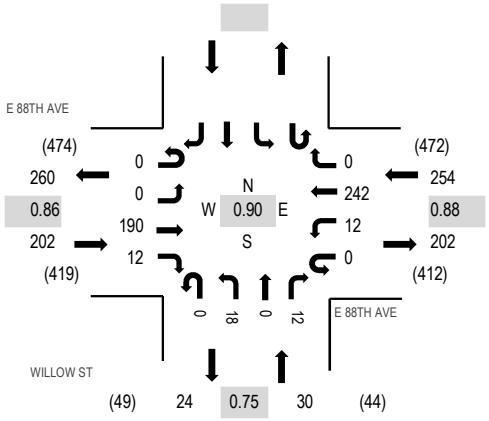
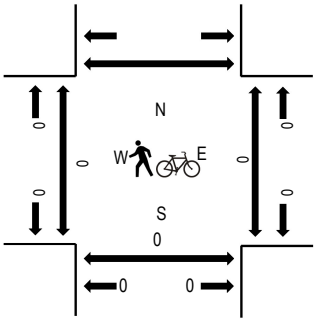
Location: 4 WILLOW ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WILLOW ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South North
4:00 PM	0	0	52	1	0	4	53	0	0	2	0	2					114	478	0	0	0
4:15 PM	0	0	54	7	0	3	52	0	0	2	0	2					120	471	0	0	0
4:30 PM	0	0	44	4	0	5	67	0	0	9	0	1					130	486	0	0	0
4:45 PM	0	0	47	2	0	3	56	0	0	2	0	4					114	462	0	0	0
5:00 PM	0	0	39	3	0	1	57	0	0	4	0	3					107	457	0	0	0
5:15 PM	0	0	60	3	0	3	62	0	0	3	0	4					135		0	0	0
5:30 PM	0	0	46	4	0	2	51	0	0	1	0	2					106		0	0	0
5:45 PM	0	0	51	2	0	2	51	0	0	2	0	1					109		0	0	0
Count Total	0	0	393	26	0	23	449	0	0	25	0	19					935		0	0	0
Peak Hour	0	0	190	12	0	12	242	0	0	18	0	12					486		0	0	0

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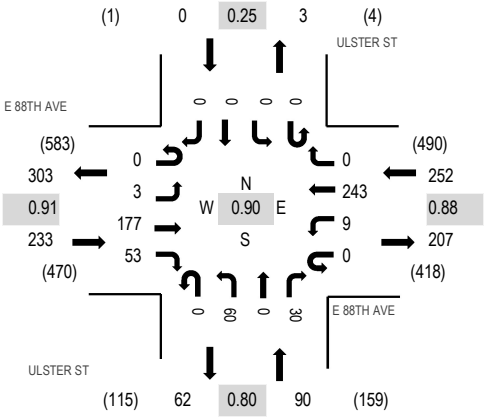
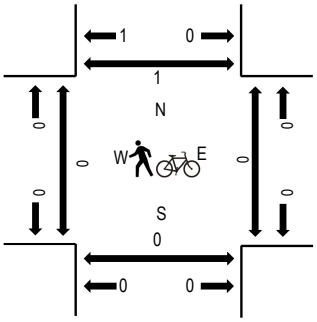
Location: 5 ULSTER ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				ULSTER ST Northbound				ULSTER ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	41	18	0	3	55	0	0	16	0	10	0	0	0	0	143	575	0	0	0	0
4:15 PM	0	0	52	20	0	1	63	0	0	15	0	8	0	0	0	0	159	569	0	0	0	0
4:30 PM	0	1	40	7	0	4	70	0	0	18	0	10	0	0	0	0	150	559	0	0	0	0
4:45 PM	0	2	44	8	0	1	55	0	0	11	0	2	0	0	0	0	123	535	0	0	0	1
5:00 PM	0	1	43	10	0	2	60	0	0	17	0	4	0	0	0	0	137	545	0	0	0	1
5:15 PM	0	0	56	9	0	4	64	0	0	12	0	3	0	0	0	1	149		0	0	0	0
5:30 PM	0	0	44	10	0	5	48	0	0	13	0	6	0	0	0	0	126		0	0	0	1
5:45 PM	0	0	53	11	0	2	53	0	0	12	0	2	0	0	0	0	133		0	0	0	0
Count Total	0	4	373	93	0	22	468	0	0	114	0	45	0	0	0	1	1,120		0	0	0	3
Peak Hour	0	3	177	53	0	9	243	0	0	60	0	30	0	0	0	0	575		0	0	0	1

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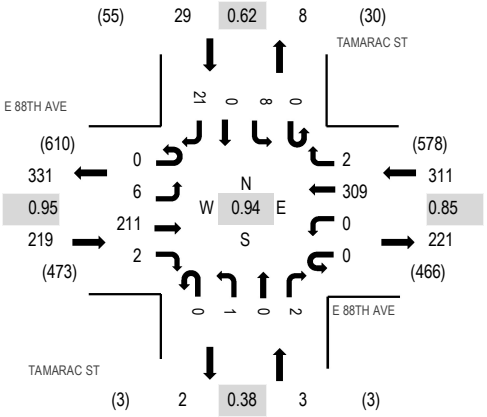
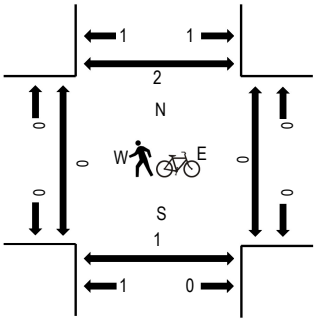
Location: 6 TAMARAC ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				TAMARAC ST Northbound				TAMARAC ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	4	57	1	0	0	66	4	0	0	0	0	0	2	0	4	138	559	0	0	0	0
4:15 PM	1	1	64	0	0	0	68	3	0	0	0	0	0	0	0	7	144	556	0	0	0	0
4:30 PM	0	3	48	0	0	0	90	1	0	0	0	0	0	2	0	4	148	562	0	0	0	0
4:45 PM	0	1	49	0	0	0	64	1	0	1	0	0	0	4	0	9	129	545	0	0	0	1
5:00 PM	0	1	54	0	0	0	78	0	0	0	0	0	0	0	0	2	135	550	0	0	0	1
5:15 PM	0	1	60	2	0	0	77	0	0	0	0	2	0	2	0	6	150		0	0	1	0
5:30 PM	0	3	59	0	0	0	60	1	0	0	0	0	0	1	0	7	131		0	0	0	1
5:45 PM	0	4	60	0	0	0	63	2	0	0	0	0	0	2	0	3	134		0	0	0	2
Count Total	1	18	451	3	0	0	566	12	0	1	0	2	0	13	0	42	1,109		0	0	1	5
Peak Hour	0	6	211	2	0	0	309	2	0	1	0	2	0	8	0	21	562		0	0	1	2

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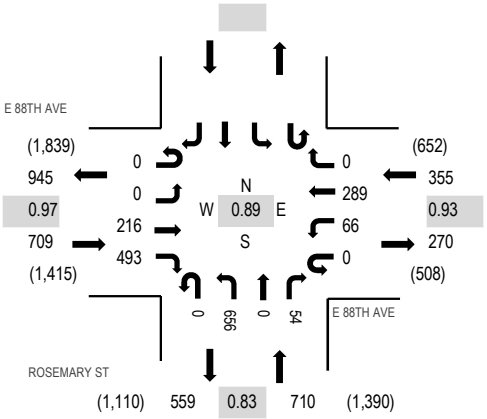
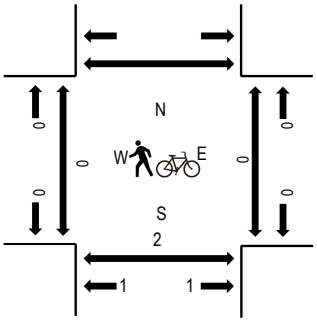
Location: 7 ROSEMARY ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				ROSEMARY ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	47	128	0	13	79	0	0	165	0	11					443	1,689	0	0	0	
4:15 PM	0	0	46	129	0	17	45	0	0	169	0	7					413	1,744	0	0	0	
4:30 PM	0	0	56	126	0	29	47	0	0	180	0	15					453	1,774	0	0	0	
4:45 PM	0	0	52	106	0	9	78	0	0	123	0	12					380	1,715	0	0	0	
5:00 PM	0	0	51	132	0	11	87	0	0	203	0	14					498	1,768	0	0	0	
5:15 PM	0	0	57	129	0	17	77	0	0	150	0	13					443		0	0	1	
5:30 PM	0	0	50	129	0	14	72	0	0	122	0	7					394		0	0	0	
5:45 PM	0	0	64	113	0	8	49	0	0	193	0	6					433		0	0	0	
Count Total	0	0	423	992	0	118	534	0	0	1,305	0	85					3,457		0	0	1	
Peak Hour	0	0	216	493	0	66	289	0	0	656	0	54					1,774		0	0	1	

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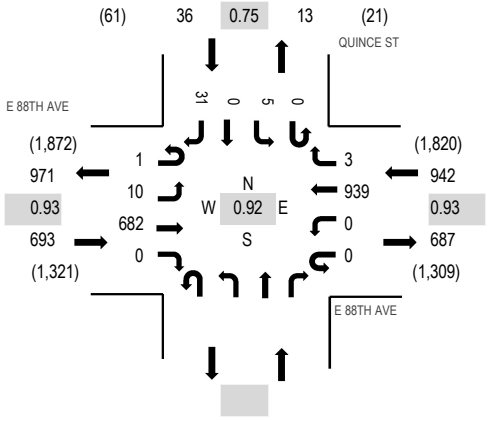
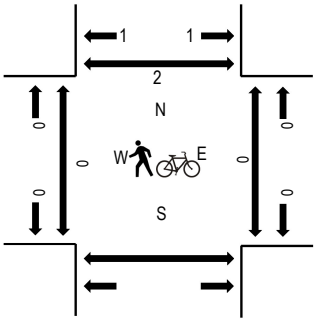
Location: 8 QUINCE ST & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				Northbound				QUINCE ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	3	153	0	0	0	229	1					0	0	0	11	397	1,660	0	0		0
4:15 PM	0	4	178	0	0	0	254	0					0	1	0	5	442	1,661	0	0		0
4:30 PM	1	3	169	0	0	0	257	0					0	1	0	6	437	1,671	0	0		0
4:45 PM	0	5	149	0	0	0	217	1					0	2	0	10	384	1,590	0	0		1
5:00 PM	0	1	186	0	0	0	203	1					0	0	0	7	398	1,542	0	0		1
5:15 PM	0	1	178	0	0	0	262	1					0	2	0	8	452		0	0		0
5:30 PM	0	0	158	0	0	0	193	0					0	0	0	5	356		0	0		0
5:45 PM	0	0	132	0	0	0	201	0					0	0	0	3	336		0	0		0
Count Total	1	17	1,303	0	0	0	1,816	4					0	6	0	55	3,202		0	0		2
Peak Hour	1	10	682	0	0	0	939	3					0	5	0	31	1,671		0	0		2

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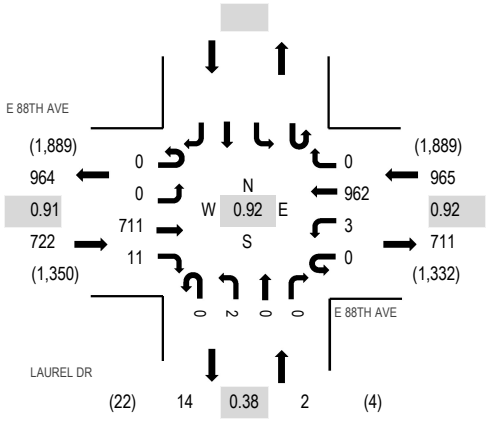
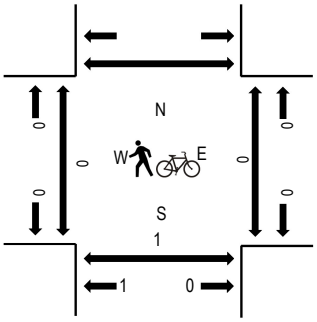
Location: 9 LAUREL DR & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				LAUREL DR Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	158	1	0	0	237	0	0	1	0	0					397	1,678	0	0	0	
4:15 PM	0	0	188	2	0	0	270	0	0	0	0	0					460	1,689	0	0	0	
4:30 PM	0	0	176	3	0	2	254	0	0	0	0	0					435	1,672	0	0	0	
4:45 PM	0	0	152	3	0	0	231	0	0	0	0	0					386	1,603	0	0	0	
5:00 PM	0	0	195	3	0	1	207	0	0	2	0	0					408	1,565	0	0	1	
5:15 PM	0	0	174	0	0	1	268	0	0	0	0	0					443		0	0	0	
5:30 PM	0	0	158	3	0	0	204	0	0	1	0	0					366		0	0	1	
5:45 PM	0	0	131	3	0	0	214	0	0	0	0	0					348		0	0	0	
Count Total	0	0	1,332	18	0	4	1,885	0	0	4	0	0					3,243		0	0	2	
Peak Hour	0	0	711	11	0	3	962	0	0	2	0	0					1,689		0	0	1	

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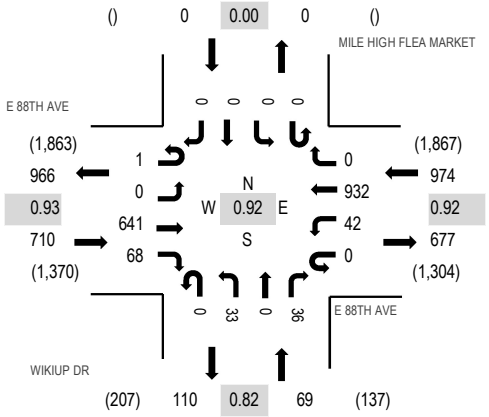
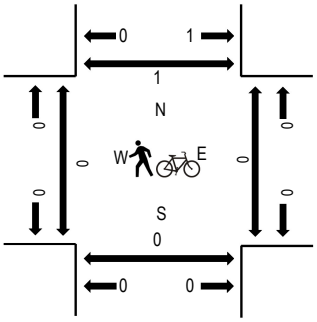
Location: 10 WIKIUP DR & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

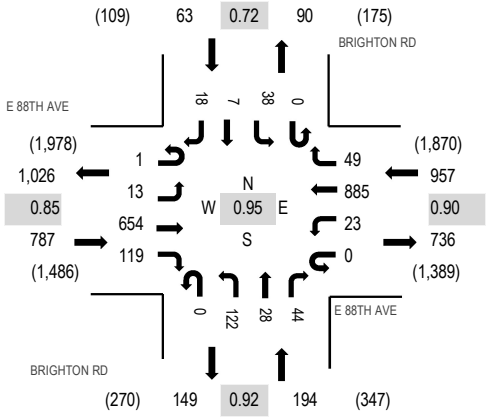
Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WIKIUP DR Northbound				MILE HIGH FLEA MARKET Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	1	0	149	26	0	12	226	0	0	11	0	10	0	0	0	0	435	1,753	0	0	0	0
4:15 PM	0	0	183	13	0	9	257	0	0	8	0	7	0	0	0	0	477	1,742	0	0	0	0
4:30 PM	0	0	165	16	0	11	220	0	0	8	0	10	0	0	0	0	430	1,712	0	0	0	0
4:45 PM	0	0	144	13	0	10	229	0	0	6	0	9	0	0	0	0	411	1,669	0	0	0	1
5:00 PM	0	0	176	16	0	4	207	0	0	13	0	8	0	0	0	0	424	1,621	0	0	1	0
5:15 PM	0	0	157	23	0	7	248	0	0	3	0	9	0	0	0	0	447		0	0	0	0
5:30 PM	0	0	144	14	1	11	199	0	0	10	0	8	0	0	0	0	387		0	0	1	0
5:45 PM	0	0	113	17	0	5	211	0	0	6	0	11	0	0	0	0	363		0	0	4	0
Count Total	1	0	1,231	138	1	69	1,797	0	0	65	0	72	0	0	0	0	3,374		0	0	6	1
Peak Hour	1	0	641	68	0	42	932	0	0	33	0	36	0	0	0	0	1,753		0	0	0	1

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

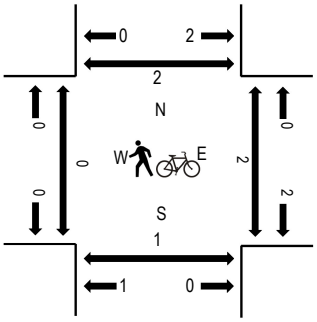
Location: 11 BRIGHTON RD & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

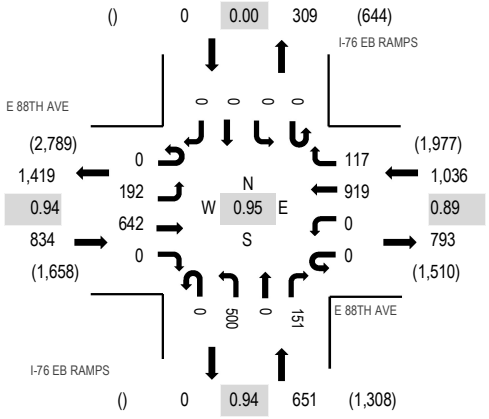
Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				BRIGHTON RD Northbound				BRIGHTON RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	154	37	0	4	220	14	0	23	5	6	0	10	0	13	491	1,971	0	1	0	1
4:15 PM	0	2	167	26	0	6	249	13	0	34	5	11	0	11	0	3	527	2,001	0	0	0	0
4:30 PM	0	3	166	24	0	4	203	10	0	29	9	10	0	8	4	4	474	1,957	0	0	0	0
4:45 PM	0	5	136	27	0	4	227	14	0	29	9	15	0	7	1	5	479	1,909	0	1	1	2
5:00 PM	1	3	185	42	0	9	206	12	0	30	5	8	0	12	2	6	521	1,841	0	1	0	0
5:15 PM	0	4	166	17	0	7	214	19	0	28	3	14	0	2	3	6	483		0	0	1	0
5:30 PM	1	0	149	15	0	5	190	16	0	25	7	12	0	4	1	1	426		0	0	0	0
5:45 PM	1	2	126	22	0	8	209	7	0	21	3	6	0	4	2	0	411		0	1	0	0
Count Total	3	24	1,249	210	0	47	1,718	105	0	219	46	82	0	58	13	38	3,812		0	4	2	3
Peak Hour	1	13	654	119	0	23	885	49	0	122	28	44	0	38	7	18	2,001		0	2	1	2

