

# Arlington Garden Apartments

Arlington, WA

Updated Traffic Impact Analysis

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## FINDINGS/CONCLUSIONS

This Traffic Impact Analysis (TIA) has been prepared for the proposed *Arlington Garden Apartments* project located at 21117 59<sup>th</sup> Ave NE (the SE corner of SR 530 and 59<sup>th</sup> Ave NE) in the City of Arlington. This TIA has been updated to reflect a modified site plan.

**Project Proposal.** The *Arlington Garden Apartments* site is located at 21117 59<sup>th</sup> Ave NE (the SE corner of SR 530 and 59<sup>th</sup> Ave NE) in Arlington (Snohomish County parcel #3105100402700). The proposed project consists of the development of up to 206 multifamily (low-rise) dwelling units (i.e. garden style apartments) and up to 12,000 square feet (SF) of commercial retail use on a site that is currently vacant. Vehicular access to the site is proposed via two full access driveways on 59<sup>th</sup> Ave NE. At the request of the City, accommodation for a future vehicular connection to/from the east will be provided via an internal "frontage road" on the south side of SR 530.

**Trip Generation.** The proposed project is estimated to generate 1,610 net new weekday daily trips with 102 trips occurring during the weekday AM peak hour (30 in, 72 out) and 137 trips during the weekday PM peak hour (83 in, 54 out).

**Intersection Level of Service (LOS).** Weekday PM peak hour LOS analysis was conducted at 9 off-site study intersections. Each of the 9 off-site study intersections are anticipated to operate at LOS C or better during the weekday PM peak hour in 2027 with or without the proposed *Arlington Garden Apartments* project with exception to the I-5 NB Ramps/SR 530 intersection which currently operates at LOS D and is anticipated to continue to operate at LOS D without or with the proposed project in 2027.

**Site Access Evaluation.** Based on the results of the analysis, the individual movements entering and exiting the site at the two (2) proposed stop-controlled site access locations on 59<sup>th</sup> Ave NE are expected to operate at LOS A with minimal queuing during the weekday PM peak hour in 2027.

### Mitigation.

Off-Site Improvements. Based on the results of the LOS analysis shown in this report, all study intersections are expected to operate at LOS C or better with the proposed project with exception to the signalized intersection of I-5 NB Ramps/SR 530 which currently operates at LOS D during the weekday PM peak hour and is anticipated to continue to operate at LOS D under future year 2027 conditions without or with the proposed *Arlington Garden Apartments* project. Therefore, no off-site improvements are identified.

City of Arlington Traffic Impact Fees. The City of Arlington requires payment of traffic impact fees to help fund planned roadway improvements throughout the City. The City's currently adopted standard traffic impact fee rate is \$3,355 per new PM peak hour trip. Traffic mitigation fees are due at the time of building permit issuance.

Snohomish County Traffic Mitigation Fees. The City of Arlington and Snohomish County have adopted an interlocal agreement whereby developments in Arlington must assess potential mitigation for impacts on Snohomish County roadway facilities. The *Arlington Garden Apartments* project is located in TSA A and is not expected to impact any TSA A projects included in the Snohomish County's *Transportation Needs Report*. Therefore, the *Arlington Garden Apartments* project would not be required to pay traffic mitigation fees to Snohomish County.

WSDOT Traffic Mitigation Fees. Traffic impact fee payments to WSDOT are based on the interlocal agreement between WSDOT and Snohomish County. Based on the WSDOT *Traffic Impact Analysis Checklist* and *Long Version Traffic Mitigation Offer* form, no WSDOT traffic mitigation fees are identified.

## INTRODUCTION

The information provided in this Traffic Impact Analysis (TIA) is being submitted to the City of Arlington for the proposed *Arlington Garden Apartments* project located at 21117 59<sup>th</sup> Ave NE (the SE corner of SR 530 and 59<sup>th</sup> Ave NE) in the City of Arlington as shown in **Figure 1**. This TIA has been updated to reflect a modified site plan.

## Project Description

The *Arlington Garden Apartments* site is located at 21117 59<sup>th</sup> Ave NE (the SE corner of SR 530 and 59<sup>th</sup> Ave NE) in Arlington (Snohomish County parcel #3105100402700). The proposed project consists of the development of up to 206 multifamily (low-rise) dwelling units (i.e. garden style apartments) and up to 12,000 square feet (SF) of commercial retail use on a site that is currently vacant.

Vehicular access to the site is proposed via two full access driveways on 59<sup>th</sup> Ave NE. At the request of the City, accommodation for a future public vehicular connection to/from the east will be provided via an internal “frontage road” (211<sup>th</sup> Place NE) on the south side of SR 530. A preliminary site plan is included in **Appendix A**.

## Project Approach

To analyze the traffic impacts from the proposed *Arlington Garden Apartments* project, the following tasks were undertaken:

- Assessed existing conditions via field reconnaissance and reviewed existing planning documents.
- Described and assessed existing transportation conditions in the area.
- Documented existing (2024) traffic volumes and intersection levels of service (LOS) at 9 off-site study intersections during the weekday PM peak hour.
- Documented future planned transportation improvements in the project vicinity.
- Developed trip generation estimates for weekday daily, AM, and PM peak hour conditions based on the land use proposal.
- Documented trip distribution and assignment of weekday PM peak hour project-generated traffic.
- Documented traffic forecasts and assumptions for year 2027 conditions at the 9 off-site study intersections without and with the proposed project.
- Analyzed weekday PM peak hour LOS for future year 2027 conditions without and with the proposed project at the 9 off-site study intersections.
- Evaluated weekday PM peak hour LOS and queuing for future year 2027 conditions at the proposed site access location.
- Documented proposed traffic mitigation.

## Primary Data and Information Sources

- Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11<sup>th</sup> Edition, 2021.
- Institute of Transportation Engineers (ITE), *Trip Generation Handbook*, 3<sup>rd</sup> Edition, 2017.
- 2024 weekday PM peak hour traffic counts, All Traffic Data.
- *Arlington 2024-2029 Transportation Improvement Program (TIP)*.
- Transportation Research Board (TRB), *Highway Capacity Manual (HCM)*, 7<sup>th</sup> Edition, 2022.
- City of Arlington *Comprehensive Plan*, Transportation Element, 2017.
- Signal Timing Data, WSDOT and Snohomish County.