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

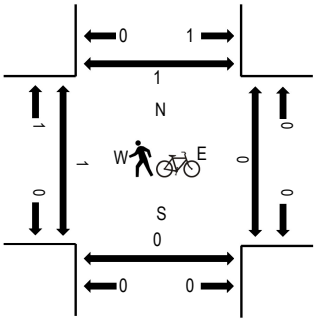
Location: 12 I-76 EB RAMPS & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



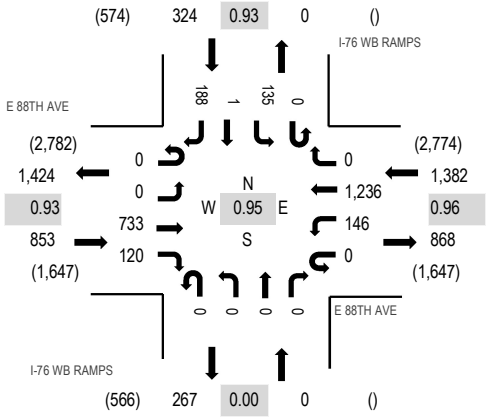
Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 EB RAMPS Northbound				I-76 EB RAMPS Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	52	153	0	0	0	216	34	0	121	0	35	0	0	0	0	611	2,507	0	0	1	0
4:15 PM	0	43	161	0	0	0	254	39	0	123	0	45	0	0	0	0	665	2,521	1	0	0	0
4:30 PM	0	53	151	0	0	0	213	27	0	132	0	34	0	0	0	0	610	2,505	0	0	0	0
4:45 PM	0	53	146	0	0	0	230	32	0	126	0	34	0	0	0	0	621	2,487	0	0	0	1
5:00 PM	0	43	184	0	0	0	222	19	0	119	0	38	0	0	0	0	625	2,436	0	0	0	0
5:15 PM	0	73	158	0	0	0	216	26	0	146	0	30	0	0	0	0	649		0	0	0	0
5:30 PM	0	67	147	0	0	0	197	19	0	131	0	31	0	0	0	0	592		0	0	0	0
5:45 PM	0	42	132	0	0	0	211	22	0	132	0	31	0	0	0	0	570		0	0	0	0
Count Total	0	426	1,232	0	0	0	1,759	218	0	1,030	0	278	0	0	0	0	4,943		1	0	1	1
Peak Hour	0	192	642	0	0	0	919	117	0	500	0	151	0	0	0	0	2,521		1	0	0	1

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

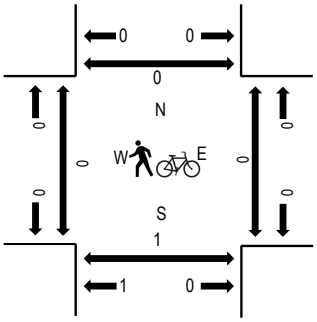
Location: 13 I-76 WB RAMPS & E 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



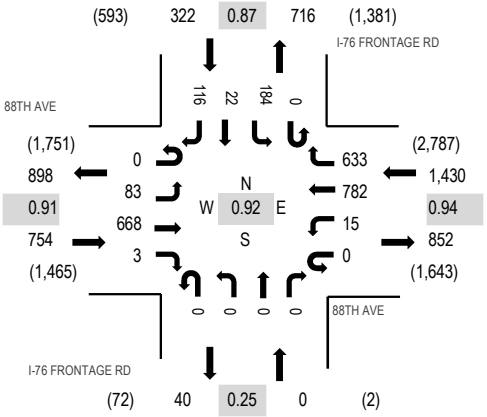
Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 WB RAMPS Northbound				I-76 WB RAMPS Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	175	36	0	46	288	0	0	0	0	0	0	28	3	37	613	2,483	0	0	0	0
4:15 PM	0	0	178	31	0	44	322	0	0	0	0	0	0	24	0	46	645	2,514	0	0	0	0
4:30 PM	0	0	189	22	0	44	298	0	0	0	0	0	0	21	0	22	596	2,541	0	0	0	0
4:45 PM	0	0	162	26	0	32	330	0	0	0	0	0	0	37	0	42	629	2,559	0	0	0	0
5:00 PM	0	0	196	34	0	45	282	0	0	0	0	0	0	39	0	48	644	2,512	0	0	0	0
5:15 PM	0	0	197	30	0	42	326	0	0	0	0	0	0	27	1	49	672		0	0	0	0
5:30 PM	0	0	178	30	0	27	298	0	0	0	0	0	0	32	0	49	614		0	0	0	0
5:45 PM	0	0	130	33	0	38	312	0	0	0	0	0	0	34	2	33	582		0	0	0	0
Count Total	0	0	1,405	242	0	318	2,456	0	0	0	0	0	0	242	6	326	4,995		0	0	0	0
Peak Hour	0	0	733	120	0	146	1,236	0	0	0	0	0	0	135	1	188	2,559		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

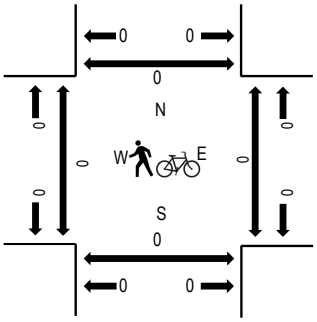
Location: 14 I-76 FRONTAGE RD & 88TH AVE PM
Date: Tuesday, October 16, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



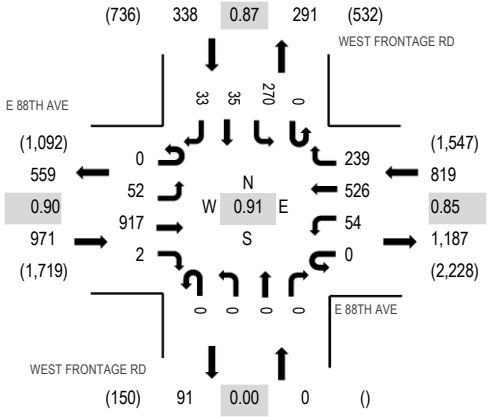
Traffic Counts

Interval Start Time	88TH AVE Eastbound				88TH AVE Westbound				I-76 FRONTAGE RD Northbound				I-76 FRONTAGE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	19	155	0	0	5	179	140	0	0	0	0	0	47	6	21	572	2,393	0	0	1	0
4:15 PM	0	19	166	2	0	9	216	151	0	0	0	2	0	39	2	34	640	2,441	0	0	0	0
4:30 PM	0	22	171	0	0	2	175	143	0	0	0	0	0	40	1	23	577	2,483	0	0	0	0
4:45 PM	0	22	148	2	0	4	201	161	0	0	0	0	0	35	5	26	604	2,506	0	0	0	0
5:00 PM	0	26	168	0	0	5	194	134	0	0	0	0	0	62	4	27	620	2,454	0	0	0	0
5:15 PM	0	23	190	0	0	2	196	181	0	0	0	0	0	47	10	33	682		0	0	0	0
5:30 PM	0	12	162	1	0	4	191	157	0	0	0	0	0	40	3	30	600		0	0	0	0
5:45 PM	0	21	136	0	0	4	183	150	0	0	0	0	0	35	1	22	552		1	0	0	0
Count Total	0	164	1,296	5	0	35	1,535	1,217	0	0	0	2	0	345	32	216	4,847		1	0	1	0
Peak Hour	0	83	668	3	0	15	782	633	0	0	0	0	0	184	22	116	2,506		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

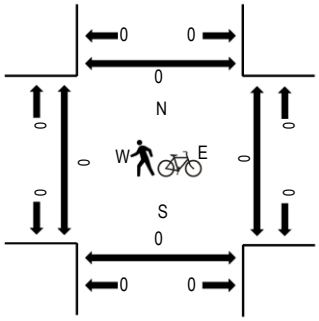
Location: 1 WEST FRONTAGE RD & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



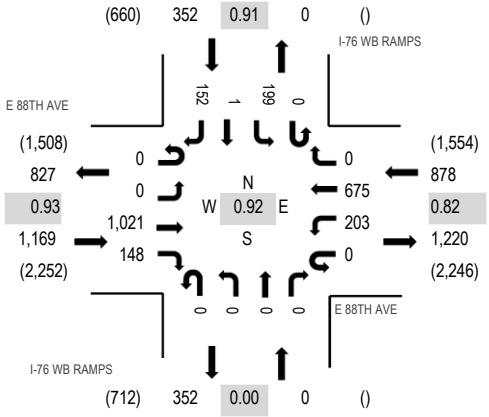
Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				WEST FRONTAGE RD Northbound				WEST FRONTAGE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	1	12	200	0	0	14	67	54	0	0	0	0	0	78	3	9	438	2,029	0	0	0	0
6:45 AM	0	23	248	0	0	14	136	75	0	0	0	0	0	66	10	11	583	2,128	0	0	0	0
7:00 AM	0	11	230	1	0	11	117	43	0	0	0	0	0	66	9	4	492	2,106	0	0	0	0
7:15 AM	0	5	213	1	0	16	144	58	0	0	0	0	0	62	7	10	516	2,085	0	0	0	0
7:30 AM	0	13	226	0	0	13	129	63	0	0	0	0	0	76	9	8	537	1,973	0	0	0	0
7:45 AM	0	11	193	2	0	9	171	71	0	0	0	0	0	93	7	4	561		0	0	0	0
8:00 AM	0	2	174	2	0	3	129	46	0	0	0	0	0	85	7	23	471		0	0	0	0
8:15 AM	0	5	145	1	0	6	118	40	0	0	0	0	0	73	5	11	404		0	0	0	0
Count Total	1	82	1,629	7	0	86	1,011	450	0	0	0	0	0	599	57	80	4,002		0	0	0	0
Peak Hour	0	52	917	2	0	54	526	239	0	0	0	0	0	270	35	33	2,128		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

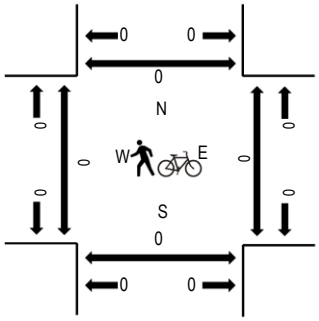
Location: 2 I-76 WB RAMPS & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



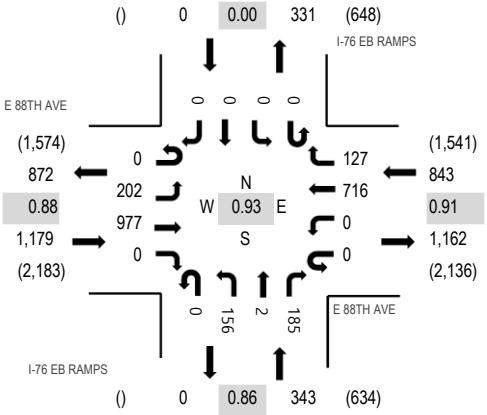
Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 WB RAMPS Northbound				I-76 WB RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	0	236	47	0	35	88	0	0	0	0	0	0	30	0	42	478	2,243	0	0	0	0
6:45 AM	0	0	271	53	0	67	174	0	0	0	0	0	0	32	0	46	643	2,389	0	0	0	0
7:00 AM	0	0	255	37	0	43	123	0	0	0	0	0	0	47	0	38	543	2,399	0	0	0	0
7:15 AM	0	0	247	38	0	40	174	0	0	0	0	0	0	40	0	40	579	2,370	0	0	0	0
7:30 AM	0	0	272	26	0	56	173	0	0	0	0	0	0	60	1	36	624	2,223	0	0	0	0
7:45 AM	0	0	247	47	0	64	205	0	0	0	0	0	0	52	0	38	653		0	0	0	0
8:00 AM	0	0	224	37	0	37	129	0	0	0	0	0	0	37	0	50	514		0	0	0	0
8:15 AM	0	0	171	44	0	40	106	0	0	0	0	0	0	25	0	46	432		0	0	0	0
Count Total	0	0	1,923	329	0	382	1,172	0	0	0	0	0	0	323	1	336	4,466		0	0	0	0
Peak Hour	0	0	1,021	148	0	203	675	0	0	0	0	0	0	199	1	152	2,399		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

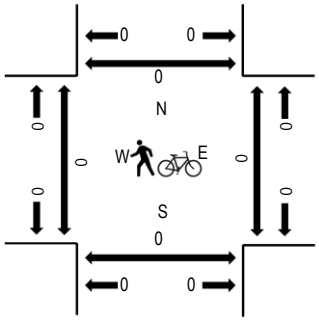
Location: 3 I-76 EB RAMPS & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



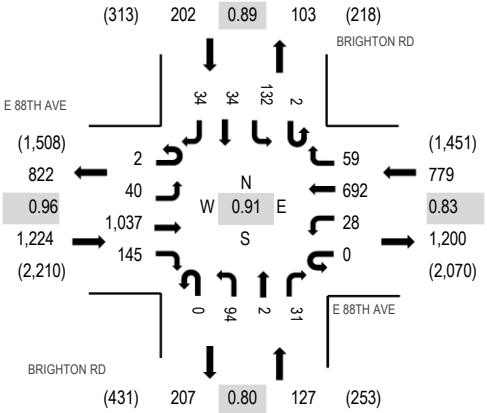
Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				I-76 EB RAMPS Northbound				I-76 EB RAMPS Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	0	42	193	0	0	0	109	29	0	39	0	40	0	0	0	0	452	2,188	0	0	0	2
6:45 AM	0	51	249	0	0	0	199	33	0	45	0	56	0	0	0	0	633	2,365	0	0	0	0
7:00 AM	0	54	231	0	0	0	151	34	0	35	0	47	0	0	0	0	552	2,335	0	0	0	0
7:15 AM	0	42	215	0	0	0	177	32	0	40	0	45	0	0	0	0	551	2,301	0	0	0	0
7:30 AM	0	55	282	0	0	0	189	28	0	36	2	37	0	0	0	0	629	2,170	0	0	0	0
7:45 AM	0	70	231	0	0	0	176	32	0	42	0	52	0	0	0	0	603		0	0	0	0
8:00 AM	0	40	228	0	0	0	154	40	0	29	0	27	0	0	0	0	518		0	0	0	0
8:15 AM	0	37	163	0	0	0	131	27	0	22	0	40	0	0	0	0	420		0	0	0	0
Count Total	0	391	1,792	0	0	0	1,286	255	0	288	2	344	0	0	0	0	4,358		0	0	0	2
Peak Hour	0	202	977	0	0	0	716	127	0	156	2	185	0	0	0	0	2,365		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

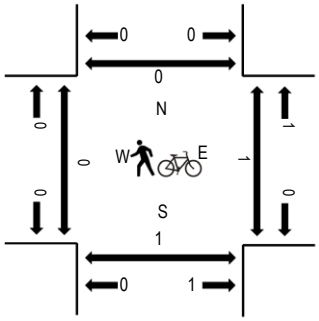
Location: 4 BRIGHTON RD & E 88TH AVE AM
Date and Start Time: Tuesday, November 13, 2018
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	E 88TH AVE Eastbound				E 88TH AVE Westbound				BRIGHTON RD Northbound				BRIGHTON RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:30 AM	1	24	180	34	0	28	83	28	0	18	2	5	0	20	17	6	446	2,197	1	1	0	1
6:45 AM	1	14	264	41	0	8	207	19	0	20	1	7	0	42	12	4	640	2,332	0	0	0	0
7:00 AM	0	9	255	40	0	6	145	17	0	18	0	5	2	40	12	2	551	2,272	0	0	0	0
7:15 AM	0	6	249	32	0	6	160	12	0	32	1	13	0	33	8	8	560	2,195	0	1	0	0
7:30 AM	1	11	269	32	0	8	180	11	0	24	0	6	0	17	2	20	581	2,030	0	0	1	0
7:45 AM	0	25	231	35	0	11	211	8	0	32	0	7	0	13	3	4	580		0	0	0	0
8:00 AM	0	10	209	32	0	7	147	5	0	26	0	6	0	22	6	4	474		0	0	0	0
8:15 AM	0	2	163	40	0	8	125	11	0	24	0	6	0	8	3	5	395		0	0	0	0
Count Total	3	101	1,820	286	0	82	1,258	111	0	194	4	55	2	195	63	53	4,227		1	2	1	1
Peak Hour	2	40	1,037	145	0	28	692	59	0	94	2	31	2	132	34	34	2,332		0	1	1	0

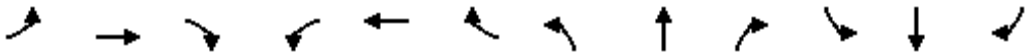
20161 - 88TH AVE
88TH AVE TRAIN CROSSING
2/12/19 - 2/13/19