Figure 1: Project Site Vicinity

# EXISTING CONDITIONS

## Study Area

The following 9 off-site study intersections are included in this traffic impact analysis:

1. I-5 SB Ramps / SR 530 (signal - WSDOT)
2. I-5 NB Ramps / SR 530 (signal - WSDOT)
3. Smokey Point Blvd (west) / SR 530 (signal - WSDOT)
4. 59<sup>th</sup> Ave NE / SR 530 (roundabout - WSDOT)
5. 211<sup>th</sup> PI NE / SR 530 (roundabout - WSDOT)
6. SR 9 / SR 530 / Division St / W Division St (signal - WSDOT)
7. 67<sup>th</sup> Ave NE / 211<sup>th</sup> PI NE (signal)
8. 67<sup>th</sup> Ave NE / 204<sup>th</sup> St NE (signal)
9. SR 9 / 204<sup>th</sup> St NE (signal - WSDOT)

## Roadway Network

**Table 1** describes the existing characteristics of the streets that would be used as primary routes to and from the site. Roadway characteristics are described in terms of orientation, arterial classification, posted speed limits, parking, sidewalks, and bicycle facilities. The relationship of these roadways to the project site is shown in **Figure 1**.

**Table 1**  
**Existing Roadway Network Summary**

Roadway	Orientation	Classification <sup>1</sup>	Speed Limit	Parking	Sidewalks	Bicycle Facilities
SR 530	E/W	Principal Arterial	55	None	None	Paved Shoulders
59 <sup>th</sup> Ave NE	N/S	Local Road	35	None	None	Paved Shoulders
67 <sup>th</sup> Ave NE	N/S	Minor Arterial	35	None	Both sides south of 211 <sup>th</sup> , east side north of 211 <sup>th</sup>	None
211 <sup>th</sup> PI NE	E/W	Collector	25	None	Intermittent on west side	None

1. Source: City of Arlington Comprehensive Plan, Transportation Element, 2017.

## Transit Service

Community Transit provides transit service in Snohomish County but no public transportation currently exists in the immediate project vicinity. The nearest transit stops are located just over 1 mile southeast of the site at the intersection of 67<sup>th</sup> Ave NE/204<sup>th</sup> Street NE. These bus stops provide access to Community Transit Route 220 and Route 230. Route 220 provides service between the Smokey Point Transit Center and downtown Arlington, and Route 230 provides service between the Smokey Point Transit Center and Darrington along SR 530 (although there are no existing stops on SR 530).

## Non-Motorized Transportation Facilities

Non-motorized transportation facilities in the project site vicinity are extremely limited. Paved shoulders currently exist on both sides of SR 530 and 59<sup>th</sup> Ave NE along the project frontage.

## Traffic Volumes

Existing weekday PM peak hour traffic volumes at the study intersections were based on counts collected by All Traffic Data in October 2024. The PM peak hour traffic volumes represent the highest hour of traffic between 4:00 and 6:00 p.m. **Figure 3** illustrates the existing 2024 weekday PM peak hour traffic volumes at the study intersections. The existing traffic count sheets are included in **Appendix B**.

## Intersection Levels of Service

An existing weekday PM peak hour level of service (LOS) analysis was conducted at the 9 off-site study intersections. Intersection LOS was calculating using the methodology and procedures outlined in the *Highway Capacity Manual* (HCM 7<sup>th</sup> Edition), WSDOT Synchro and SimTraffic Protocol, and WSDOT Sidra Policy and Settings using the *Synchro 12* and *Sidra 9* software programs. Existing signal timing used in the analysis was provided by WSDOT and Snohomish County. The 2024 existing weekday PM peak hour LOS analysis results for the study intersections are summarized in **Table 4**. The LOS methodology and calculations are included in **Appendix D**.

Based on information provided in the City of Arlington's *Comprehensive Plan (Transportation Element)*, The City has adopted a level of service (LOS) standard of LOS D for City arterials and LOS C for all other City streets. Additionally, WSDOT's adopted level of service standard for the SR 9 study intersections is LOS D and for the SR 530 study intersections is LOS C, except at the Smokey Point Blvd/SR 530 intersection (#3) where the LOS standard is LOS D.

**Table 2**  
**Existing 2024 Weekday PM Peak Hour LOS Summary**

Study Intersection	LOS	Delay (sec)
<u>Signalized Intersections:</u>		
1. I-5 SB Ramps / SR 530	C	21.9
2. I-5 NB Ramps / SR 530	D	37.3
3. Smokey Point Blvd / SR 530	B	13.5
6. SR 9 / SR 530 / Division St	C	23.9
7. 67 <sup>th</sup> Ave NE / 211 <sup>th</sup> PI NE <sup>1</sup>	A	6.4
8. 67 <sup>th</sup> Ave NE / 204 <sup>th</sup> St NE	C	24.8
9. SR 9 / 204 <sup>th</sup> St NE	C	31.3
<u>Roundabout Intersections:</u>		
4. 59 <sup>th</sup> Ave NE / SR 530	A	4.8
5. 211 <sup>th</sup> PI NE / SR 530	A	6.0

1. HCM 7<sup>th</sup> methodology does not support signal phasing; Synchro 12 results reported instead.

As shown in **Table 4**, all study intersections currently operate at LOS C or better during the weekday PM peak hour with exception to the I-5 NB Ramps/SR 530 (#2) signalized intersection which currently operates at LOS D during the weekday PM peak hour.



## Crash History

Crash history at the 9 off-site study intersections was analyzed for the five-year period from 2019 to 2023 (the most recent 5-year period as provided by WSDOT). Summaries of the total and yearly average during this period are provided in **Table 2**. Summaries of crashes by type over the five-year period are provided in **Table 3**. The detailed crash data is included in **Appendix C**.

**Table 3**  
**Crash Data Summary by Year, January 1, 2019 to December 31, 2023**

Study Intersection	2019	2020	2021	2022	2023	5-Year Total Crashes	Average Annual Crash Rate
1. I-5 SB Ramps / SR 530	2	6	3	4	5	20	4.00
2. I-5 NB Ramps / SR 530	6	5	4	1	7	23	4.60
3. Smokey Point Blvd / SR 530	6	3	2	1	5	17	3.40
4. 59 <sup>th</sup> Ave NE / SR 530	1	1	3	1	4	10	2.00
5. 211 <sup>th</sup> PI NE / SR 530	3	1	2	4	9	19	3.80
6. SR 9 / SR 530 / Division St	4	8	4	1	3	20	4.00
7. 67 <sup>th</sup> Ave NE / 211 <sup>th</sup> PI NE	2	1	2	1	2	8	1.60
8. 67 <sup>th</sup> Ave NE / 204 <sup>th</sup> St NE	2	1	4	2	5	14	2.80
9. SR 9 / 204 <sup>th</sup> St NE	2	3	3	5	1	14	2.80

Source: WSDOT Crash Data.