DATE	TIME DOWN	TIME UP	TOTAL TIME	DATE	TIME DOWN	TIME UP	TOTAL TIME
2/12/2019	0:23:39	0:26:52	0:03:13	2/13/2019	0:30:05	0:45:23	0:15:18
2/12/2019	4:42:44	4:48:49	0:06:05	2/13/2019	1:08:53	1:14:18	0:05:25
2/12/2019	5:56:09	6:00:24	0:04:15	2/13/2019	1:31:18	1:32:26	0:01:08
2/12/2019	7:18:57	7:19:17	0:00:20	2/13/2019	2:59:17	3:00:18	0:01:01
2/12/2019	9:02:55	9:04:13	0:01:18	2/13/2019	4:45:02	4:50:16	0:05:14
2/12/2019	9:22:17	9:27:04	0:04:47	2/13/2019	5:48:48	5:49:18	0:00:30
2/12/2019	9:32:20	9:32:52	0:00:32	2/13/2019	7:47:17	7:55:29	0:08:12
2/12/2019	9:39:45	9:40:42	0:00:57	2/13/2019	9:35:43	10:12:31	0:36:48
2/12/2019	9:47:22	9:54:12	0:06:50	2/13/2019	14:01:54	14:05:34	0:03:40
2/12/2019	10:30:56	10:35:29	0:04:33	2/13/2019	17:19:24	17:20:11	0:00:47
2/12/2019	13:08:32	13:10:05	0:01:33	2/13/2019	19:01:57	19:03:37	0:01:40
2/12/2019	13:16:54	13:17:42	0:00:48	2/13/2019	19:36:12	19:37:06	0:00:54
2/12/2019	16:50:50	16:54:52	0:04:02	2/13/2019	20:43:08	20:48:24	0:05:16
2/12/2019	17:32:24	17:35:54	0:03:30	2/13/2019	21:11:50	21:16:07	0:04:17
2/12/2019	18:27:15	18:30:20	0:03:05	2/13/2019	22:27:36	22:29:12	0:01:36
2/12/2019	19:21:20	19:22:14	0:00:54	2/13/2019	23:02:14	23:06:41	0:04:27
2/12/2019	21:23:54	21:26:00	0:02:06	2/13/2019	23:25:37	23:28:42	0:03:05
2/12/2019	23:27:12	23:27:52	0:00:40	2/13/2019	23:29:30	23:30:37	0:01:07
DAILY TOTAL			0:49:28				1:40:25

APPENDIX B EXISTING TRAFFIC LOS WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1037	145	28	692	59	94	2	31	134	34	34
Future Volume (veh/h)	42	1037	145	28	692	59	94	2	31	134	34	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1811	1693	1663	1663	1900	1900	1796	1811	1900	1900
Adj Flow Rate, veh/h	76	1080	161	65	834	87	106	4	50	168	47	76
Peak Hour Factor	0.55	0.96	0.90	0.43	0.83	0.68	0.89	0.50	0.62	0.80	0.72	0.45
Percent Heavy Veh, %	5	6	6	14	16	16	0	0	7	6	0	0
Cap, veh/h	454	1953	291	416	1894	198	163	5	213	72	91	148
Arrive On Green	0.09	1.00	1.00	0.05	0.66	0.66	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1739	3004	447	1612	2887	301	658	34	1522	1307	653	1056
Grp Volume(v), veh/h	76	618	623	65	456	465	110	0	50	168	0	123
Grp Sat Flow(s),veh/h/ln	1739	1721	1731	1612	1580	1609	692	0	1522	1307	0	1710
Q Serve(g_s), s	1.4	0.0	0.0	1.3	14.0	14.0	7.3	0.0	2.9	0.0	0.0	6.7
Cycle Q Clear(g_c), s	1.4	0.0	0.0	1.3	14.0	14.0	14.0	0.0	2.9	14.0	0.0	6.7
Prop In Lane	1.00		0.26	1.00		0.19	0.96		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	454	1118	1125	416	1036	1055	168	0	213	72	0	239
V/C Ratio(X)	0.17	0.55	0.55	0.16	0.44	0.44	0.66	0.00	0.23	2.33	0.00	0.51
Avail Cap(c_a), veh/h	517	1118	1125	465	1036	1055	168	0	213	72	0	239
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.6	0.0	0.0	4.7	8.3	8.3	46.7	0.0	38.2	50.0	0.0	39.8
Incr Delay (d2), s/veh	0.2	1.8	1.8	0.2	1.4	1.3	18.4	0.0	2.6	641.0	0.0	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.6	0.6	0.4	4.4	4.4	3.6	0.0	1.2	14.6	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	1.8	1.8	4.9	9.7	9.7	65.0	0.0	40.8	691.0	0.0	47.5
LnGrp LOS	A	A	A	A	A	A	E	A	D	F	A	D
Approach Vol, veh/h		1317			986			160			291	
Approach Delay, s/veh		2.0			9.3			57.4			419.0	
Approach LOS		A			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	71.0		19.0	9.4	71.6		19.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	8.0	62.0		14.0	8.0	62.0		14.0				
Max Q Clear Time (g_c+I1), s	3.3	2.0		16.0	3.4	16.0		16.0				
Green Ext Time (p_c), s	0.0	10.9		0.0	0.0	6.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		51.9	
HCM 6th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1086	18	2	659	65	41
Future Vol, veh/h	1086	18	2	659	65	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	170	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	75	50	93	81	79
Heavy Vehicles, %	5	6	50	12	3	5
Mvmt Flow	1207	24	4	709	80	52

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1231	0	1582	616
Stage 1	-	-	-	-	1219	-
Stage 2	-	-	-	-	363	-
Critical Hdwy	-	-	5.1	-	6.86	7
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.7	-	3.53	3.35
Pot Cap-1 Maneuver	-	-	357	-	99	426
Stage 1	-	-	-	-	240	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	357	-	98	426
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	81.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	98	426	-	-	357	-
HCM Lane V/C Ratio	0.819	0.122	-	-	0.011	-
HCM Control Delay (s)	124.3	14.6	-	-	15.2	-
HCM Lane LOS	F	B	-	-	C	-
HCM 95th %tile Q(veh)	4.5	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1239	1	0	806	1	1
Future Vol, veh/h	1239	1	0	806	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	25	86	86	25	38
Heavy Vehicles, %	6	6	14	14	0	0
Mvmt Flow	1277	4	0	937	4	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1281	0	2216	641
Stage 1	-	-	-	-	1279	-
Stage 2	-	-	-	-	937	-
Critical Hdwy	-	-	4.31	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.333	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	490	-	43	422
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	384	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	490	-	43	422
Mov Cap-2 Maneuver	-	-	-	-	43	-
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	64.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	67	-	-	490	-
HCM Lane V/C Ratio	0.099	-	-	-	-
HCM Control Delay (s)	64.6	-	-	0	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	1217	774	5	1	37
Future Vol, veh/h	21	1217	774	5	1	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	95	90	50	50	84
Heavy Vehicles, %	38	6	12	12	100	62
Mvmt Flow	30	1281	860	10	2	44

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	870	0	-	0	2206	865
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	1341	-
Critical Hdwy	4.48	-	-	-	7.4	6.82
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.542	-	-	-	4.4	3.858
Pot Cap-1 Maneuver	642	-	-	-	25	278
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	153	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	642	-	-	-	24	278
Mov Cap-2 Maneuver	-	-	-	-	24	-
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	153	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	29.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	642	-	-	-	190
HCM Lane V/C Ratio	0.047	-	-	-	0.242
HCM Control Delay (s)	10.9	-	-	-	29.9
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	332	886	36	395	373	37
Future Volume (veh/h)	332	886	36	395	373	37
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1870	1648	1604	1811	1693
Adj Flow Rate, veh/h	369	933	48	444	410	64
Peak Hour Factor	0.90	0.95	0.75	0.89	0.91	0.58
Percent Heavy Veh, %	14	2	17	20	6	14
Cap, veh/h	730	1102	313	936	455	378
Arrive On Green	0.43	0.43	0.08	0.58	0.26	0.26
Sat Flow, veh/h	1693	1585	1570	1604	1725	1434
Grp Volume(v), veh/h	369	933	48	444	410	64
Grp Sat Flow(s),veh/h/ln	1693	1585	1570	1604	1725	1434
Q Serve(g_s), s	12.5	34.0	1.2	12.6	18.1	2.7
Cycle Q Clear(g_c), s	12.5	34.0	1.2	12.6	18.1	2.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	730	1102	313	936	455	378
V/C Ratio(X)	0.51	0.85	0.15	0.47	0.90	0.17
Avail Cap(c_a), veh/h	730	1102	392	936	985	819
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	8.8	10.4	9.4	28.0	22.3
Incr Delay (d2), s/veh	2.5	8.1	0.1	1.7	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	19.8	0.3	4.0	7.3	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.8	16.9	10.5	11.2	30.7	22.4
LnGrp LOS	B	B	B	B	C	C
Approach Vol, veh/h	1302			492	474	
Approach Delay, s/veh	17.4			11.1	29.6	
Approach LOS	B			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.0		26.8	12.0	40.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		46.0		45.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		14.6		20.1	3.2	36.0
Green Ext Time (p_c), s		1.7		0.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	229	2	6	283	13	3	0	1	9	0	10
Future Vol, veh/h	16	229	2	6	283	13	3	0	1	9	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	97	50	42	77	75	75	25	38	75	25	83
Heavy Vehicles, %	60	8	2	0	14	54	0	0	0	56	0	90
Mvmt Flow	24	236	4	14	368	17	4	0	3	12	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	385	0	0	240	0	0	697	699	238	693	693	377
Stage 1	-	-	-	-	-	-	286	286	-	405	405	-
Stage 2	-	-	-	-	-	-	411	413	-	288	288	-
Critical Hdwy	4.7	-	-	4.1	-	-	7.1	6.5	6.2	7.66	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Follow-up Hdwy	2.74	-	-	2.2	-	-	3.5	4	3.3	4.004	4	4.11
Pot Cap-1 Maneuver	917	-	-	1339	-	-	358	366	806	295	369	512
Stage 1	-	-	-	-	-	-	726	679	-	528	602	-
Stage 2	-	-	-	-	-	-	622	597	-	617	677	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	917	-	-	1339	-	-	340	353	806	286	356	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	340	353	-	286	356	-
Stage 1	-	-	-	-	-	-	707	661	-	514	596	-
Stage 2	-	-	-	-	-	-	601	591	-	599	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.3	13.3	15.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	441	917	-	-	1339	-	-	367
HCM Lane V/C Ratio	0.015	0.026	-	-	0.011	-	-	0.066
HCM Control Delay (s)	13.3	9	-	-	7.7	-	-	15.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	214	31	23	270	0	34	0	37	2	0	1
Future Vol, veh/h	0	214	31	23	270	0	34	0	37	2	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	59	68	84	92	80	25	75	38	92	38
Heavy Vehicles, %	11	11	7	40	22	2	44	0	19	100	0	100
Mvmt Flow	0	233	53	34	321	0	43	0	49	5	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	286	0	0	651	649	260	673	-	321
Stage 1	-	-	-	-	-	-	260	260	-	389	-	-
Stage 2	-	-	-	-	-	-	391	389	-	284	-	-
Critical Hdwy	-	-	-	4.5	-	-	7.54	6.5	6.39	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Follow-up Hdwy	-	-	-	2.56	-	-	3.896	4	3.471	4.4	-	4.2
Pot Cap-1 Maneuver	0	-	-	1087	-	0	329	391	739	264	0	541
Stage 1	0	-	-	-	-	0	661	697	-	477	0	-
Stage 2	0	-	-	-	-	0	557	612	-	553	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1087	-	-	319	379	739	241	-	541
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	463	-	329	-	-
Stage 1	-	-	-	-	-	-	661	697	-	477	-	-
Stage 2	-	-	-	-	-	-	537	593	-	516	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	13	14.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	541	-	-	1087	-	329	541
HCM Lane V/C Ratio	0.17	-	-	0.031	-	0.016	0.005
HCM Control Delay (s)	13	-	-	8.4	-	16.1	11.7
HCM Lane LOS	B	-	-	A	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-	0	0

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	296	4	10	387	2	9
Future Vol, veh/h	296	4	10	387	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	50	75	81	44	75
Heavy Vehicles, %	19	0	0	17	0	0
Mvmt Flow	357	8	13	478	5	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	365	0	865	361
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1205	-	327	688
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1205	-	322	688
Mov Cap-2 Maneuver	-	-	-	-	439	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	611	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	595	-	-	1205	-
HCM Lane V/C Ratio	0.028	-	-	0.011	-
HCM Control Delay (s)	11.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	307	0	6	397	2	8
Future Vol, veh/h	307	0	6	397	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	25	42	79	75	40
Heavy Vehicles, %	18	0	0	17	0	0
Mvmt Flow	361	0	14	503	3	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	361	0	892	361
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1209	-	315	688
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1209	-	311	688
Mov Cap-2 Maneuver	-	-	-	-	311	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	602	-	-	1209	-
HCM Lane V/C Ratio	0.038	-	-	0.012	-
HCM Control Delay (s)	11.2	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

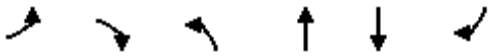
Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	268	0	1	214	56	3	0	4	92	1	184
Future Vol, veh/h	48	268	0	1	214	56	3	0	4	92	1	184
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	125	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	83	25	25	80	79	38	25	63	77	50	78
Heavy Vehicles, %	23	16	0	0	13	14	0	0	0	49	0	22
Mvmt Flow	53	323	0	4	268	71	8	0	6	119	2	236

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	339	0	0	323	0	0	860	776	323	708	705	268
Stage 1	-	-	-	-	-	-	429	429	-	276	276	-
Stage 2	-	-	-	-	-	-	431	347	-	432	429	-
Critical Hdwy	4.33	-	-	4.1	-	-	7.1	6.5	6.2	7.59	6.5	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Follow-up Hdwy	2.407	-	-	2.2	-	-	3.5	4	3.3	3.941	4	3.498
Pot Cap-1 Maneuver	1112	-	-	1248	-	-	278	331	723	295	363	725
Stage 1	-	-	-	-	-	-	608	587	-	639	685	-
Stage 2	-	-	-	-	-	-	607	638	-	520	587	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1112	-	-	1248	-	-	180	314	723	281	344	725
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	314	-	281	344	-
Stage 1	-	-	-	-	-	-	579	559	-	608	683	-
Stage 2	-	-	-	-	-	-	407	636	-	491	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	19	17.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	271	1112	-	-	1248	-	-	282	725
HCM Lane V/C Ratio	0.053	0.048	-	-	0.003	-	-	0.431	0.325
HCM Control Delay (s)	19	8.4	-	-	7.9	-	-	27.1	12.3
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	2.1	1.4



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	128	142	79	459	1350	142
Future Volume (veh/h)	128	142	79	459	1350	142
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1722	1426	1633	1722	1811	1737
Adj Flow Rate, veh/h	175	0	111	494	1500	0
Peak Hour Factor	0.73	0.85	0.71	0.93	0.90	0.84
Percent Heavy Veh, %	12	32	18	12	6	11
Cap, veh/h	211		263	2400	2155	
Arrive On Green	0.13	0.00	0.04	0.73	0.63	0.00
Sat Flow, veh/h	1640	1208	1555	3358	3532	1472
Grp Volume(v), veh/h	175	0	111	494	1500	0
Grp Sat Flow(s),veh/h/ln	1640	1208	1555	1636	1721	1472
Q Serve(g_s), s	8.3	0.0	1.9	3.8	23.1	0.0
Cycle Q Clear(g_c), s	8.3	0.0	1.9	3.8	23.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	211		263	2400	2155	
V/C Ratio(X)	0.83		0.42	0.21	0.70	
Avail Cap(c_a), veh/h	513		485	2400	2155	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.0	0.0	10.2	3.3	9.9	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.4	0.2	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.5	0.6	6.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.1	0.0	10.6	3.5	11.8	0.0
LnGrp LOS	D		B	A	B	
Approach Vol, veh/h	175	A		605	1500	A
Approach Delay, s/veh	37.1			4.8	11.8	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		64.7		15.3	8.6	56.1
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		44.0		25.0	15.0	24.0
Max Q Clear Time (g_c+I1), s		5.8		10.3	3.9	25.1
Green Ext Time (p_c), s		10.2		0.2	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

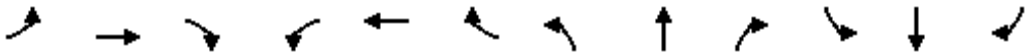
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↱	↗
Traffic Vol, veh/h	0	1104	659	0	0	0
Future Vol, veh/h	0	1104	659	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	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	1200	716	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1316	358
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	600	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	0	-	-	0	149	638
Stage 1	0	-	-	0	445	-
Stage 2	0	-	-	0	511	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	149	638
Mov Cap-2 Maneuver	-	-	-	-	149	-
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	511	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑				
Traffic Volume (veh/h)	0	1218	0	0	768	0	0	0	0	0	0	0
Future Volume (veh/h)	0	1218	0	0	768	0	0	0	0	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	0	0	1870	0	0	1870	0			
Adj Flow Rate, veh/h	0	1324	0	0	835	0	0	0	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0			
Cap, veh/h	0	1734	0	0	1734	0	0	0	0			
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00			
Sat Flow, veh/h	0	1870	0	0	1870	0		0				
Grp Volume(v), veh/h	0	1324	0	0	835	0		0.0				
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	1870	0						
Q Serve(g_s), s	0.0	9.7	0.0	0.0	3.2	0.0						
Cycle Q Clear(g_c), s	0.0	9.7	0.0	0.0	3.2	0.0						
Prop In Lane	0.00		0.00	0.00		0.00						
Lane Grp Cap(c), veh/h	0	1734	0	0	1734	0						
V/C Ratio(X)	0.00	0.76	0.00	0.00	0.48	0.00						
Avail Cap(c_a), veh/h	0	1734	0	0	1734	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00						
Uniform Delay (d), s/veh	0.0	0.5	0.0	0.0	0.3	0.0						
Incr Delay (d2), s/veh	0.0	3.2	0.0	0.0	1.0	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.0	0.5	0.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.7	0.0	0.0	1.2	0.0						
LnGrp LOS	A	A	A	A	A	A						
Approach Vol, veh/h		1324			835							
Approach Delay, s/veh		3.7			1.2							
Approach LOS		A			A							

Timer - Assigned Phs				4				8				
Phs Duration (G+Y+Rc), s				55.0				55.0				
Change Period (Y+Rc), s				4.0				4.0				
Max Green Setting (Gmax), s				51.0				51.0				
Max Q Clear Time (g_c+I1), s				11.7				5.2				
Green Ext Time (p_c), s				18.4				7.1				

Intersection Summary												
HCM 6th Ctrl Delay			2.8									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	1	2	362	693	56
Future Vol, veh/h	29	1	2	362	693	56
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	32	1	2	393	753	61

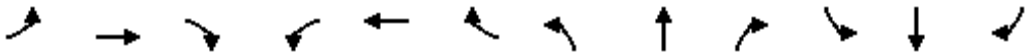
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1181	784	814	0	-	0
Stage 1	784	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	210	393	813	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	679	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	393	813	-	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	679	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	813	-	212	-	-
HCM Lane V/C Ratio	0.003	-	0.154	-	-
HCM Control Delay (s)	9.4	0	25	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	654	119	23	885	49	122	28	44	38	7	18
Future Volume (veh/h)	14	654	119	23	885	49	122	28	44	38	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1811	1693	1663	1663	1900	1900	1796	1811	1900	1900
Adj Flow Rate, veh/h	25	681	132	53	1066	72	137	56	71	48	10	40
Peak Hour Factor	0.55	0.96	0.90	0.43	0.83	0.68	0.89	0.50	0.62	0.80	0.72	0.45
Percent Heavy Veh, %	5	6	6	14	16	16	0	0	7	6	0	0
Cap, veh/h	355	1869	362	548	2027	137	182	49	213	72	47	186
Arrive On Green	0.05	1.00	1.00	0.05	0.67	0.67	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1739	2875	557	1612	3003	203	859	351	1522	1224	332	1329
Grp Volume(v), veh/h	25	407	406	53	561	577	193	0	71	48	0	50
Grp Sat Flow(s),veh/h/ln	1739	1721	1711	1612	1580	1626	1211	0	1522	1224	0	1661
Q Serve(g_s), s	0.5	0.0	0.0	1.0	17.9	17.9	11.3	0.0	4.2	0.0	0.0	2.7
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.0	17.9	17.9	14.0	0.0	4.2	14.0	0.0	2.7
Prop In Lane	1.00		0.33	1.00		0.12	0.71		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	355	1118	1112	548	1066	1098	231	0	213	72	0	233
V/C Ratio(X)	0.07	0.36	0.36	0.10	0.53	0.53	0.84	0.00	0.33	0.67	0.00	0.22
Avail Cap(c_a), veh/h	451	1118	1112	596	1066	1098	231	0	213	72	0	233
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	0.0	0.0	4.7	8.2	8.2	45.0	0.0	38.8	50.0	0.0	38.1
Incr Delay (d2), s/veh	0.1	0.9	0.9	0.1	1.9	1.8	28.5	0.0	4.2	39.6	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.3	0.3	5.5	5.7	6.6	0.0	1.8	2.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.9	0.9	4.7	10.0	10.0	73.5	0.0	43.0	89.6	0.0	40.2
LnGrp LOS	A	A	A	A	B	A	E	A	D	F	A	D
Approach Vol, veh/h		838			1191			264			98	
Approach Delay, s/veh		1.0			9.8			65.3			64.4	
Approach LOS		A			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	71.0		19.0	7.5	73.5		19.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	8.0	62.0		14.0	8.0	62.0		14.0				
Max Q Clear Time (g_c+I1), s	3.0	2.0		16.0	2.5	19.9		16.0				
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	9.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		15.1	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	641	68	42	932	33	36
Future Vol, veh/h	641	68	42	932	33	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	170	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	75	50	93	81	79
Heavy Vehicles, %	5	6	50	12	3	5
Mvmt Flow	712	91	84	1002	41	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	803	0	1427	402
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	669	-
Critical Hdwy	-	-	5.1	-	6.86	7
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.7	-	3.53	3.35
Pot Cap-1 Maneuver	-	-	569	-	125	590
Stage 1	-	-	-	-	421	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	569	-	107	590
Mov Cap-2 Maneuver	-	-	-	-	107	-
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	468	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	33.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	107	590	-	-	569	-
HCM Lane V/C Ratio	0.381	0.077	-	-	0.148	-
HCM Control Delay (s)	58	11.6	-	-	12.4	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.6	0.2	-	-	0.5	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	711	11	3	962	2	0
Future Vol, veh/h	711	11	3	962	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	25	86	86	25	38
Heavy Vehicles, %	6	6	14	14	0	0
Mvmt Flow	733	44	3	1119	8	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	777	0	1880	389
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	1125	-
Critical Hdwy	-	-	4.31	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.333	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	775	-	71	615
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	313	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	775	-	70	615
Mov Cap-2 Maneuver	-	-	-	-	70	-
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	313	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	63
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	70	-	-	775	-
HCM Lane V/C Ratio	0.114	-	-	0.005	-
HCM Control Delay (s)	63	-	-	9.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	682	939	3	5	31
Future Vol, veh/h	10	682	939	3	5	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	95	90	50	50	84
Heavy Vehicles, %	38	6	12	12	100	62
Mvmt Flow	14	718	1043	6	10	37

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1049	0	-	0	1792	1046
Stage 1	-	-	-	-	1046	-
Stage 2	-	-	-	-	746	-
Critical Hdwy	4.48	-	-	-	7.4	6.82
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.542	-	-	-	4.4	3.858
Pot Cap-1 Maneuver	543	-	-	-	51	214
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	331	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	543	-	-	-	50	214
Mov Cap-2 Maneuver	-	-	-	-	50	-
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	331	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	49.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	543	-	-	-	126
HCM Lane V/C Ratio	0.026	-	-	-	0.372
HCM Control Delay (s)	11.8	-	-	-	49.6
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	216	493	66	289	656	54
Future Volume (veh/h)	216	493	66	289	656	54
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1870	1648	1604	1811	1693
Adj Flow Rate, veh/h	240	519	88	325	721	93
Peak Hour Factor	0.90	0.95	0.75	0.89	0.91	0.58
Percent Heavy Veh, %	14	2	17	20	6	14
Cap, veh/h	564	1212	302	723	744	619
Arrive On Green	0.33	0.33	0.06	0.45	0.43	0.43
Sat Flow, veh/h	1693	1585	1570	1604	1725	1434
Grp Volume(v), veh/h	240	519	88	325	721	93
Grp Sat Flow(s),veh/h/ln	1693	1585	1570	1604	1725	1434
Q Serve(g_s), s	11.2	11.7	3.6	14.2	41.7	4.0
Cycle Q Clear(g_c), s	11.2	11.7	3.6	14.2	41.7	4.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	564	1212	302	723	744	619
V/C Ratio(X)	0.43	0.43	0.29	0.45	0.97	0.15
Avail Cap(c_a), veh/h	564	1212	363	723	761	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	4.2	19.7	19.3	28.3	17.6
Incr Delay (d2), s/veh	2.3	1.1	0.2	2.0	24.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	12.4	1.3	5.4	21.2	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.7	5.3	19.9	21.3	53.1	17.7
LnGrp LOS	C	A	B	C	D	B
Approach Vol, veh/h	759			413	814	
Approach Delay, s/veh	12.7			21.0	49.0	
Approach LOS	B			C	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.0		50.0	12.0	40.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		46.0		45.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		16.2		43.7	5.6	13.7
Green Ext Time (p_c), s		1.2		0.3	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	29.3
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	211	2	0	309	2	1	0	2	8	0	21
Future Vol, veh/h	6	211	2	0	309	2	1	0	2	8	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	97	50	42	77	75	75	25	38	75	25	83
Heavy Vehicles, %	60	8	2	0	14	54	0	0	0	56	0	90
Mvmt Flow	9	218	4	0	401	3	1	0	5	11	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	222	0	0	653	642	220	644	643	403
Stage 1	-	-	-	-	-	-	238	238	-	403	403	-
Stage 2	-	-	-	-	-	-	415	404	-	241	240	-
Critical Hdwy	4.7	-	-	4.1	-	-	7.1	6.5	6.2	7.66	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Follow-up Hdwy	2.74	-	-	2.2	-	-	3.5	4	3.3	4.004	4	4.11
Pot Cap-1 Maneuver	901	-	-	1359	-	-	383	395	825	320	394	494
Stage 1	-	-	-	-	-	-	770	712	-	529	603	-
Stage 2	-	-	-	-	-	-	619	603	-	656	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	901	-	-	1359	-	-	361	391	825	316	390	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	391	-	316	390	-
Stage 1	-	-	-	-	-	-	762	705	-	524	603	-
Stage 2	-	-	-	-	-	-	587	603	-	645	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	10.6	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	655	901	-	-	1359	-	-	423
HCM Lane V/C Ratio	0.01	0.01	-	-	-	-	-	0.085
HCM Control Delay (s)	10.6	9	-	-	0	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	180	53	9	243	0	60	0	30	0	0	0
Future Vol, veh/h	0	180	53	9	243	0	60	0	30	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	59	68	84	92	80	25	75	38	92	38
Heavy Vehicles, %	11	11	7	40	22	2	44	0	19	100	0	100
Mvmt Flow	0	196	90	13	289	0	75	0	40	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	286	0	0	556	556	241	576	-	289
Stage 1	-	-	-	-	-	-	241	241	-	315	-	-
Stage 2	-	-	-	-	-	-	315	315	-	261	-	-
Critical Hdwy	-	-	-	4.5	-	-	7.54	6.5	6.39	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Follow-up Hdwy	-	-	-	2.56	-	-	3.896	4	3.471	4.4	-	4.2
Pot Cap-1 Maneuver	0	-	-	1087	-	0	384	442	758	312	0	566
Stage 1	0	-	-	-	-	0	678	710	-	530	0	-
Stage 2	0	-	-	-	-	0	615	659	-	571	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1087	-	-	381	437	758	293	-	566
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	509	-	375	-	-
Stage 1	-	-	-	-	-	-	678	710	-	530	-	-
Stage 2	-	-	-	-	-	-	608	651	-	541	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	13.5	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	537	-	-	1087	-	-	-
HCM Lane V/C Ratio	0.214	-	-	0.012	-	-	-
HCM Control Delay (s)	13.5	-	-	8.4	-	0	0
HCM Lane LOS	B	-	-	A	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	190	12	12	242	16	12
Future Vol, veh/h	190	12	12	242	16	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	50	75	81	44	75
Heavy Vehicles, %	19	0	0	17	0	0
Mvmt Flow	229	24	16	299	36	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	572	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1324	-	485	803
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	732	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1324	-	478	803
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	732	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	617	-	-	1324	-
HCM Lane V/C Ratio	0.085	-	-	0.012	-
HCM Control Delay (s)	11.4	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	197	5	13	253	1	7
Future Vol, veh/h	197	5	13	253	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	25	42	79	75	40
Heavy Vehicles, %	18	0	0	17	0	0
Mvmt Flow	232	20	31	320	1	18

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	252	0	624	242
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	382	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1325	-	452	802
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1325	-	442	802
Mov Cap-2 Maneuver	-	-	-	-	442	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	758	-	-	1325	-
HCM Lane V/C Ratio	0.025	-	-	0.023	-
HCM Control Delay (s)	9.9	-	-	7.8	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	120	3	6	161	76	2	1	4	61	1	77
Future Vol, veh/h	82	120	3	6	161	76	2	1	4	61	1	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	125	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	83	25	25	80	79	38	25	63	77	50	78
Heavy Vehicles, %	23	16	0	0	13	14	0	0	0	49	0	22
Mvmt Flow	91	145	12	24	201	96	5	4	6	79	2	99

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	297	0	0	157	0	0	681	678	151	587	588	201
Stage 1	-	-	-	-	-	-	333	333	-	249	249	-
Stage 2	-	-	-	-	-	-	348	345	-	338	339	-
Critical Hdwy	4.33	-	-	4.1	-	-	7.1	6.5	6.2	7.59	6.5	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Follow-up Hdwy	2.407	-	-	2.2	-	-	3.5	4	3.3	3.941	4	3.498
Pot Cap-1 Maneuver	1154	-	-	1435	-	-	367	377	901	359	424	792
Stage 1	-	-	-	-	-	-	685	647	-	662	704	-
Stage 2	-	-	-	-	-	-	672	640	-	589	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1435	-	-	297	341	901	328	384	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	341	-	328	384	-
Stage 1	-	-	-	-	-	-	631	596	-	610	692	-
Stage 2	-	-	-	-	-	-	577	629	-	535	592	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.6	13.7	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	428	1154	-	-	1435	-	-	329	792
HCM Lane V/C Ratio	0.036	0.079	-	-	0.017	-	-	0.247	0.125
HCM Control Delay (s)	13.7	8.4	-	-	7.6	-	-	19.5	10.2
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0.1	-	-	1	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	116	90	165	1235	510	63
Future Volume (veh/h)	116	90	165	1235	510	63
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1722	1426	1633	1722	1811	1737
Adj Flow Rate, veh/h	159	0	232	1328	567	0
Peak Hour Factor	0.73	0.85	0.71	0.93	0.90	0.84
Percent Heavy Veh, %	12	32	18	12	6	11
Cap, veh/h	194		598	2435	2079	
Arrive On Green	0.12	0.00	0.08	0.74	0.60	0.00
Sat Flow, veh/h	1640	1208	1555	3358	3532	1472
Grp Volume(v), veh/h	159	0	232	1328	567	0
Grp Sat Flow(s),veh/h/ln	1640	1208	1555	1636	1721	1472
Q Serve(g_s), s	7.6	0.0	4.1	14.0	6.2	0.0
Cycle Q Clear(g_c), s	7.6	0.0	4.1	14.0	6.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	194		598	2435	2079	
V/C Ratio(X)	0.82		0.39	0.55	0.27	
Avail Cap(c_a), veh/h	513		769	2435	2079	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.4	0.0	4.7	4.4	7.5	0.0
Incr Delay (d2), s/veh	3.2	0.0	0.2	0.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.7	2.2	1.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.7	0.0	4.8	5.3	7.8	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	159	A		1560	567	A
Approach Delay, s/veh	37.7			5.2	7.8	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.5		14.5	11.2	54.3
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		44.0		25.0	15.0	24.0
Max Q Clear Time (g_c+I1), s		16.0		9.6	6.1	8.2
Green Ext Time (p_c), s		22.9		0.2	0.1	7.3

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

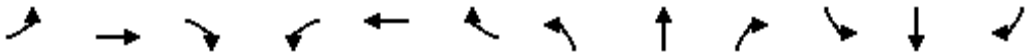
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↱	↗
Traffic Vol, veh/h	0	709	932	0	0	0
Future Vol, veh/h	0	709	932	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	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	771	1013	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1399	507
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	0	-	-	0	132	511
Stage 1	0	-	-	0	312	-
Stage 2	0	-	-	0	656	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	132	511
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	656	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑				
Traffic Volume (veh/h)	0	682	0	0	945	0	0	0	0	0	0	0
Future Volume (veh/h)	0	682	0	0	945	0	0	0	0	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	0	0	1870	0	0	1870	0			
Adj Flow Rate, veh/h	0	741	0	0	1027	0	0	0	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0			
Cap, veh/h	0	1734	0	0	1734	0	0	0	0			
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00			
Sat Flow, veh/h	0	1870	0	0	1870	0		0				
Grp Volume(v), veh/h	0	741	0	0	1027	0		0.0				
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	1870	0						
Q Serve(g_s), s	0.0	2.6	0.0	0.0	4.9	0.0						
Cycle Q Clear(g_c), s	0.0	2.6	0.0	0.0	4.9	0.0						
Prop In Lane	0.00		0.00	0.00		0.00						
Lane Grp Cap(c), veh/h	0	1734	0	0	1734	0						
V/C Ratio(X)	0.00	0.43	0.00	0.00	0.59	0.00						
Avail Cap(c_a), veh/h	0	1734	0	0	1734	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00						
Uniform Delay (d), s/veh	0.0	0.2	0.0	0.0	0.3	0.0						
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	1.5	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.7	0.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.0	0.0	0.0	1.8	0.0						
LnGrp LOS	A	A	A	A	A	A						
Approach Vol, veh/h		741			1027							
Approach Delay, s/veh		1.0			1.8							
Approach LOS		A			A							

Timer - Assigned Phs				4				8				
Phs Duration (G+Y+Rc), s				55.0				55.0				
Change Period (Y+Rc), s				4.0				4.0				
Max Green Setting (Gmax), s				51.0				51.0				
Max Q Clear Time (g_c+I1), s				4.6				6.9				
Green Ext Time (p_c), s				5.8				10.5				

Intersection Summary												
HCM 6th Ctrl Delay			1.5									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	9	6	579	484	23
Future Vol, veh/h	2	9	6	579	484	23
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	2	10	7	629	526	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1182	539	551	0	-	0
Stage 1	539	-	-	-	-	-
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	210	542	1019	-	-	-
Stage 1	585	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	208	542	1019	-	-	-
Mov Cap-2 Maneuver	208	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	523	-	-	-	-	-