**Table 4**  
**Crash Data Summary by Type, January 1, 2019 to December 31, 2023**

Study Intersection	5-Year Total Crashes	Average Annual Crash Rate	Crash Type						
			Angle (Left/Right)	Angle (T)	Side Swipe	Rear End	Parked Veh/ Fixed Object	Ped/Cyclist	Other
1. I-5 SB Ramps / SR 530	20	4.00	10	4	0	5	0	0	1
2. I-5 NB Ramps / SR 530	23	4.60	3	1	0	14	3	0	2
3. Smokey Point Blvd / SR 530	17	3.40	1	5	0	10	0	0	1
4. 59 <sup>th</sup> Ave NE / SR 530	10	2.00	1	1	0	7	0	0	1
5. 211 <sup>th</sup> PI NE / SR 530	19	3.80	0	14	0	4	1	0	0
6. SR 9 / SR 530 / Division St	20	4.00	5	6	0	8	1	0	0
7. 67 <sup>th</sup> Ave NE / 211 <sup>th</sup> PI NE	8	1.60	3	0	0	1	3	0	1
8. 67 <sup>th</sup> Ave NE / 204 <sup>th</sup> St NE	14	2.80	7	0	0	4	2	0	1
9. SR 9 / 204 <sup>th</sup> St NE	14	2.80	2	3	0	6	0	2	1

Source: WSDOT Crash Data.

A roundabout was installed at the intersection of 59<sup>th</sup> Ave NE/SR 530 (#4) and opened to traffic in August 2023. Since this intersection will provide access to the proposed *Arlington Garden Apartments* project, In addition to the crash history summarized in **Table 2** and **Table 3** above, available crash data at the intersection for 2024



was reviewed. At the time of the request, WSDOT was able to provide crash data through September 21, 2024. A detailed review of the crash data at 59<sup>th</sup> Ave NE/SR 530 after the installation of the roundabout showed that there were a total of 2 crashes between August 1, 2023 and December 31, 2023 and there were a total of two crashes in 2024 (through September 21). This number of crashes is not significant considering the average daily traffic (ADT) volumes that travel through the roundabout and is consistent with the annual average crash history prior to the installation of the roundabout. Additionally, all four of the crashes at the roundabout were categorized as “no apparent injury.”

## FUTURE CONDITIONS

### Planned Transportation Improvements

Based on a review of the City of Arlington 2024-2029 *Transportation Improvement Program (TIP)*, there are several planned improvements within the project study area:

- TIP #2: 204<sup>th</sup> St and 74<sup>th</sup> Ave Signal – This project includes a new signal with ADA compliant crosswalks and bus pull-outs at the 204<sup>th</sup> St NE and 74<sup>th</sup> Ave NE intersection. This project is fully funded and construction is planned for 2024.
- TIP #4: 211<sup>th</sup> Pl NE Corridor (67<sup>th</sup> Ave to SR 530) – This project will rehabilitate 211<sup>th</sup> Place NE into an urban corridor with 12-foot wide multiuse trail and roadway and pedestrian lighting. This project is fully funded and construction is planned for 2024.
- TIP #9: Island Crossing SR 530 Roundabout – This project includes construction of a roundabout at the SR 530 and Smokey Point Boulevard intersection. Design is complete and the project is being coordinated with WSDOT, the Stillaguamish Tribe, the City, and Snohomish County. The project is seeking construction funding and construction is planned for 2026.
- TIP #16: SR 530/SR 9/Division/Burke&Broadway – This project includes intersection improvements at multiple intersections per WSDOT's SR 9 plan. Construction is currently planned for 2029.
- TIP #41: 71<sup>st</sup> Ave and 204<sup>th</sup> Roundabout – This project includes a new roundabout at the intersection of 71<sup>st</sup> Ave NE and 204<sup>th</sup> St NE and is planned for 2026.

### Project Trip Generation

The trip generation estimates for the proposed uses for the *Arlington Garden Apartments* project were based on methodology documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11<sup>th</sup> Edition for Land Use Code (LUC) 220 (Multifamily Housing Low-Rise) and LUC 822 (Strip Retail Plaza <40k). Adjustments to the trip generation estimates were made to account for internal trips and pass-by trips.

Internal trips are made by people making multiple stops within a development without generating new trips onto the adjacent street system. The internal trip adjustments were based on the methodology established in the ITE *Trip Generation Handbook*, 3<sup>rd</sup> Edition, 2017.

Pass-by trips are trips that are made by vehicles that are already on the adjacent streets and make intermediate stops at the commercial uses on route to a primary destination (i.e. on the way from work to home). The pass-by trips were based on studies included in the appendices of the ITE *Trip Generation Manual*, 11<sup>th</sup> Edition, 2021.

The resulting net new weekday daily, AM peak hour, and PM peak hour trip generation estimates for the proposed project are summarized in **Table 5**. The detailed trip generation calculations are included in **Appendix E**.

**Table 5  
Trip Generation Summary**

Weekday Time Period	New Trips Generated		
	In	Out	Total
Daily	805	805	1,610
AM Peak Hour	30	72	102
PM Peak Hour	83	54	137

## Project Trip Distribution

The distribution of vehicle trips generated by the proposed *Arlington Garden Apartments* project was based on existing and anticipated travel patterns in the area. The estimated trip distribution and assignment of weekday PM peak hour project-generated trips is illustrated in **Figure 4**.

In accordance with the *Snohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Arlington*, project trip impacts at Snohomish County key intersections were identified. The weekday AM and PM peak hour trip assignment at key intersections impacted by three (3) or more directional trips are shown in tabular format in **Tables 6 and 7** and are also illustrated in **Appendix F**.

**Table 6  
AM Peak Hour Trip Assignment at Snohomish County Key Intersections**

Key Intersection ID#	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
432	0	0	0	21	0	0	0	0	0	8	0	0
41	0	0	0	0	0	0	0	4	0	0	2	0
85	2	0	0	0	0	0	0	0	0	0	0	3

**Table 7  
PM Peak Hour Trip Assignment at Snohomish County Key Intersections**

Key Intersection ID#	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
432	0	0	0	16	0	0	0	0	0	25	0	0
41	0	0	0	0	0	0	0	3	0	0	4	0
85	4	0	0	0	0	0	0	0	0	0	0	3

## Traffic Volumes

To estimate the future 2027 No Action (Without Project) weekday PM peak hour traffic volumes, a 2 percent annual growth rate was applied to the 2024 existing traffic volumes. The growth factor is used to account for new development in the study area and growth in existing traffic and was calculated based on historical annual growth on SR 530. The resulting future 2027 No Action weekday PM peak hour traffic volumes at the study intersections are shown in **Figure 5**.

The future 2027 With Project traffic volumes at the study intersections and site access were determined by adding the project-generated trips (shown in **Figure 4**) to the 2027 No Action traffic volumes (**Figure 5**). The 2027 With Project traffic volumes are shown in **Figure 6**.