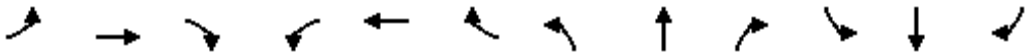
Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1019	-	420	-	-
HCM Lane V/C Ratio	0.006	-	0.028	-	-
HCM Control Delay (s)	8.6	0	13.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX C 2040 NO-BUILD TRAFFIC LOS WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1409	197	39	940	81	128	3	43	182	47	47
Future Volume (veh/h)	58	1409	197	39	940	81	128	3	43	182	47	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1811	1693	1663	1663	1900	1900	1796	1811	1900	1900
Adj Flow Rate, veh/h	105	1468	219	91	1133	119	144	6	69	228	65	104
Peak Hour Factor	0.55	0.96	0.90	0.43	0.83	0.68	0.89	0.50	0.62	0.80	0.72	0.45
Percent Heavy Veh, %	5	6	6	14	16	16	0	0	7	6	0	0
Cap, veh/h	339	1956	288	324	1883	198	126	2	213	72	92	147
Arrive On Green	0.09	1.00	1.00	0.05	0.65	0.65	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1739	3009	443	1612	2886	303	393	16	1522	1283	658	1053
Grp Volume(v), veh/h	105	831	856	91	620	632	150	0	69	228	0	169
Grp Sat Flow(s),veh/h/ln	1739	1721	1731	1612	1580	1608	409	0	1522	1283	0	1711
Q Serve(g_s), s	2.0	0.0	0.0	1.8	22.4	22.5	4.6	0.0	4.1	0.0	0.0	9.4
Cycle Q Clear(g_c), s	2.0	0.0	0.0	1.8	22.4	22.5	14.0	0.0	4.1	14.0	0.0	9.4
Prop In Lane	1.00		0.26	1.00		0.19	0.96		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	339	1118	1125	324	1031	1050	128	0	213	72	0	239
V/C Ratio(X)	0.31	0.74	0.76	0.28	0.60	0.60	1.17	0.00	0.32	3.17	0.00	0.71
Avail Cap(c_a), veh/h	396	1118	1125	373	1031	1050	128	0	213	72	0	239
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.7	0.0	0.0	4.8	9.9	9.9	49.0	0.0	38.7	50.0	0.0	41.0
Incr Delay (d2), s/veh	0.3	2.9	3.1	0.5	2.6	2.6	133.6	0.0	4.0	1010.3	0.0	16.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	1.0	0.5	7.2	7.3	7.9	0.0	1.7	22.0	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	2.9	3.1	5.2	12.5	12.5	182.6	0.0	42.7	1060.3	0.0	57.1
LnGrp LOS	A	A	A	A	B	B	F	A	D	F	A	E
Approach Vol, veh/h		1792			1343			219			397	
Approach Delay, s/veh		3.3			12.0			138.5			633.2	
Approach LOS		A			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	71.0		19.0	9.7	71.3		19.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	8.0	62.0		14.0	8.0	62.0		14.0				
Max Q Clear Time (g_c+I1), s	3.8	2.0		16.0	4.0	24.5		16.0				
Green Ext Time (p_c), s	0.1	20.0		0.0	0.1	10.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		81.0	
HCM 6th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	35.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1475	25	3	895	85	56
Future Vol, veh/h	1475	25	3	895	85	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	170	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	75	50	93	81	79
Heavy Vehicles, %	5	6	50	12	3	5
Mvmt Flow	1639	33	6	962	105	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1672	0	2149	836
Stage 1	-	-	-	-	1656	-
Stage 2	-	-	-	-	493	-
Critical Hdwy	-	-	5.1	-	6.86	7
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.7	-	3.53	3.35
Pot Cap-1 Maneuver	-	-	219	-	~ 41	304
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	219	-	~ 40	304
Mov Cap-2 Maneuver	-	-	-	-	~ 40	-
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	$ 575.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	40	304	-	-	219	-
HCM Lane V/C Ratio	2.623	0.233	-	-	0.027	-
HCM Control Delay (s)	$ 949.8	20.4	-	-	21.9	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	11.5	0.9	-	-	0.1	-

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1683	2	1	1095	2	2
Future Vol, veh/h	1683	2	1	1095	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	25	86	86	25	38
Heavy Vehicles, %	6	6	14	14	0	0
Mvmt Flow	1735	8	1	1273	8	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1743	0	3014	872
Stage 1	-	-	-	-	1739	-
Stage 2	-	-	-	-	1275	-
Critical Hdwy	-	-	4.31	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.333	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	320	-	13	298
Stage 1	-	-	-	-	129	-
Stage 2	-	-	-	-	265	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	320	-	13	298
Mov Cap-2 Maneuver	-	-	-	-	13	-
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	265	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 329.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	21	-	-	320	-
HCM Lane V/C Ratio	0.632	-	-	0.004	-
HCM Control Delay (s)	$ 329.3	-	-	16.3	0
HCM Lane LOS	F	-	-	C	A
HCM 95th %tile Q(veh)	1.8	-	-	0	-

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

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	29	1653	1051	7	2	51
Future Vol, veh/h	29	1653	1051	7	2	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	95	90	50	50	84
Heavy Vehicles, %	38	6	12	12	100	62
Mvmt Flow	41	1740	1168	14	4	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1182	0	-	0	2997	1175
Stage 1	-	-	-	-	1175	-
Stage 2	-	-	-	-	1822	-
Critical Hdwy	4.48	-	-	-	7.4	6.82
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.542	-	-	-	4.4	3.858
Pot Cap-1 Maneuver	480	-	-	-	6	177
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	80	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	480	-	-	-	5	177
Mov Cap-2 Maneuver	-	-	-	-	5	-
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	80	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	280.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	57
HCM Lane V/C Ratio	0.086	-	-	-	1.135
HCM Control Delay (s)	13.2	-	-	-	280.8
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	5.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	451	1204	49	537	507	51
Future Volume (veh/h)	451	1204	49	537	507	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1870	1648	1604	1811	1693
Adj Flow Rate, veh/h	501	1267	65	603	557	88
Peak Hour Factor	0.90	0.95	0.75	0.89	0.91	0.58
Percent Heavy Veh, %	14	2	17	20	6	14
Cap, veh/h	649	1156	217	832	596	496
Arrive On Green	0.38	0.38	0.07	0.52	0.35	0.35
Sat Flow, veh/h	1693	1585	1570	1604	1725	1434
Grp Volume(v), veh/h	501	1267	65	603	557	88
Grp Sat Flow(s),veh/h/ln	1693	1585	1570	1604	1725	1434
Q Serve(g_s), s	23.0	34.0	2.0	25.7	27.7	3.8
Cycle Q Clear(g_c), s	23.0	34.0	2.0	25.7	27.7	3.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	649	1156	217	832	596	496
V/C Ratio(X)	0.77	1.10	0.30	0.72	0.93	0.18
Avail Cap(c_a), veh/h	649	1156	288	832	876	728
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	7.9	17.6	16.4	28.0	20.2
Incr Delay (d2), s/veh	8.6	56.8	0.3	5.4	10.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	42.8	0.7	9.5	12.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.6	64.7	17.9	21.9	38.5	20.3
LnGrp LOS	C	F	B	C	D	C
Approach Vol, veh/h	1768			668	645	
Approach Delay, s/veh	55.6			21.5	36.0	
Approach LOS	E			C	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.0		36.6	12.0	40.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		46.0		45.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		27.7		29.7	4.0	36.0
Green Ext Time (p_c), s		2.3		1.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	311	3	9	385	18	5	0	2	13	0	14
Future Vol, veh/h	22	311	3	9	385	18	5	0	2	13	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	97	50	42	77	75	75	25	38	75	25	83
Heavy Vehicles, %	60	8	2	0	14	54	0	0	0	56	0	90
Mvmt Flow	32	321	6	21	500	24	7	0	5	17	0	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	524	0	0	327	0	0	951	954	324	945	945	512
Stage 1	-	-	-	-	-	-	388	388	-	554	554	-
Stage 2	-	-	-	-	-	-	563	566	-	391	391	-
Critical Hdwy	4.7	-	-	4.1	-	-	7.1	6.5	6.2	7.66	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Follow-up Hdwy	2.74	-	-	2.2	-	-	3.5	4	3.3	4.004	4	4.11
Pot Cap-1 Maneuver	804	-	-	1244	-	-	242	261	722	195	264	421
Stage 1	-	-	-	-	-	-	640	612	-	432	517	-
Stage 2	-	-	-	-	-	-	514	511	-	538	611	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	804	-	-	1244	-	-	222	246	722	185	249	421
Mov Cap-2 Maneuver	-	-	-	-	-	-	222	246	-	185	249	-
Stage 1	-	-	-	-	-	-	614	588	-	415	508	-
Stage 2	-	-	-	-	-	-	485	502	-	513	587	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.3	16.7	21.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	320	804	-	-	1244	-	-	256
HCM Lane V/C Ratio	0.037	0.04	-	-	0.017	-	-	0.134
HCM Control Delay (s)	16.7	9.7	-	-	7.9	-	-	21.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.5

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	291	43	1	367	0	47	0	51	3	0	2
Future Vol, veh/h	0	291	43	1	367	0	47	0	51	3	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	59	68	84	92	80	25	75	38	92	38
Heavy Vehicles, %	11	11	7	40	22	2	44	0	19	100	0	100
Mvmt Flow	0	316	73	1	437	0	59	0	68	8	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	389	0	0	795	792	353	826	-	437
Stage 1	-	-	-	-	-	-	353	353	-	439	-	-
Stage 2	-	-	-	-	-	-	442	439	-	387	-	-
Critical Hdwy	-	-	-	4.5	-	-	7.54	6.5	6.39	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Follow-up Hdwy	-	-	-	2.56	-	-	3.896	4	3.471	4.4	-	4.2
Pot Cap-1 Maneuver	0	-	-	990	-	0	261	324	654	203	0	457
Stage 1	0	-	-	-	-	0	585	634	-	445	0	-
Stage 2	0	-	-	-	-	0	521	582	-	479	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	990	-	-	258	324	654	182	-	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	367	424	-	282	-	-
Stage 1	-	-	-	-	-	-	585	634	-	445	-	-
Stage 2	-	-	-	-	-	-	514	581	-	429	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	15.2	16.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	480	-	-	990	-	282	457
HCM Lane V/C Ratio	0.264	-	-	0.001	-	0.028	0.012
HCM Control Delay (s)	15.2	-	-	8.6	-	18.1	13
HCM Lane LOS	C	-	-	A	-	C	B
HCM 95th %tile Q(veh)	1.1	-	-	0	-	0.1	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	430	50	14	554	15	13
Future Vol, veh/h	430	50	14	554	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	50	75	81	44	75
Heavy Vehicles, %	19	0	0	17	0	0
Mvmt Flow	518	100	19	684	34	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	618	0	1290	568
Stage 1	-	-	-	-	568	-
Stage 2	-	-	-	-	722	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	972	-	182	526
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	972	-	176	526
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	485	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	972	-
HCM Lane V/C Ratio	0.143	-	-	0.019	-
HCM Control Delay (s)	16.7	-	-	8.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	394	0	66	526	3	11
Future Vol, veh/h	394	0	66	526	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	25	42	79	75	40
Heavy Vehicles, %	18	0	0	17	0	0
Mvmt Flow	464	0	157	666	4	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	464	0	1444	464
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	980	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1108	-	147	602
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	367	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	126	602
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	367	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	407	-	-	1108	-
HCM Lane V/C Ratio	0.077	-	-	0.142	-
HCM Control Delay (s)	14.6	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	-

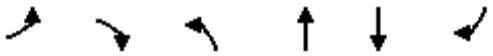
Intersection	
Int Delay, s/veh	16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	364	0	2	291	77	5	0	6	125	2	250
Future Vol, veh/h	66	364	0	2	291	77	5	0	6	125	2	250
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	125	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	83	25	25	80	79	38	25	63	77	50	78
Heavy Vehicles, %	23	16	0	0	13	14	0	0	0	49	0	22
Mvmt Flow	73	439	0	8	364	97	13	0	10	162	4	321

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	461	0	0	439	0	0	1176	1062	439	970	965	364
Stage 1	-	-	-	-	-	-	585	585	-	380	380	-
Stage 2	-	-	-	-	-	-	591	477	-	590	585	-
Critical Hdwy	4.33	-	-	4.1	-	-	7.1	6.5	6.2	7.59	6.5	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Follow-up Hdwy	2.407	-	-	2.2	-	-	3.5	4	3.3	3.941	4	3.498
Pot Cap-1 Maneuver	998	-	-	1132	-	-	170	225	622	192	257	638
Stage 1	-	-	-	-	-	-	501	501	-	557	617	-
Stage 2	-	-	-	-	-	-	497	559	-	421	501	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	998	-	-	1132	-	-	78	207	622	178	237	638
Mov Cap-2 Maneuver	-	-	-	-	-	-	78	207	-	178	237	-
Stage 1	-	-	-	-	-	-	464	464	-	516	613	-
Stage 2	-	-	-	-	-	-	244	555	-	384	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.1	40.8	45.6
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	123	998	-	-	1132	-	-	179	638
HCM Lane V/C Ratio	0.184	0.073	-	-	0.007	-	-	0.929	0.502
HCM Control Delay (s)	40.8	8.9	-	-	8.2	-	-	102.3	16.2
HCM Lane LOS	E	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	7.1	2.8



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	193	108	624	1834	193
Future Volume (veh/h)	174	193	108	624	1834	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1722	1426	1633	1722	1811	1737
Adj Flow Rate, veh/h	238	0	152	671	2038	0
Peak Hour Factor	0.73	0.85	0.71	0.93	0.90	0.84
Percent Heavy Veh, %	12	32	18	12	6	11
Cap, veh/h	277		185	2270	1961	
Arrive On Green	0.17	0.00	0.06	0.69	0.57	0.00
Sat Flow, veh/h	1640	1208	1555	3358	3532	1472
Grp Volume(v), veh/h	238	0	152	671	2038	0
Grp Sat Flow(s),veh/h/ln	1640	1208	1555	1636	1721	1472
Q Serve(g_s), s	11.3	0.0	3.0	6.3	45.6	0.0
Cycle Q Clear(g_c), s	11.3	0.0	3.0	6.3	45.6	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	277		185	2270	1961	
V/C Ratio(X)	0.86		0.82	0.30	1.04	
Avail Cap(c_a), veh/h	513		382	2270	1961	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.3	0.0	19.5	4.7	17.2	0.0
Incr Delay (d2), s/veh	3.1	0.0	3.4	0.3	31.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	1.6	1.3	21.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.4	0.0	22.9	5.0	48.5	0.0
LnGrp LOS	D		C	A	F	
Approach Vol, veh/h	238	A		823	2038	A
Approach Delay, s/veh	35.4			8.3	48.5	
Approach LOS	D			A	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		61.5		18.5	9.9	51.6
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		44.0		25.0	15.0	24.0
Max Q Clear Time (g_c+I1), s		8.3		13.3	5.0	47.6
Green Ext Time (p_c), s		14.0		0.3	0.1	0.0

Intersection Summary		
HCM 6th Ctrl Delay		36.8
HCM 6th LOS		D

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑				
Traffic Volume (veh/h)	0	1653	0	0	1044	0	0	0	0	0	0	0
Future Volume (veh/h)	0	1653	0	0	1044	0	0	0	0	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	0	0	1870	0	0	1870	0			
Adj Flow Rate, veh/h	0	1797	0	0	1135	0	0	0	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0			
Cap, veh/h	0	1734	0	0	1734	0	0	0	0			
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00			
Sat Flow, veh/h	0	1870	0	0	1870	0		0				
Grp Volume(v), veh/h	0	1797	0	0	1135	0		0.0				
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	1870	0						
Q Serve(g_s), s	0.0	51.0	0.0	0.0	6.2	0.0						
Cycle Q Clear(g_c), s	0.0	51.0	0.0	0.0	6.2	0.0						
Prop In Lane	0.00		0.00	0.00		0.00						
Lane Grp Cap(c), veh/h	0	1734	0	0	1734	0						
V/C Ratio(X)	0.00	1.04	0.00	0.00	0.65	0.00						
Avail Cap(c_a), veh/h	0	1734	0	0	1734	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00						
Uniform Delay (d), s/veh	0.0	2.0	0.0	0.0	0.4	0.0						
Incr Delay (d2), s/veh	0.0	31.6	0.0	0.0	1.9	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	15.2	0.0	0.0	0.9	0.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	33.6	0.0	0.0	2.3	0.0						
LnGrp LOS	A	F	A	A	A	A						
Approach Vol, veh/h		1797			1135							
Approach Delay, s/veh		33.6			2.3							
Approach LOS		C			A							

Timer - Assigned Phs		4		8
Phs Duration (G+Y+Rc), s		55.0		55.0
Change Period (Y+Rc), s		4.0		4.0
Max Green Setting (Gmax), s		51.0		51.0
Max Q Clear Time (g_c+I1), s		53.0		8.2
Green Ext Time (p_c), s		0.0		13.1

Intersection Summary		
HCM 6th Ctrl Delay	21.5	
HCM 6th LOS	C	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1500	895	0	0	0
Future Vol, veh/h	0	1500	895	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	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	1630	973	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1788	487
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	815	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	0	-	-	0	72	526
Stage 1	0	-	-	0	327	-
Stage 2	0	-	-	0	396	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	72	526
Mov Cap-2 Maneuver	-	-	-	-	72	-
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	396	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	5	5	485	925	75
Future Vol, veh/h	40	5	5	485	925	75
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	43	5	5	527	1005	82