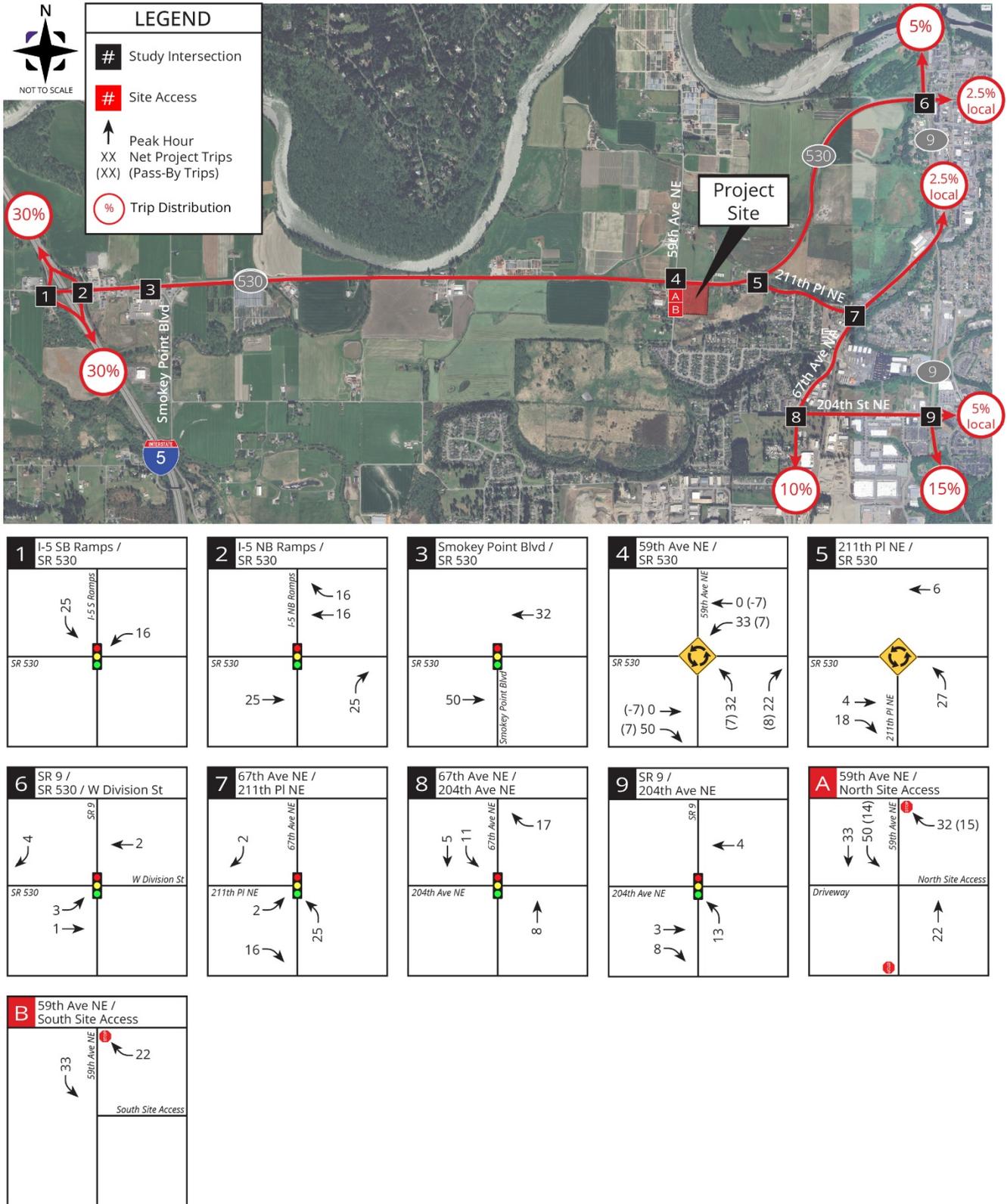


Figure 3: PM Peak Hour Project Trip Distribution and Assignment

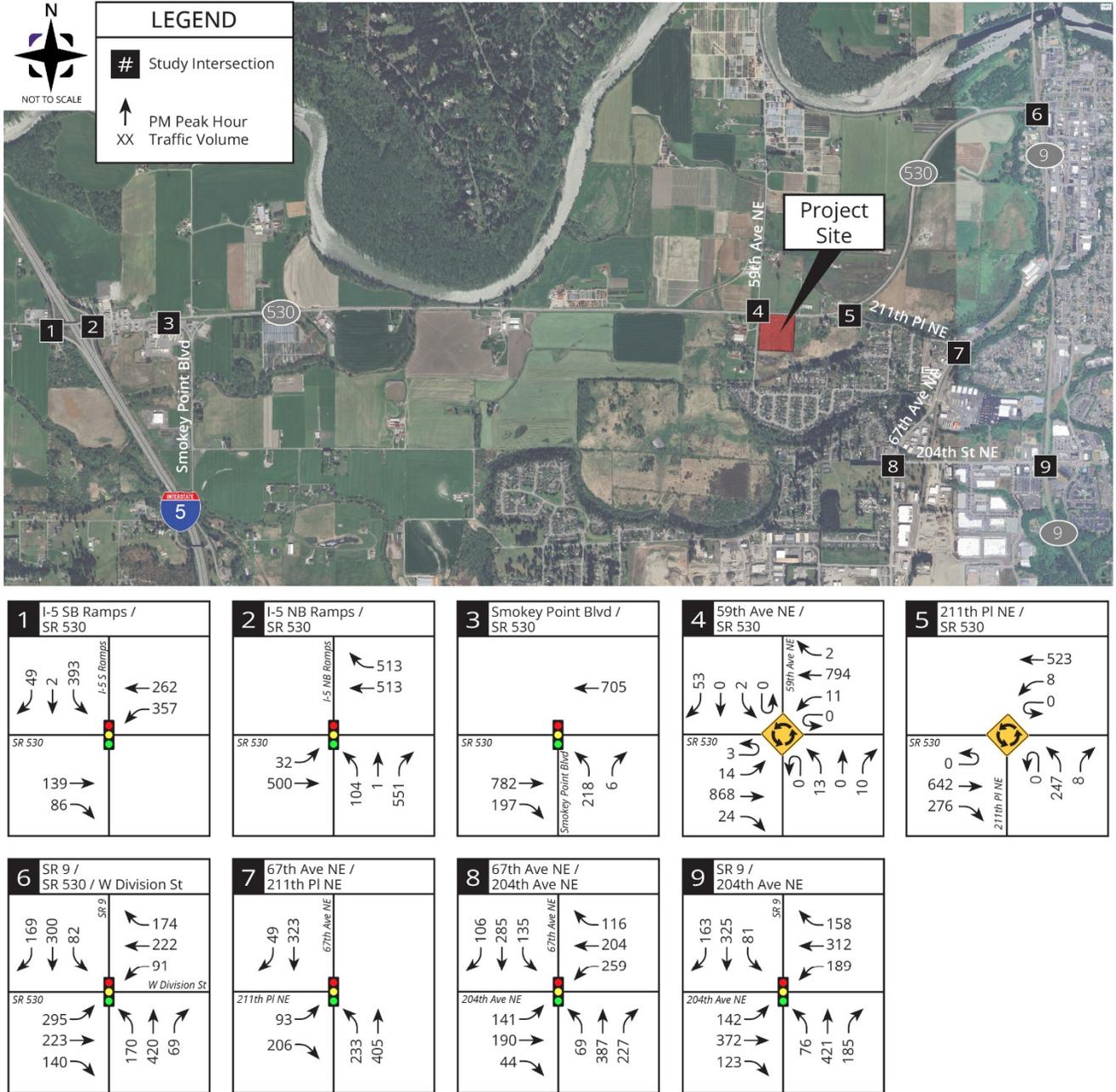


Figure 4: 2027 No Action Weekday PM Peak Hour Traffic Volumes

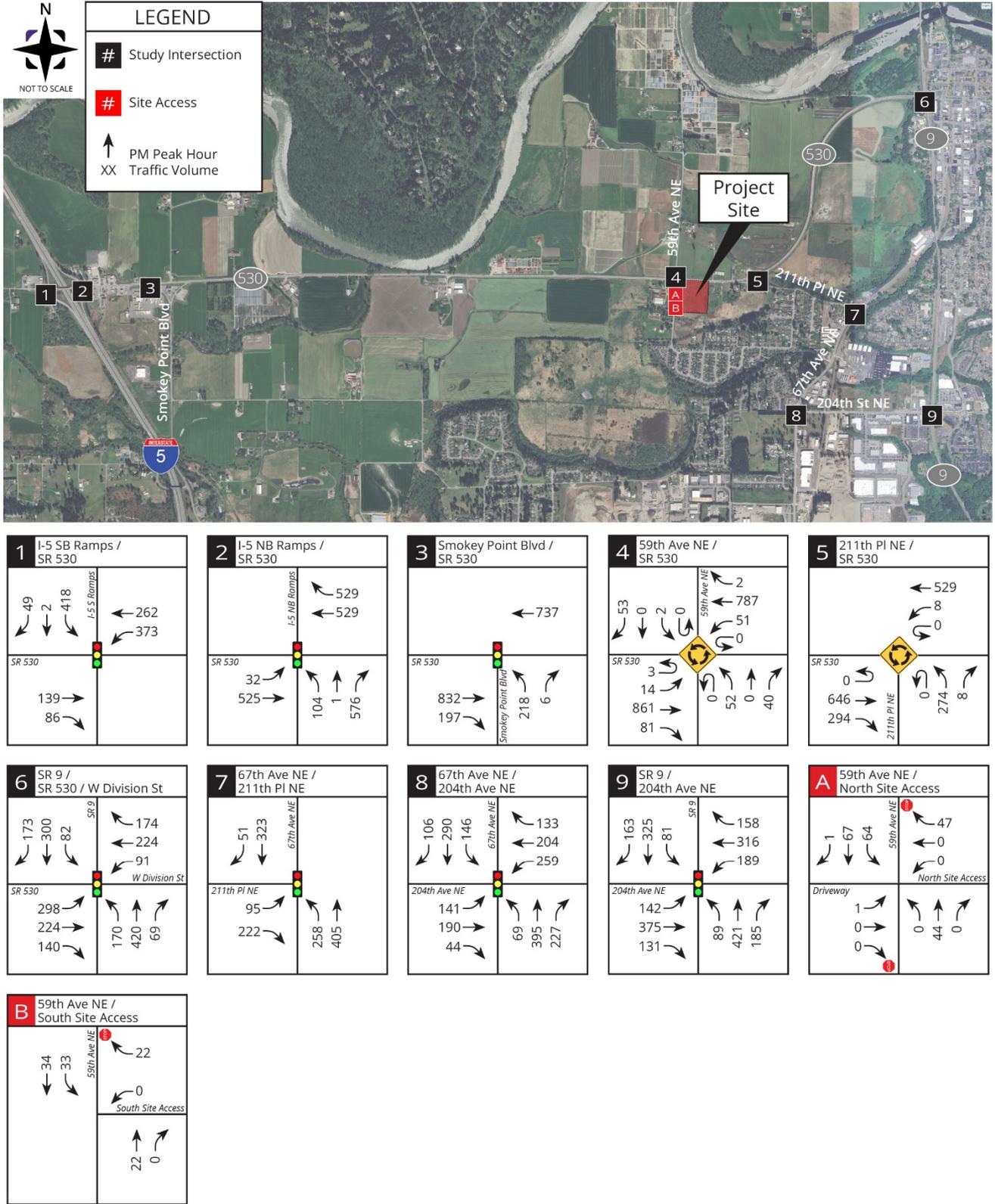


Figure 5: 2027 With Project Weekday PM Peak Hour Traffic Volumes

## Intersection Levels of Service

Weekday PM peak hour level of service (LOS) analyses were conducted for future year 2027 conditions at the 9 off-site study intersections. The signal timing and channelization assumptions for the year 2027 analysis were assumed to be the same as existing conditions. It should be noted that although the City and WSDOT are planning to install a roundabout at the intersection of Smokey Point Blvd/SR 530 (#3) in 2026, the project is currently unfunded and therefore, no improvements at this study intersection were assumed for the analysis documented in this TIA.