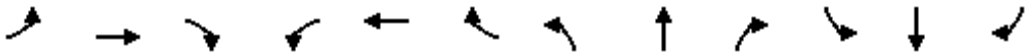
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1583	1046	1087	0	-	0
Stage 1	1046	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	120	277	642	-	-	-
Stage 1	338	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	119	277	642	-	-	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	50.1	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	642	-	127	-	-
HCM Lane V/C Ratio	0.008	-	0.385	-	-
HCM Control Delay (s)	10.7	0	50.1	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0	-	1.6	-	-

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	888	162	32	1202	67	166	39	60	52	10	25
Future Volume (veh/h)	20	888	162	32	1202	67	166	39	60	52	10	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1811	1811	1693	1663	1663	1900	1900	1796	1811	1900	1900
Adj Flow Rate, veh/h	36	925	180	74	1448	99	187	78	97	65	14	56
Peak Hour Factor	0.55	0.96	0.90	0.43	0.83	0.68	0.89	0.50	0.62	0.80	0.72	0.45
Percent Heavy Veh, %	5	6	6	14	16	16	0	0	7	6	0	0
Cap, veh/h	243	1867	363	453	2006	137	168	44	213	72	47	186
Arrive On Green	0.06	1.00	1.00	0.05	0.67	0.67	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1739	2872	559	1612	3001	204	761	317	1522	1171	332	1329
Grp Volume(v), veh/h	36	554	551	74	759	788	265	0	97	65	0	70
Grp Sat Flow(s),veh/h/ln	1739	1721	1711	1612	1580	1626	1078	0	1522	1171	0	1661
Q Serve(g_s), s	0.7	0.0	0.0	1.4	30.7	31.2	10.2	0.0	5.9	0.0	0.0	3.8
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.4	30.7	31.2	14.0	0.0	5.9	14.0	0.0	3.8
Prop In Lane	1.00		0.33	1.00		0.13	0.71		1.00	1.00		0.80
Lane Grp Cap(c), veh/h	243	1118	1112	453	1056	1087	212	0	213	72	0	233
V/C Ratio(X)	0.15	0.50	0.50	0.16	0.72	0.72	1.25	0.00	0.46	0.90	0.00	0.30
Avail Cap(c_a), veh/h	328	1118	1112	501	1056	1087	212	0	213	72	0	233
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	4.7	10.6	10.7	46.4	0.0	39.5	50.0	0.0	38.6
Incr Delay (d2), s/veh	0.2	1.2	1.2	0.2	4.2	4.2	144.6	0.0	6.9	81.2	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.4	0.4	0.4	9.8	10.2	13.8	0.0	2.6	3.2	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	1.2	1.2	4.9	14.8	14.9	191.0	0.0	46.4	131.2	0.0	41.9
LnGrp LOS	A	A	A	A	B	B	F	A	D	F	A	D
Approach Vol, veh/h		1141			1621			362			135	
Approach Delay, s/veh		1.4			14.4			152.2			84.9	
Approach LOS		A			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	71.0		19.0	8.2	72.8		19.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	8.0	62.0		14.0	8.0	62.0		14.0				
Max Q Clear Time (g_c+I1), s	3.4	2.0		16.0	2.7	33.2		16.0				
Green Ext Time (p_c), s	0.0	9.0		0.0	0.0	13.3		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	10

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	871	93	58	1266	45	49
Future Vol, veh/h	871	93	58	1266	45	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	170	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	75	50	93	81	79
Heavy Vehicles, %	5	6	50	12	3	5
Mvmt Flow	968	124	116	1361	56	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1092	0	1943	546
Stage 1	-	-	-	-	1030	-
Stage 2	-	-	-	-	913	-
Critical Hdwy	-	-	5.1	-	6.86	7
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	2.7	-	3.53	3.35
Pot Cap-1 Maneuver	-	-	416	-	56	474
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	349	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	416	-	~ 40	474
Mov Cap-2 Maneuver	-	-	-	-	~ 40	-
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	212.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	40	474	-	-	416	-
HCM Lane V/C Ratio	1.389	0.131	-	-	0.279	-
HCM Control Delay (s)	$ 435.3	13.7	-	-	17	-
HCM Lane LOS	F	B	-	-	C	-
HCM 95th %tile Q(veh)	5.6	0.4	-	-	1.1	-

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	966	15	5	1307	3	0
Future Vol, veh/h	966	15	5	1307	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	25	86	86	25	38
Heavy Vehicles, %	6	6	14	14	0	0
Mvmt Flow	996	60	6	1520	12	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1056	0	2558	528
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	1532	-
Critical Hdwy	-	-	4.31	-	6.6	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.333	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	602	-	26	500
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	199	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	602	-	24	500
Mov Cap-2 Maneuver	-	-	-	-	24	-
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	199	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	257.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	24	-	-	602	-
HCM Lane V/C Ratio	0.5	-	-	0.01	-
HCM Control Delay (s)	257.9	-	-	11	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	927	1275	5	7	43
Future Vol, veh/h	14	927	1275	5	7	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	70	95	90	50	50	84
Heavy Vehicles, %	38	6	12	12	100	62
Mvmt Flow	20	976	1417	10	14	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1427	0	-	0	2438	1422
Stage 1	-	-	-	-	1422	-
Stage 2	-	-	-	-	1016	-
Critical Hdwy	4.48	-	-	-	7.4	6.82
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	2.542	-	-	-	4.4	3.858
Pot Cap-1 Maneuver	381	-	-	-	17	123
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	235	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	381	-	-	-	16	123
Mov Cap-2 Maneuver	-	-	-	-	16	-
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	235	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	$ 362
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	381	-	-	-	50
HCM Lane V/C Ratio	0.052	-	-	-	1.304
HCM Control Delay (s)	15	-	-	-	$ 362
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	6

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	294	670	90	393	891	74
Future Volume (veh/h)	294	670	90	393	891	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1870	1648	1604	1811	1693
Adj Flow Rate, veh/h	327	705	120	442	979	128
Peak Hour Factor	0.90	0.95	0.75	0.89	0.91	0.58
Percent Heavy Veh, %	14	2	17	20	6	14
Cap, veh/h	541	1199	253	716	754	627
Arrive On Green	0.32	0.32	0.07	0.45	0.44	0.44
Sat Flow, veh/h	1693	1585	1570	1604	1725	1434
Grp Volume(v), veh/h	327	705	120	442	979	128
Grp Sat Flow(s),veh/h/ln	1693	1585	1570	1604	1725	1434
Q Serve(g_s), s	16.8	20.1	5.0	21.7	45.0	5.7
Cycle Q Clear(g_c), s	16.8	20.1	5.0	21.7	45.0	5.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	541	1199	253	716	754	627
V/C Ratio(X)	0.60	0.59	0.47	0.62	1.30	0.20
Avail Cap(c_a), veh/h	541	1199	298	716	754	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	5.5	21.8	21.8	29.0	17.9
Incr Delay (d2), s/veh	5.0	2.1	0.5	4.0	144.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	18.5	1.8	8.4	47.6	5.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.5	7.6	22.4	25.7	173.3	18.0
LnGrp LOS	C	A	C	C	F	B
Approach Vol, veh/h	1032			562	1107	
Approach Delay, s/veh	16.1			25.0	155.3	
Approach LOS	B			C	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		52.0		51.0	13.1	38.9
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		46.0		45.0	10.0	30.0
Max Q Clear Time (g_c+I1), s		23.7		47.0	7.0	22.1
Green Ext Time (p_c), s		1.6		0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	75.0
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	287	3	0	420	3	2	0	3	11	0	29
Future Vol, veh/h	9	287	3	0	420	3	2	0	3	11	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	68	97	50	42	77	75	75	25	38	75	25	83
Heavy Vehicles, %	60	8	2	0	14	54	0	0	0	56	0	90
Mvmt Flow	13	296	6	0	545	4	3	0	8	15	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	549	0	0	302	0	0	890	874	299	876	875	547
Stage 1	-	-	-	-	-	-	325	325	-	547	547	-
Stage 2	-	-	-	-	-	-	565	549	-	329	328	-
Critical Hdwy	4.7	-	-	4.1	-	-	7.1	6.5	6.2	7.66	6.5	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.66	5.5	-
Follow-up Hdwy	2.74	-	-	2.2	-	-	3.5	4	3.3	4.004	4	4.11
Pot Cap-1 Maneuver	785	-	-	1270	-	-	266	290	745	218	290	400
Stage 1	-	-	-	-	-	-	692	653	-	436	521	-
Stage 2	-	-	-	-	-	-	513	520	-	584	651	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	785	-	-	1270	-	-	240	285	745	213	285	400
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	285	-	213	285	-
Stage 1	-	-	-	-	-	-	680	642	-	429	521	-
Stage 2	-	-	-	-	-	-	468	520	-	568	640	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	12.6	18.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	487	785	-	-	1270	-	-	318
HCM Lane V/C Ratio	0.022	0.017	-	-	-	-	-	0.156
HCM Control Delay (s)	12.6	9.7	-	-	0	-	-	18.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	245	72	13	330	0	82	0	41	0	0	0
Future Vol, veh/h	0	245	72	13	330	0	82	0	41	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	92	59	68	84	92	80	25	75	38	92	38
Heavy Vehicles, %	11	11	7	40	22	2	44	0	19	100	0	100
Mvmt Flow	0	266	122	19	393	0	103	0	55	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	388	0	0	758	758	327	786	-	393
Stage 1	-	-	-	-	-	-	327	327	-	431	-	-
Stage 2	-	-	-	-	-	-	431	431	-	355	-	-
Critical Hdwy	-	-	-	4.5	-	-	7.54	6.5	6.39	8.1	-	7.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.5	-	7.1	-	-
Follow-up Hdwy	-	-	-	2.56	-	-	3.896	4	3.471	4.4	-	4.2
Pot Cap-1 Maneuver	0	-	-	991	-	0	277	339	677	217	0	487
Stage 1	0	-	-	-	-	0	606	651	-	450	0	-
Stage 2	0	-	-	-	-	0	528	586	-	501	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	991	-	-	273	333	677	197	-	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	429	-	294	-	-
Stage 1	-	-	-	-	-	-	606	651	-	450	-	-
Stage 2	-	-	-	-	-	-	518	575	-	461	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	17.4	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	447	-	-	991	-	-	-
HCM Lane V/C Ratio	0.352	-	-	0.019	-	-	-
HCM Control Delay (s)	17.4	-	-	8.7	-	0	0
HCM Lane LOS	C	-	-	A	-	A	A
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	258	21	17	307	44	17
Future Vol, veh/h	258	21	17	307	44	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	50	75	81	44	75
Heavy Vehicles, %	19	0	0	17	0	0
Mvmt Flow	311	42	23	379	100	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	353	0	757	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	425	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1217	-	378	714
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	369	714
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	507	-	-	1217	-
HCM Lane V/C Ratio	0.242	-	-	0.019	-
HCM Control Delay (s)	14.4	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	8	22	322	2	52
Future Vol, veh/h	248	8	22	322	2	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	25	42	79	75	40
Heavy Vehicles, %	18	0	0	17	0	0
Mvmt Flow	292	32	52	408	3	130

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	324	0	820	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1247	-	347	737
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	606	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1247	-	332	737
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	606	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	719	-	-	1247	-
HCM Lane V/C Ratio	0.185	-	-	0.042	-
HCM Control Delay (s)	11.1	-	-	8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

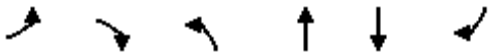
Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	163	4	9	219	104	3	0	6	83	2	105
Future Vol, veh/h	112	163	4	9	219	104	3	0	6	83	2	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	130	-	-	125	-	0	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	83	25	25	80	79	38	25	63	77	50	78
Heavy Vehicles, %	23	16	0	0	13	14	0	0	0	49	0	22
Mvmt Flow	124	196	16	36	274	132	8	0	10	108	4	135

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	406	0	0	212	0	0	934	930	204	803	806	274
Stage 1	-	-	-	-	-	-	452	452	-	346	346	-
Stage 2	-	-	-	-	-	-	482	478	-	457	460	-
Critical Hdwy	4.33	-	-	4.1	-	-	7.1	6.5	6.2	7.59	6.5	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.59	5.5	-
Follow-up Hdwy	2.407	-	-	2.2	-	-	3.5	4	3.3	3.941	4	3.498
Pot Cap-1 Maneuver	1048	-	-	1370	-	-	248	269	842	253	318	719
Stage 1	-	-	-	-	-	-	591	574	-	582	639	-
Stage 2	-	-	-	-	-	-	569	559	-	503	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	1370	-	-	178	231	842	223	273	719
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	231	-	223	273	-
Stage 1	-	-	-	-	-	-	521	506	-	513	622	-
Stage 2	-	-	-	-	-	-	447	544	-	438	502	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	0.6	17.2	22.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	313	1048	-	-	1370	-	-	224	719
HCM Lane V/C Ratio	0.056	0.119	-	-	0.026	-	-	0.499	0.187
HCM Control Delay (s)	17.2	8.9	-	-	7.7	-	-	36.1	11.2
HCM Lane LOS	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.1	-	-	2.5	0.7



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	158	123	225	1677	693	86
Future Volume (veh/h)	158	123	225	1677	693	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1722	1426	1633	1722	1811	1737
Adj Flow Rate, veh/h	216	0	317	1803	770	0
Peak Hour Factor	0.73	0.85	0.71	0.93	0.90	0.84
Percent Heavy Veh, %	12	32	18	12	6	11
Cap, veh/h	254		507	2315	1836	
Arrive On Green	0.16	0.00	0.11	0.71	0.53	0.00
Sat Flow, veh/h	1640	1208	1555	3358	3532	1472
Grp Volume(v), veh/h	216	0	317	1803	770	0
Grp Sat Flow(s),veh/h/ln	1640	1208	1555	1636	1721	1472
Q Serve(g_s), s	10.3	0.0	6.8	28.7	10.8	0.0
Cycle Q Clear(g_c), s	10.3	0.0	6.8	28.7	10.8	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	254		507	2315	1836	
V/C Ratio(X)	0.85		0.63	0.78	0.42	
Avail Cap(c_a), veh/h	513		625	2315	1836	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.9	0.0	7.6	7.6	11.2	0.0
Incr Delay (d2), s/veh	3.1	0.0	0.5	2.7	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.4	5.9	3.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.0	0.0	8.1	10.3	11.9	0.0
LnGrp LOS	D		A	B	B	
Approach Vol, veh/h	216	A		2120	770	A
Approach Delay, s/veh	36.0			10.0	11.9	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		62.6		17.4	13.9	48.7
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		44.0		25.0	15.0	24.0
Max Q Clear Time (g_c+I1), s		30.7		12.3	8.8	12.8
Green Ext Time (p_c), s		12.9		0.3	0.2	7.4

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑				
Traffic Volume (veh/h)	0	927	0	0	1284	0	0	0	0	0	0	0
Future Volume (veh/h)	0	927	0	0	1284	0	0	0	0	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1870	0	0	1870	0	0	1870	0			
Adj Flow Rate, veh/h	0	1008	0	0	1396	0	0	0	0			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	0	0	2	0	0	2	0			
Cap, veh/h	0	1734	0	0	1734	0	0	0	0			
Arrive On Green	0.00	0.93	0.00	0.00	0.93	0.00	0.00	0.00	0.00			
Sat Flow, veh/h	0	1870	0	0	1870	0		0				
Grp Volume(v), veh/h	0	1008	0	0	1396	0		0.0				
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	1870	0						
Q Serve(g_s), s	0.0	4.7	0.0	0.0	11.8	0.0						
Cycle Q Clear(g_c), s	0.0	4.7	0.0	0.0	11.8	0.0						
Prop In Lane	0.00		0.00	0.00		0.00						
Lane Grp Cap(c), veh/h	0	1734	0	0	1734	0						
V/C Ratio(X)	0.00	0.58	0.00	0.00	0.80	0.00						
Avail Cap(c_a), veh/h	0	1734	0	0	1734	0						
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00						
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00						
Uniform Delay (d), s/veh	0.0	0.3	0.0	0.0	0.6	0.0						
Incr Delay (d2), s/veh	0.0	1.4	0.0	0.0	4.1	0.0						
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0						
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.0	0.0	2.0	0.0						
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.7	0.0	0.0	4.7	0.0						
LnGrp LOS	A	A	A	A	A	A						
Approach Vol, veh/h		1008			1396							
Approach Delay, s/veh		1.7			4.7							
Approach LOS		A			A							

Timer - Assigned Phs		4			8				
Phs Duration (G+Y+Rc), s		55.0			55.0				
Change Period (Y+Rc), s		4.0			4.0				
Max Green Setting (Gmax), s		51.0			51.0				
Max Q Clear Time (g_c+I1), s		6.7			13.8				
Green Ext Time (p_c), s		10.1			20.5				

Intersection Summary									
HCM 6th Ctrl Delay	3.4								
HCM 6th LOS	A								

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↱	↗
Traffic Vol, veh/h	0	964	1266	0	0	0
Future Vol, veh/h	0	964	1266	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	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	1048	1376	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	1900	688
Stage 1	-	-	-	-	1376	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	0	-	-	0	61	389
Stage 1	0	-	-	0	200	-
Stage 2	0	-	-	0	559	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	61	389
Mov Cap-2 Maneuver	-	-	-	-	61	-
Stage 1	-	-	-	-	200	-
Stage 2	-	-	-	-	559	-

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

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	15	10	770	645	35
Future Vol, veh/h	30	15	10	770	645	35
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	16	11	837	701	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1579	720	739	0	-	0
Stage 1	720	-	-	-	-	-
Stage 2	859	-	-	-	-	-
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	120	428	867	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	428	867	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	415	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	38.9	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	867	-	154	-	-
HCM Lane V/C Ratio	0.013	-	0.318	-	-
HCM Control Delay (s)	9.2	0	38.9	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.3	-	-

APPENDIX D 2040 BUILD TRAFFIC LOS WORKSHEETS

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	1409	197	39	940	81	128	3	43	182	47	47
Future Volume (veh/h)	58	1409	197	39	940	81	128	3	43	182	47	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1781	1781	1841	1841	1841	1796	1796	1737	1826	1470	1470
Adj Flow Rate, veh/h	77	1601	277	48	1044	101	142	4	52	230	75	98
Peak Hour Factor	0.75	0.88	0.71	0.81	0.90	0.80	0.90	0.78	0.82	0.79	0.63	0.48
Percent Heavy Veh, %	23	8	8	4	4	4	7	7	11	5	29	29
Cap, veh/h	371	1811	305	150	1997	193	162	3	307	60	121	157
Arrive On Green	0.04	0.63	0.63	0.07	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1485	2897	489	1753	3222	312	496	14	1472	1316	578	756
Grp Volume(v), veh/h	77	918	960	48	566	579	146	0	52	230	0	173
Grp Sat Flow(s),veh/h/ln	1485	1692	1693	1753	1749	1785	510	0	1472	1316	0	1334
Q Serve(g_s), s	2.2	53.4	58.9	1.2	0.0	0.0	10.8	0.0	3.5	0.0	0.0	14.2
Cycle Q Clear(g_c), s	2.2	53.4	58.9	1.2	0.0	0.0	25.0	0.0	3.5	25.0	0.0	14.2
Prop In Lane	1.00		0.29	1.00		0.17	0.97		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	371	1058	1059	150	1084	1106	165	0	307	60	0	278
V/C Ratio(X)	0.21	0.87	0.91	0.32	0.52	0.52	0.88	0.00	0.17	3.83	0.00	0.62
Avail Cap(c_a), veh/h	400	1058	1059	165	1084	1106	165	0	307	60	0	278
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	18.4	19.5	24.1	0.0	0.0	56.1	0.0	39.0	60.0	0.0	43.2
Incr Delay (d2), s/veh	0.2	7.3	9.8	1.2	1.8	1.8	38.6	0.0	0.3	1314.4	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	20.5	23.1	0.8	0.5	0.5	6.2	0.0	1.3	23.7	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	25.7	29.3	25.3	1.8	1.8	94.7	0.0	39.2	1374.4	0.0	47.5
LnGrp LOS	A	C	C	C	A	A	F	A	D	F	A	D
Approach Vol, veh/h		1955			1193			198			403	
Approach Delay, s/veh		26.7			2.7			80.1			804.8	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	81.0		30.0	9.6	80.4		30.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	5.0	6.0		5.0				
Max Green Setting (Gmax), s	5.0	74.0		25.0	7.0	72.0		25.0				
Max Q Clear Time (g_c+I1), s	3.2	60.9		27.0	4.2	2.0		27.0				
Green Ext Time (p_c), s	0.0	10.0		0.0	0.0	9.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	105.5	
HCM 6th LOS	F	

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	88.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1475	25	3	895	0	85	0	56	0	0	0
Future Vol, veh/h	0	1475	25	3	895	0	85	0	56	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	185	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	91	76	88	91	92	67	92	82	92	92	92
Heavy Vehicles, %	0	10	3	7	5	0	3	0	3	2	2	2
Mvmt Flow	0	1621	33	3	984	0	127	0	68	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1654	0	0	2136	-	827	1801	-	492
Stage 1	-	-	-	-	-	-	1638	-	-	990	-	-
Stage 2	-	-	-	-	-	-	498	-	-	811	-	-
Critical Hdwy	-	-	-	4.24	-	-	7.56	-	6.96	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	-	-	6.54	-	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.53	-	3.33	3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	364	-	0	~ 27	0	313	50	0	522
Stage 1	0	-	-	-	-	0	~ 104	0	-	264	0	-
Stage 2	0	-	-	-	-	0	520	0	-	339	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	364	-	-	~ 27	-	313	39	-	522
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 27	-	-	39	-	-
Stage 1	-	-	-	-	-	-	~ 104	-	-	264	-	-
Stage 2	-	-	-	-	-	-	516	-	-	265	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	$ 1279.5	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	27	313	-	-	364	-	-	-
HCM Lane V/C Ratio	4.699	0.218	-	-	0.009	-	-	-
HCM Control Delay (s)	$ 1957.7	19.7	-	-	15	-	0	0
HCM Lane LOS	F	C	-	-	B	-	A	A
HCM 95th %tile Q(veh)	15.5	0.8	-	-	0	-	-	-

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1683	2	0	1095	0	4
Future Vol, veh/h	1683	2	0	1095	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	92	50	92	38	25
Heavy Vehicles, %	8	0	0	4	0	0
Mvmt Flow	1849	2	0	1190	0	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	2445	926
Stage 1	-	-	-	-	1850	-
Stage 2	-	-	-	-	595	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	0	-	27	274
Stage 1	-	-	0	-	113	-
Stage 2	-	-	0	-	519	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	27	274
Mov Cap-2 Maneuver	-	-	-	-	27	-
Stage 1	-	-	-	-	113	-
Stage 2	-	-	-	-	519	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	274	-	-	-
HCM Lane V/C Ratio	0.058	-	-	-
HCM Control Delay (s)	19	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	451	1204	49	537	507	51
Future Volume (veh/h)	451	1204	49	537	507	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1856	1781	1826	1870	1707
Adj Flow Rate, veh/h	518	1267	83	597	611	57
Peak Hour Factor	0.87	0.95	0.59	0.90	0.83	0.90
Percent Heavy Veh, %	16	3	8	5	2	13
Cap, veh/h	859	2214	253	1126	979	410
Arrive On Green	0.86	0.86	0.05	0.62	0.28	0.28
Sat Flow, veh/h	1663	2768	1697	1826	3456	1447
Grp Volume(v), veh/h	518	1267	83	597	611	57
Grp Sat Flow(s),veh/h/ln	1663	1384	1697	1826	1728	1447
Q Serve(g_s), s	10.7	13.2	2.6	22.3	18.5	3.5
Cycle Q Clear(g_c), s	10.7	13.2	2.6	22.3	18.5	3.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	859	2214	253	1126	979	410
V/C Ratio(X)	0.60	0.57	0.33	0.53	0.62	0.14
Avail Cap(c_a), veh/h	859	2214	253	1126	979	410
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.61	0.61	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.7	1.1	12.0	13.1	37.4	32.1
Incr Delay (d2), s/veh	1.9	0.7	0.3	0.2	3.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.8	0.9	8.4	8.1	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.6	1.7	12.2	13.3	40.4	32.8
LnGrp LOS	A	A	B	B	D	C
Approach Vol, veh/h	1785			680	668	
Approach Delay, s/veh	3.1			13.2	39.8	
Approach LOS	A			B	D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		80.0		40.0	12.0	68.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		74.0		34.0	6.0	62.0
Max Q Clear Time (g_c+I1), s		24.3		20.5	4.6	15.2
Green Ext Time (p_c), s		2.4		1.2	0.0	6.3

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	311	3	9	385	18	5	0	2	13	0	14
Future Vol, veh/h	22	311	3	9	385	18	5	0	2	13	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	56	97	92	25	86	56	25	25	25	50	25	67
Heavy Vehicles, %	67	10	0	0	6	100	0	0	0	25	0	38
Mvmt Flow	39	321	3	36	448	32	20	0	8	26	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	480	0	0	324	0	0	948	953	323	941	938	464
Stage 1	-	-	-	-	-	-	401	401	-	536	536	-
Stage 2	-	-	-	-	-	-	547	552	-	405	402	-
Critical Hdwy	4.77	-	-	4.1	-	-	7.1	6.5	6.2	7.35	6.5	6.58
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.35	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.35	5.5	-
Follow-up Hdwy	2.803	-	-	2.2	-	-	3.5	4	3.3	3.725	4	3.642
Pot Cap-1 Maneuver	815	-	-	1247	-	-	243	261	723	221	266	530
Stage 1	-	-	-	-	-	-	630	604	-	489	527	-
Stage 2	-	-	-	-	-	-	525	518	-	579	604	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	815	-	-	1247	-	-	216	236	723	203	240	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	236	-	203	240	-
Stage 1	-	-	-	-	-	-	593	569	-	461	506	-
Stage 2	-	-	-	-	-	-	484	497	-	539	569	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.6	19.9	20.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	270	815	-	-	1247	-	-	280
HCM Lane V/C Ratio	0.104	0.048	-	-	0.029	-	-	0.167
HCM Control Delay (s)	19.9	9.6	0	-	8	-	-	20.4
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕		↰		↱
Traffic Vol, veh/h	0	291	43	32	367	0	47	0	51	3	0	2
Future Vol, veh/h	0	291	43	32	367	0	47	0	51	3	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	88	66	65	89	92	85	25	75	25	25	25
Heavy Vehicles, %	0	14	23	22	11	2	5	0	7	0	0	0
Mvmt Flow	0	331	65	49	412	0	55	0	68	12	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	396	0	0	878	874	364	908	-	412
Stage 1	-	-	-	-	-	-	364	364	-	510	-	-
Stage 2	-	-	-	-	-	-	514	510	-	398	-	-
Critical Hdwy	-	-	-	4.32	-	-	7.15	6.5	6.27	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	-	-
Follow-up Hdwy	-	-	-	2.398	-	-	3.545	4	3.363	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1062	-	0	265	290	670	258	0	644
Stage 1	0	-	-	-	-	0	649	627	-	550	0	-
Stage 2	0	-	-	-	-	0	538	541	-	632	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1062	-	-	250	273	670	221	-	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	368	379	-	345	-	-
Stage 1	-	-	-	-	-	-	649	627	-	550	-	-
Stage 2	-	-	-	-	-	-	499	509	-	568	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	14.8	13.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	490	-	-	1062	-	345	644
HCM Lane V/C Ratio	0.252	-	-	0.046	-	0.035	0.012
HCM Control Delay (s)	14.8	-	-	8.6	-	15.8	10.7
HCM Lane LOS	B	-	-	A	-	C	B
HCM 95th %tile Q(veh)	1	-	-	0.1	-	0.1	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	430	50	14	554	15	13
Future Vol, veh/h	430	50	14	554	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	57	75	90	50	81
Heavy Vehicles, %	8	0	0	8	6	0
Mvmt Flow	473	88	19	616	30	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	561	0	1171	517
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	-	-	4.1	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.3
Pot Cap-1 Maneuver	-	-	1020	-	209	562
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	510	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1020	-	205	562
Mov Cap-2 Maneuver	-	-	-	-	335	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	510	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	-	-	1020	-
HCM Lane V/C Ratio	0.118	-	-	0.018	-
HCM Control Delay (s)	15.5	-	-	8.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	394	0	66	526	3	11
Future Vol, veh/h	394	0	66	526	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	50	65	88	38	45
Heavy Vehicles, %	8	0	0	8	0	0
Mvmt Flow	424	0	102	598	8	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	424	0	1226	424
Stage 1	-	-	-	-	424	-
Stage 2	-	-	-	-	802	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	1146	-	199	634
Stage 1	-	0	-	-	664	-
Stage 2	-	0	-	-	445	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	1146	-	173	634
Mov Cap-2 Maneuver	-	-	-	-	267	-
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	445	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	475	-	1146	-
HCM Lane V/C Ratio	0.068	-	0.089	-
HCM Control Delay (s)	13.1	-	8.4	-
HCM Lane LOS	B	-	A	-
HCM 95th %tile Q(veh)	0.2	-	0.3	-

Intersection	
Int Delay, s/veh	44.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	364	0	2	291	77	5	0	6	125	2	250
Future Vol, veh/h	66	364	0	2	291	77	5	0	6	125	2	250
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	135	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	91	38	75	85	79	50	25	50	80	38	78
Heavy Vehicles, %	18	4	0	0	5	26	0	0	0	7	0	5
Mvmt Flow	78	400	0	3	342	97	10	0	12	156	5	321

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	-	400	0	0	1116	1001	400	910	904	342
Stage 1	-	-	-	-	-	-	556	556	-	348	348	-
Stage 2	-	-	-	-	-	-	560	445	-	562	556	-
Critical Hdwy	4.28	-	-	4.1	-	-	7.1	6.5	6.2	7.17	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.17	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.17	5.5	-
Follow-up Hdwy	2.362	-	-	2.2	-	-	3.5	4	3.3	3.563	4	3.345
Pot Cap-1 Maneuver	1041	-	0	1170	-	-	187	245	654	250	279	694
Stage 1	-	-	0	-	-	-	519	516	-	658	638	-
Stage 2	-	-	0	-	-	-	516	578	-	503	516	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1041	-	-	1170	-	-	92	221	654	227	251	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	221	-	227	251	-
Stage 1	-	-	-	-	-	-	469	466	-	595	636	-
Stage 2	-	-	-	-	-	-	275	576	-	446	466	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	28.8	129.8
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	173	1041	-	1170	-	-	412
HCM Lane V/C Ratio	0.127	0.075	-	0.002	-	-	1.17
HCM Control Delay (s)	28.8	8.7	-	8.1	-	-	129.8
HCM Lane LOS	D	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.4	0.2	-	0	-	-	18.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	193	108	624	1834	193
Future Volume (veh/h)	174	193	108	624	1834	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1781	1678	1826	1767	1781
Adj Flow Rate, veh/h	202	0	130	657	1910	0
Peak Hour Factor	0.86	0.95	0.83	0.95	0.96	0.75
Percent Heavy Veh, %	3	8	15	5	9	8
Cap, veh/h	229		185	2702	2346	
Arrive On Green	0.13	0.00	0.04	0.78	0.70	0.00
Sat Flow, veh/h	1767	1510	1598	3561	3445	1510
Grp Volume(v), veh/h	202	0	130	657	1910	0
Grp Sat Flow(s),veh/h/ln	1767	1510	1598	1735	1678	1510
Q Serve(g_s), s	13.5	0.0	2.6	6.2	47.7	0.0
Cycle Q Clear(g_c), s	13.5	0.0	2.6	6.2	47.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	229		185	2702	2346	
V/C Ratio(X)	0.88		0.70	0.24	0.81	
Avail Cap(c_a), veh/h	265		243	2702	2346	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.3	0.0	25.8	3.6	12.6	0.0
Incr Delay (d2), s/veh	23.2	0.0	3.2	0.2	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	2.7	1.4	14.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.5	0.0	29.1	3.8	15.9	0.0
LnGrp LOS	E		C	A	B	
Approach Vol, veh/h	202	A		787	1910	A
Approach Delay, s/veh	74.5			8.0	15.9	
Approach LOS	E			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		99.5		20.5	9.6	89.9
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		91.0		18.0	9.0	77.0
Max Q Clear Time (g_c+I1), s		8.2		15.5	4.6	49.7
Green Ext Time (p_c), s		17.3		0.1	0.0	26.2

Intersection Summary		
HCM 6th Ctrl Delay		17.8
HCM 6th LOS		B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1653	31	7	1051	84	64	0	7	74	0	86
Future Volume (veh/h)	150	1653	31	7	1051	84	64	0	7	74	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	1797	34	8	1142	91	70	0	8	80	0	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	2218	42	218	2209	985	402	3	40	245	15	252
Arrive On Green	1.00	1.00	1.00	0.62	0.62	0.62	0.30	0.00	0.30	0.30	0.00	0.30
Sat Flow, veh/h	452	3568	67	254	3554	1585	1137	10	131	664	50	830
Grp Volume(v), veh/h	163	893	938	8	1142	91	78	0	0	173	0	0
Grp Sat Flow(s),veh/h/ln	452	1777	1858	254	1777	1585	1279	0	0	1545	0	0
Q Serve(g_s), s	29.7	0.0	0.0	1.5	21.5	2.8	0.0	0.0	0.0	3.6	0.0	0.0
Cycle Q Clear(g_c), s	51.2	0.0	0.0	1.5	21.5	2.8	6.1	0.0	0.0	9.6	0.0	0.0
Prop In Lane	1.00		0.04	1.00		1.00	0.90		0.10	0.46		0.54
Lane Grp Cap(c), veh/h	260	1105	1155	218	2209	985	445	0	0	512	0	0
V/C Ratio(X)	0.63	0.81	0.81	0.04	0.52	0.09	0.18	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	305	1281	1339	243	2562	1143	445	0	0	512	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	8.9	12.7	9.1	31.2	0.0	0.0	32.3	0.0	0.0
Incr Delay (d2), s/veh	3.1	3.5	3.4	0.1	0.1	0.0	0.9	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.1	1.1	0.1	7.9	0.9	1.8	0.0	0.0	4.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	3.5	3.4	8.9	12.8	9.1	32.0	0.0	0.0	34.1	0.0	0.0
LnGrp LOS	B	A	A	A	B	A	C	A	A	C	A	A
Approach Vol, veh/h		1994			1241			78			173	
Approach Delay, s/veh		4.0			12.5			32.0			34.1	
Approach LOS		A			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	40.9	79.1	40.9	79.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	86.5	24.5	86.5
Max Q Clear Time (g_c+I1), s	8.1	53.2	11.6	23.5
Green Ext Time (p_c), s	0.3	21.4	0.8	11.5

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	5	5	485	925	75
Future Vol, veh/h	40	5	5	485	925	75
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	-	-	-	-	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	43	5	5	527	1005	82

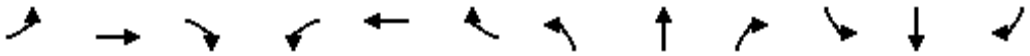
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1542	1005	1087	0	-	0
Stage 1	1005	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	127	293	642	-	-	-
Stage 1	354	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	293	642	-	-	-
Mov Cap-2 Maneuver	126	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	46.1	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	642	-	135	-	-
HCM Lane V/C Ratio	0.008	-	0.362	-	-
HCM Control Delay (s)	10.7	0	46.1	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.5	-	-

HCM 6th Signalized Intersection Summary
1: Brighton Rd. & E. 88th Ave.