The LOS results at the study intersections without and with the proposed project are summarized in **Table 8**. The detailed LOS worksheets are included in **Appendix C**.

**Table 8**  
**Future 2027 Weekday PM Peak Hour LOS Summary**

Study Intersection	2027 No Action		2027 With Project	
	LOS	Delay (sec)	LOS	Delay (sec)
<u>Signalized Intersections:</u>				
1. I-5 SB Ramps / SR 530	C	23.1	C	24.3
2. I-5 NB Ramps / SR 530	D	44.5	D	50.7
3. Smokey Point Blvd / SR 530	B	16.3	B	18.4
6. SR 9 / SR 530 / Division St	C	25.7	C	25.8
7. 67 <sup>th</sup> Ave NE / 211 <sup>th</sup> PI NE <sup>1</sup>	A	6.5	A	6.6
8. 67 <sup>th</sup> Ave NE / 204 <sup>th</sup> St NE	C	27.2	C	28.4
9. SR 9 / 204 <sup>th</sup> St NE	C	34.7	C	34.9
<u>Roundabout Intersections:</u>				
4. 59 <sup>th</sup> Ave NE / SR 530	A	4.9	A	6.1
5. 211 <sup>th</sup> PI NE / SR 530	A	6.2	A	6.3

1. HCM 7<sup>th</sup> methodology does not support signal phasing; Synchro 12 results reported instead.

As shown in **Table 8**, all study intersections are anticipated to operate at LOS C or better during the weekday PM peak hour with the proposed *Arlington Garden Apartments* project with exception to the signalized intersection of I-5 NB Ramps/SR 530 (#2) which is anticipated to operate at LOS D in 2027 without or with the proposed project.

## Site Access Evaluation

Vehicular access is proposed via two (2) new full access driveways on 59<sup>th</sup> Ave NE. This section includes evaluation of the proposed site access locations including LOS and queuing.

### LOS and Queuing

To assess operations at the proposed site access locations, LOS and queuing was conducted during the weekday PM peak hour for future year 2027 conditions. The reported queues for the individual movements at each of the proposed site access locations are 95<sup>th</sup>-percentile queues, which are only exceeded five (5) percent of the time. The 2027 weekday PM peak hour traffic volumes at the proposed site access locations were shown previously in **Figure 6**.

The weekday PM peak hour site access analysis for future year 2027 is summarized below in **Table 9**. The LOS worksheets are included in **Appendix C**.

**Table 9**  
**Future 2027 Weekday PM Peak Hour Site Access LOS and Queue Summary**

Site Access / Movement	LOS	Delay (sec)	95 <sup>th</sup> % Queue (ft)
A. 59 <sup>th</sup> Ave NE / North Site Access			
Westbound Approach (exiting)	A	8.7	<25'
Southbound Left-Turn (entering)	A	7.4	<25'
B. 59 <sup>th</sup> Ave NE / South Site Access			
Westbound Approach (exiting)	A	8.5	<25'
Southbound Left-Turn (entering)	A	7.3	<25'

As shown in **Table 9**, the individual movements entering and exiting the site at the proposed stop-controlled site access locations on 59<sup>th</sup> Ave NE are expected to operate at LOS A during the weekday PM peak hour in 2027 with minimal queuing.

## MITIGATION

The following measures are identified to mitigate the transportation impacts of the proposed *Arlington Garden Apartments* project.

### Off-Site Improvements

Based on the results of the LOS analysis shown in this report, all study intersections are expected to operate at LOS C or better with the proposed project with exception to the signalized intersection of I-5 NB Ramps/SR 530 which currently operates at LOS D during the weekday PM peak hour and is anticipated to continue to operate at LOS D under future year 2027 conditions without or with the proposed *Arlington Garden Apartments* project. Therefore, no off-site improvements are identified.

### Traffic Impact Fees

**City of Arlington.** The City of Arlington requires payment of traffic impact fees to help fund planned roadway improvements throughout the City. The City's currently adopted standard traffic impact fee rate is \$3,355 per new PM peak hour trip. Traffic mitigation fees are due at the time of building permit issuance.

**Snohomish County.** The City of Arlington and Snohomish County have adopted an interlocal agreement whereby developments in Arlington must assess potential mitigation for impacts on Snohomish County roadway facilities. The *Arlington Garden Apartments* project is located in TSA A and is not expected to impact any TSA A projects included in the Snohomish County's *Transportation Needs Report* (see snip below). Therefore, the *Arlington Garden Apartments* project would not be required to pay traffic mitigation fees to Snohomish County.

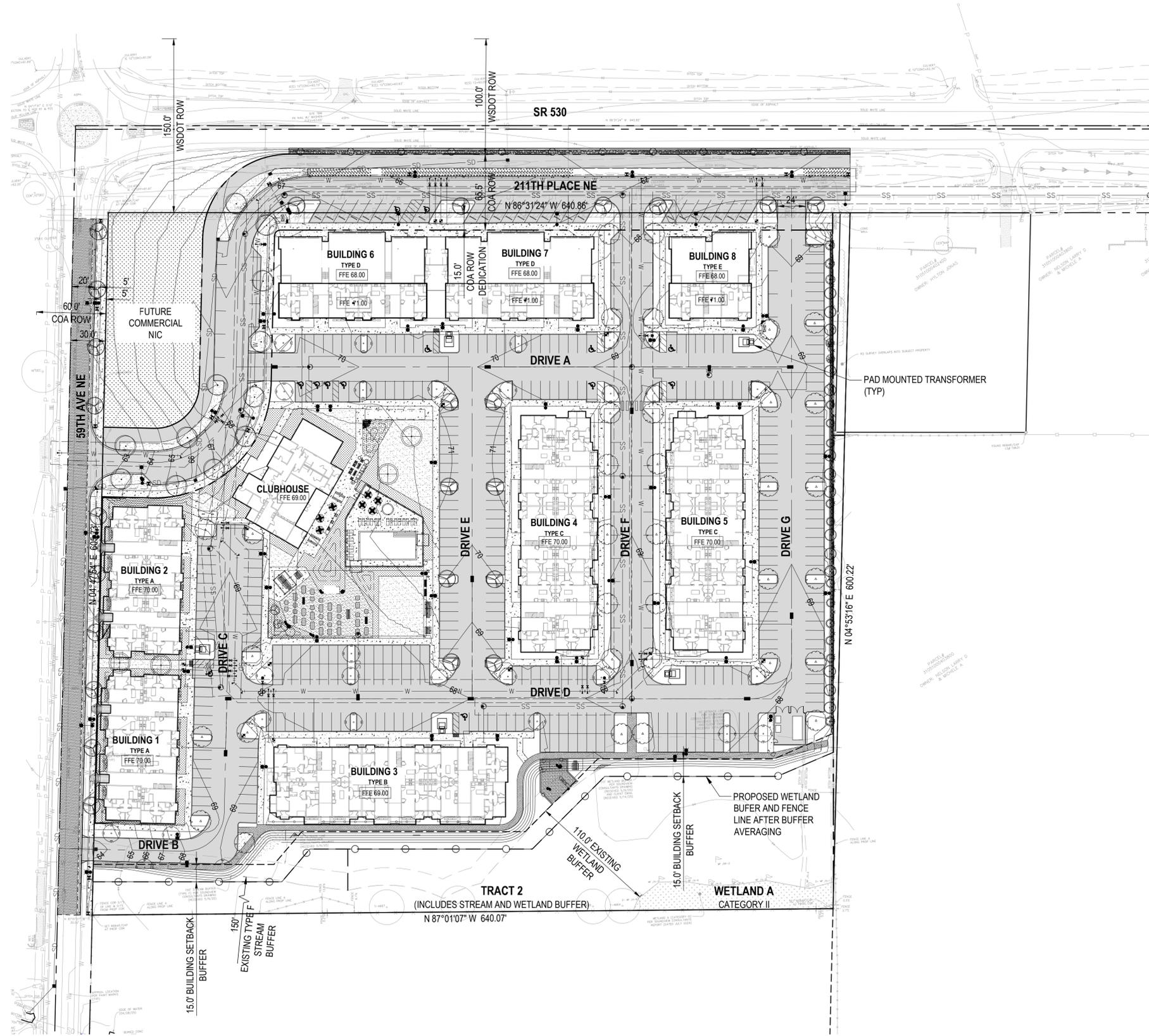
<b>TNR Appendix D: Impact Fee Cost Basis</b>						
Road Name	Limits	Column 1 Project Cost (\$1,000s)	Column 2 CO %	Source of Cost Estimate	Project Type	TNR ID#
<b>TSA A</b>						
67 Ave NE/152 St NE intersection		\$5,394	100%	TNR Cost Model	Major Intersection	INT-007
88 St NE Marysville C/L to Marysville C/L		\$2,855	100%	Marysville Interlocal Agreement	Major Widening	W-017
140 St NE/23 Ave NE intersection		\$3,498	100%	2015 TE Costs	Major Intersection	INT-006
<b>Subtotal TSA A</b>			<b>\$11,747</b>			

**WSDOT.** Traffic impact fee payments to WSDOT are based on the interlocal agreement between WSDOT and Snohomish County. Based on the WSDOT *Traffic Impact Analysis Checklist* and *Long Version Traffic Mitigation Offer* form included in **Appendix G**, no WSDOT traffic mitigation fees are identified for the *Arlington Garden Apartments* project.



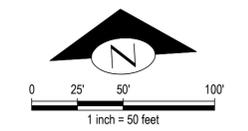
# Appendix A

## Site Plan



**LEGEND**

- PROPERTY LINE / ROW LINE
- ROADWAY CENTERLINE
- BUILDING OUTLINE
- CURB
- WETLAND BUFFER
- BSBL
- OPEN SPACE AND MINI-PARK BOUNDARY
- ↑ SIGN POST
- ASPHALT PAVING
- CONCRETE SIDEWALK
- ASPHALT GRIND & OVERLAY
- [Red Hatched Box] BUFFER REDUCTION
- [Green Hatched Box] BUFFER ADDITION
- CRITICAL AREA SPLIT RAIL FENCE



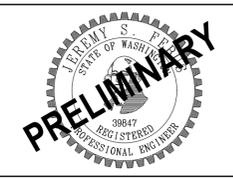
Jun 03, 2025 - 12:45pm  
 MagnumM  
 Z:\240001-240999\2400346 Arlington Apartments\CADD\Design\Entitlement\C1.00\_AA\_SP.dwg  
 240001-240999\2400346 Arlington Apartments\CADD\Design\Entitlement\C1.00\_AA\_SP.dwg

NO.	DATE	BY	CHD.	APPR.	REVISION
2	6/4/2025	MMM	MNF	JSF	CUP / BSP CYCLE 2 RESUBMITTAL
1	1/31/2025	MMM	MNF	JSF	CUP / BSP CYCLE 1 RESUBMITTAL
0	10/11/2024	MMM	MNF	JSF	CUP / BSP SUBMITTAL

DRAWN BY: CEP  
 CHECKED BY: MNF  
 DESIGNED BY: MMM  
 APPROVED BY: JSF  
 DATE: 5/23/2025  
 JOB No.: 2400346

**CALL TWO BUSINESS DAYS BEFORE YOU DIG**  
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 1601 5th Avenue, Suite 1600  
 Seattle, WA 98101  
 206.622.5822  
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**ARLINGTON GARDEN APARTMENTS**  
 ARLINGTON, WASHINGTON  
**SITE PLAN**