09/17/2019



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	888	162	32	1202	67	166	39	60	52	10	25
Future Volume (veh/h)	20	888	162	32	1202	67	166	39	60	52	10	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1781	1781	1841	1841	1841	1796	1796	1737	1826	1470	1470
Adj Flow Rate, veh/h	27	1009	228	40	1336	84	184	50	73	66	16	52
Peak Hour Factor	0.75	0.88	0.71	0.81	0.90	0.80	0.90	0.78	0.82	0.79	0.63	0.48
Percent Heavy Veh, %	23	8	8	4	4	4	7	7	11	5	29	29
Cap, veh/h	289	1369	308	69	1542	97	283	50	317	111	65	213
Arrive On Green	0.06	0.50	0.50	0.08	0.92	0.92	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1485	2744	618	1753	3342	210	855	232	1472	1238	304	988
Grp Volume(v), veh/h	27	621	616	40	698	722	234	0	73	66	0	68
Grp Sat Flow(s),veh/h/ln	1485	1692	1670	1753	1749	1803	1088	0	1472	1238	0	1292
Q Serve(g_s), s	0.0	18.9	19.0	1.4	9.9	10.1	11.1	0.0	2.7	0.0	0.0	2.8
Cycle Q Clear(g_c), s	0.0	18.9	19.0	1.4	9.9	10.1	14.0	0.0	2.7	14.0	0.0	2.8
Prop In Lane	1.00		0.37	1.00		0.12	0.79		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	289	844	833	69	807	832	333	0	317	111	0	278
V/C Ratio(X)	0.09	0.74	0.74	0.58	0.86	0.87	0.70	0.00	0.23	0.59	0.00	0.24
Avail Cap(c_a), veh/h	312	844	833	135	807	832	333	0	317	111	0	278
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	12.9	12.9	29.4	1.7	1.7	26.9	0.0	21.1	32.5	0.0	21.1
Incr Delay (d2), s/veh	0.1	4.6	4.8	7.4	11.9	11.9	6.5	0.0	0.4	8.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	6.7	6.7	0.7	3.3	3.4	3.9	0.0	0.9	1.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.7	17.5	17.7	36.8	13.6	13.6	33.4	0.0	21.4	40.7	0.0	21.6
LnGrp LOS	B	B	B	D	B	B	C	A	C	D	A	C
Approach Vol, veh/h		1264			1460			307			134	
Approach Delay, s/veh		17.6			14.2			30.5			31.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	38.4		19.0	10.0	36.0		19.0				
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0	* 6		5.0				
Max Green Setting (Gmax), s	5.0	30.0		14.0	5.0	* 30		14.0				
Max Q Clear Time (g_c+I1), s	3.4	21.0		16.0	2.0	12.1		16.0				
Green Ext Time (p_c), s	0.0	5.0		0.0	0.0	9.1		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

User approved ignoring U-Turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	13.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↰	↑↑		↰		↱	↰		↱
Traffic Vol, veh/h	0	871	93	63	1266	0	45	0	49	0	0	0
Future Vol, veh/h	0	871	93	63	1266	0	45	0	49	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	185	-	-	0	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	91	76	88	91	92	67	92	82	92	92	92
Heavy Vehicles, %	0	10	3	7	5	0	3	0	3	2	2	2
Mvmt Flow	0	957	122	72	1391	0	67	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1079	0	0	1858	-	540	2014	-	696
Stage 1	-	-	-	-	-	-	1018	-	-	1535	-	-
Stage 2	-	-	-	-	-	-	840	-	-	479	-	-
Critical Hdwy	-	-	-	4.24	-	-	7.56	-	6.96	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	-	-	6.54	-	-
Follow-up Hdwy	-	-	-	2.27	-	-	3.53	-	3.33	3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	613	-	0	~ 45	0	484	34	0	384
Stage 1	0	-	-	-	-	0	252	0	-	122	0	-
Stage 2	0	-	-	-	-	0	324	0	-	537	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	613	-	-	~ 41	-	484	27	-	384
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 41	-	-	27	-	-
Stage 1	-	-	-	-	-	-	252	-	-	122	-	-
Stage 2	-	-	-	-	-	-	286	-	-	471	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	286	0
HCM LOS			F	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	41	484	-	-	613	-	-	-
HCM Lane V/C Ratio	1.638	0.123	-	-	0.117	-	-	-
HCM Control Delay (s)	$ 528.5	13.5	-	-	11.6	-	0	0
HCM Lane LOS	F	B	-	-	B	-	A	A
HCM 95th %tile Q(veh)	6.9	0.4	-	-	0.4	-	-	-

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	966	15	0	1312	0	3
Future Vol, veh/h	966	15	0	1312	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	92	50	92	38	25
Heavy Vehicles, %	8	0	0	4	0	0
Mvmt Flow	1062	16	0	1426	0	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	1783	539
Stage 1	-	-	-	-	1070	-
Stage 2	-	-	-	-	713	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	0	-	75	492
Stage 1	-	-	0	-	295	-
Stage 2	-	-	0	-	452	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	75	492
Mov Cap-2 Maneuver	-	-	-	-	75	-
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	492	-	-	-
HCM Lane V/C Ratio	0.024	-	-	-
HCM Control Delay (s)	12.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	294	670	90	393	891	74
Future Volume (veh/h)	294	670	90	393	891	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1663	1856	1781	1826	1870	1707
Adj Flow Rate, veh/h	338	705	153	437	1073	82
Peak Hour Factor	0.87	0.95	0.59	0.90	0.83	0.90
Percent Heavy Veh, %	16	3	8	5	2	13
Cap, veh/h	435	1746	309	815	1276	534
Arrive On Green	0.35	0.35	0.09	0.45	0.37	0.37
Sat Flow, veh/h	1663	2768	1697	1826	3456	1447
Grp Volume(v), veh/h	338	705	153	437	1073	82
Grp Sat Flow(s),veh/h/ln	1663	1384	1697	1826	1728	1447
Q Serve(g_s), s	11.8	8.2	4.0	11.3	18.5	2.5
Cycle Q Clear(g_c), s	11.8	8.2	4.0	11.3	18.5	2.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	435	1746	309	815	1276	534
V/C Ratio(X)	0.78	0.40	0.50	0.54	0.84	0.15
Avail Cap(c_a), veh/h	435	1746	309	815	1276	534
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	5.2	15.6	13.1	18.8	13.7
Incr Delay (d2), s/veh	11.8	0.6	0.5	0.4	6.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.2	1.3	3.9	7.6	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.3	5.9	16.1	13.5	25.6	14.3
LnGrp LOS	C	A	B	B	C	B
Approach Vol, veh/h	1043			590	1155	
Approach Delay, s/veh	14.1			14.2	24.8	
Approach LOS	B			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		35.0		30.0	12.0	23.0
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		29.0		24.0	6.0	17.0
Max Q Clear Time (g_c+I1), s		13.3		20.5	6.0	13.8
Green Ext Time (p_c), s		1.4		1.2	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↱			↕			↕	
Traffic Vol, veh/h	9	287	3	0	420	3	2	0	3	11	0	29
Future Vol, veh/h	9	287	3	0	420	3	2	0	3	11	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	56	97	92	25	86	56	25	25	25	50	25	67
Heavy Vehicles, %	67	10	0	0	6	100	0	0	0	25	0	38
Mvmt Flow	16	296	3	0	488	5	8	0	12	22	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	493	0	0	-	-	0	842	823	298	827	822	491
Stage 1	-	-	-	-	-	-	330	330	-	491	491	-
Stage 2	-	-	-	-	-	-	512	493	-	336	331	-
Critical Hdwy	4.77	-	-	-	-	-	7.1	6.5	6.2	7.35	6.5	6.58
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.35	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.35	5.5	-
Follow-up Hdwy	2.803	-	-	-	-	-	3.5	4	3.3	3.725	4	3.642
Pot Cap-1 Maneuver	805	-	-	0	-	-	286	311	746	266	311	511
Stage 1	-	-	-	0	-	-	687	649	-	518	552	-
Stage 2	-	-	-	0	-	-	548	550	-	633	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	805	-	-	-	-	-	257	304	746	257	304	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	401	-	368	407	-
Stage 1	-	-	-	-	-	-	671	633	-	506	552	-
Stage 2	-	-	-	-	-	-	502	550	-	608	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	12.1	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	530	805	-	-	-	-	452
HCM Lane V/C Ratio	0.038	0.02	-	-	-	-	0.144
HCM Control Delay (s)	12.1	9.6	0	-	-	-	14.3
HCM Lane LOS	B	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	-	-	0.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕		↰		↱
Traffic Vol, veh/h	0	245	72	13	330	0	82	0	41	0	0	0
Future Vol, veh/h	0	245	72	13	330	0	82	0	41	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	88	66	65	89	92	85	25	75	25	25	25
Heavy Vehicles, %	0	14	23	22	11	2	5	0	7	0	0	0
Mvmt Flow	0	278	109	20	371	0	96	0	55	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	387	0	0	744	744	333	771	-	371
Stage 1	-	-	-	-	-	-	333	333	-	411	-	-
Stage 2	-	-	-	-	-	-	411	411	-	360	-	-
Critical Hdwy	-	-	-	4.32	-	-	7.15	6.5	6.27	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.5	-	6.1	-	-
Follow-up Hdwy	-	-	-	2.398	-	-	3.545	4	3.363	3.5	-	3.3
Pot Cap-1 Maneuver	0	-	-	1070	-	0	327	345	697	320	0	679
Stage 1	0	-	-	-	-	0	674	647	-	622	0	-
Stage 2	0	-	-	-	-	0	612	598	-	662	0	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	-	-	-	1070	-	-	321	337	697	290	-	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	434	433	-	409	-	-
Stage 1	-	-	-	-	-	-	674	647	-	622	-	-
Stage 2	-	-	-	-	-	-	597	584	-	610	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	15.2	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	503	-	-	1070	-	-	-
HCM Lane V/C Ratio	0.3	-	-	0.019	-	-	-
HCM Control Delay (s)	15.2	-	-	8.4	-	0	0
HCM Lane LOS	C	-	-	A	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	258	21	17	307	44	17
Future Vol, veh/h	258	21	17	307	44	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	57	75	90	50	81
Heavy Vehicles, %	8	0	0	8	6	0
Mvmt Flow	284	37	23	341	88	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	321	0	690	303
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	387	-
Critical Hdwy	-	-	4.1	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.3
Pot Cap-1 Maneuver	-	-	1250	-	405	741
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1250	-	398	741
Mov Cap-2 Maneuver	-	-	-	-	495	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	-	-	1250	-
HCM Lane V/C Ratio	0.206	-	-	0.018	-
HCM Control Delay (s)	13.6	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	8	22	322	2	52
Future Vol, veh/h	248	8	22	322	2	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	50	65	88	38	45
Heavy Vehicles, %	8	0	0	8	0	0
Mvmt Flow	267	16	34	366	5	116

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	283	0	709	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	434	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1291	-	404	769
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	658	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1291	-	391	769
Mov Cap-2 Maneuver	-	-	-	-	486	-
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	658	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	750	-	-	1291	-
HCM Lane V/C Ratio	0.161	-	-	0.026	-
HCM Control Delay (s)	10.7	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑		↰	↑	↱		↔			↔	
Traffic Vol, veh/h	112	163	4	9	219	104	3	0	6	83	2	105
Future Vol, veh/h	112	163	4	9	219	104	3	0	6	83	2	105
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	175	-	135	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	91	38	75	85	79	50	25	50	80	38	78
Heavy Vehicles, %	18	4	0	0	5	26	0	0	0	7	0	5
Mvmt Flow	132	179	11	12	258	132	6	0	12	104	5	135

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	190	0	0	867	863	185	737	736	258
Stage 1	-	-	-	-	-	-	449	449	-	282	282	-
Stage 2	-	-	-	-	-	-	418	414	-	455	454	-
Critical Hdwy	4.28	-	-	4.1	-	-	7.1	6.5	6.2	7.17	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.17	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.17	5.5	-
Follow-up Hdwy	2.362	-	-	2.2	-	-	3.5	4	3.3	3.563	4	3.345
Pot Cap-1 Maneuver	1087	-	-	1396	-	-	275	295	862	328	349	773
Stage 1	-	-	-	-	-	-	593	576	-	714	681	-
Stage 2	-	-	-	-	-	-	616	597	-	575	573	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1087	-	-	1396	-	-	199	253	862	288	299	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	199	253	-	288	299	-
Stage 1	-	-	-	-	-	-	512	498	-	617	675	-
Stage 2	-	-	-	-	-	-	500	592	-	490	495	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.6	0.2	14.2	22.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	408	1087	-	-	1396	-	-	441
HCM Lane V/C Ratio	0.044	0.121	-	-	0.009	-	-	0.552
HCM Control Delay (s)	14.2	8.8	-	-	7.6	-	-	22.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	3.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	158	123	225	1677	693	86
Future Volume (veh/h)	158	123	225	1677	693	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1781	1678	1826	1767	1781
Adj Flow Rate, veh/h	184	0	271	1765	722	0
Peak Hour Factor	0.86	0.95	0.83	0.95	0.96	0.75
Percent Heavy Veh, %	3	8	15	5	9	8
Cap, veh/h	227		531	2437	1758	
Arrive On Green	0.13	0.00	0.10	0.70	0.52	0.00
Sat Flow, veh/h	1767	1510	1598	3561	3445	1510
Grp Volume(v), veh/h	184	0	271	1765	722	0
Grp Sat Flow(s),veh/h/ln	1767	1510	1598	1735	1678	1510
Q Serve(g_s), s	6.6	0.0	4.6	20.0	8.5	0.0
Cycle Q Clear(g_c), s	6.6	0.0	4.6	20.0	8.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	227		531	2437	1758	
V/C Ratio(X)	0.81		0.51	0.72	0.41	
Avail Cap(c_a), veh/h	299		664	2437	1758	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.6	0.0	6.1	5.9	9.4	0.0
Incr Delay (d2), s/veh	9.1	0.0	0.3	1.9	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.7	3.1	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.6	0.0	6.3	7.8	10.1	0.0
LnGrp LOS	D		A	A	B	
Approach Vol, veh/h	184	A		2036	722	A
Approach Delay, s/veh	36.6			7.6	10.1	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		51.7		13.3	11.6	40.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		43.0		11.0	12.0	26.0
Max Q Clear Time (g_c+I1), s		22.0		8.6	6.6	10.5
Green Ext Time (p_c), s		19.9		0.1	0.1	9.0

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	924	31	7	1275	84	64	0	7	74	0	86
Future Volume (veh/h)	150	924	31	7	1275	84	64	0	7	74	0	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	1004	34	8	1386	91	70	0	8	80	0	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	2023	69	332	2050	914	450	6	40	254	28	234
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.28	0.00	0.28	0.28	0.00	0.28
Sat Flow, veh/h	358	3507	119	544	3554	1585	1211	20	141	608	99	821
Grp Volume(v), veh/h	163	509	529	8	1386	91	78	0	0	173	0	0
Grp Sat Flow(s),veh/h/ln	358	1777	1849	544	1777	1585	1373	0	0	1528	0	0
Q Serve(g_s), s	19.9	11.0	11.0	0.6	17.6	1.7	0.0	0.0	0.0	3.1	0.0	0.0
Cycle Q Clear(g_c), s	37.5	11.0	11.0	11.6	17.6	1.7	2.6	0.0	0.0	5.6	0.0	0.0
Prop In Lane	1.00		0.06	1.00		1.00	0.90		0.10	0.46		0.54
Lane Grp Cap(c), veh/h	220	1025	1067	332	2050	914	496	0	0	516	0	0
V/C Ratio(X)	0.74	0.50	0.50	0.02	0.68	0.10	0.16	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	220	1025	1067	332	2050	914	496	0	0	516	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.57	0.57	0.57	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	8.2	8.2	11.6	9.5	6.2	17.5	0.0	0.0	18.6	0.0	0.0
Incr Delay (d2), s/veh	12.4	0.4	0.4	0.0	0.5	0.0	0.7	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.2	3.3	0.1	5.0	0.4	0.9	0.0	0.0	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	8.5	8.5	11.6	10.0	6.2	18.2	0.0	0.0	20.3	0.0	0.0
LnGrp LOS	D	A	A	B	B	A	B	A	A	C	A	A
Approach Vol, veh/h		1201			1485			78			173	
Approach Delay, s/veh		12.5			9.8			18.2			20.3	
Approach LOS		B			A			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	23.0	42.0	23.0	42.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	18.5	37.5	18.5	37.5
Max Q Clear Time (g_c+I1), s	4.6	39.5	7.6	19.6
Green Ext Time (p_c), s	0.3	0.0	0.7	9.7

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

HCM 6th Edition methodology does not support clustered intersections.

HCM 6th Edition methodology does not support clustered intersections.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	15	10	770	645	35
Future Vol, veh/h	30	15	10	770	645	35
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	-	-	-	-	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	16	11	837	701	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1560	701	739	0	-	0
Stage 1	701	-	-	-	-	-
Stage 2	859	-	-	-	-	-
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	123	439	867	-	-	-
Stage 1	492	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	439	867	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	415	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.7	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	867	-	158	-	-
HCM Lane V/C Ratio	0.013	-	0.31	-	-
HCM Control Delay (s)	9.2	0	37.7	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0	-	1.2	-	-