SHEET  
**C1.00**

# Appendix B

## Existing Traffic Counts



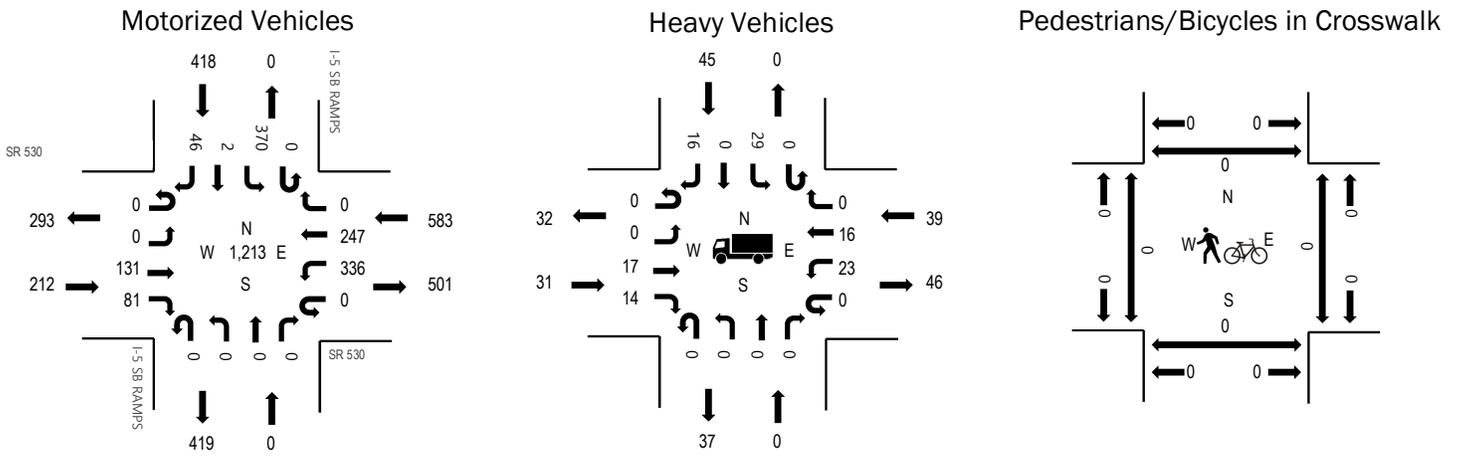
(303) 216-2439  
www.alltrafficdata.net

Location: 1 I-5 SB RAMPS & SR 530 PM

Date: Tuesday, October 1, 2024

Peak Hour: 04:45 PM - 05:45 PM

**Peak Hour**



	HV%	PHF
EB	14.6%	0.91
WB	6.7%	0.89
NB	0.0%	0.00
SB	10.8%	0.95
All	9.5%	0.96

**Traffic Counts - Motorized Vehicles**

Interval Start Time	SR 530 Eastbound				SR 530 Westbound				I-5 SB RAMPS Northbound				I-5 SB RAMPS Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	30	16	0	99	62	0	0	0	0	0	0	88	0	4	299	1,197
4:15 PM	0	0	37	26	0	77	55	0	0	0	0	0	0	91	1	6	293	1,203
4:30 PM	0	0	32	26	0	101	48	0	0	0	0	0	0	85	0	8	300	1,198
4:45 PM	0	0	36	19	0	87	53	0	0	0	0	0	0	97	1	12	305	1,213
5:00 PM	0	0	32	18	0	78	75	0	0	0	0	0	0	89	0	13	305	1,174
5:15 PM	0	0	34	24	0	71	55	0	0	0	0	0	0	95	1	8	288	
5:30 PM	0	0	29	20	0	100	64	0	0	0	0	0	0	89	0	13	315	
5:45 PM	0	0	22	18	0	83	54	0	0	0	0	0	0	79	0	10	266	
Count Total	0	0	252	167	0	696	466	0	0	0	0	0	0	713	3	74	2,371	
Peak Hour	0	0	131	81	0	336	247	0	0	0	0	0	0	370	2	46	1,213	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	7	0	6	12	25	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	7	0	10	13	30	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	2	0	13	8	23	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	6	0	12	11	29	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	8	0	8	14	30	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	12	0	6	11	29	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	5	0	13	9	27	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	5	0	7	1	13	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	52	0	75	79	206	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	31	0	39	45	115	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



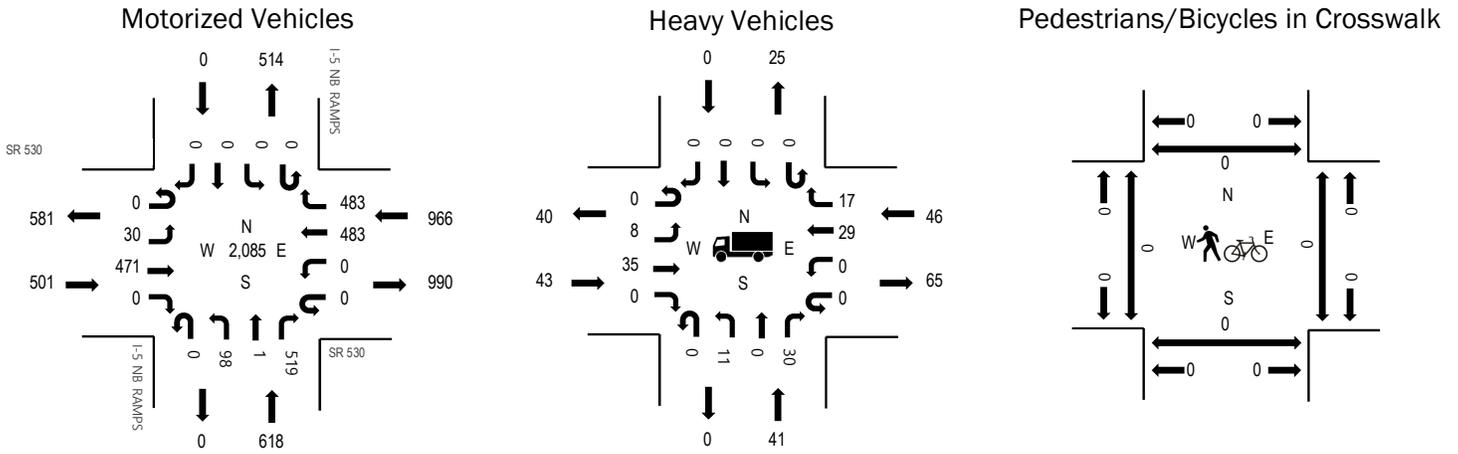
(303) 216-2439  
www.alltrafficdata.net

Location: 2 I-5 NB RAMPS & SR 530 PM

Date: Tuesday, October 1, 2024

Peak Hour: 04:00 PM - 05:00 PM

**Peak Hour**



	HV%	PHF
EB	8.6%	0.92
WB	4.8%	0.85
NB	6.6%	0.89
SB	0.0%	0.00
All	6.2%	0.90

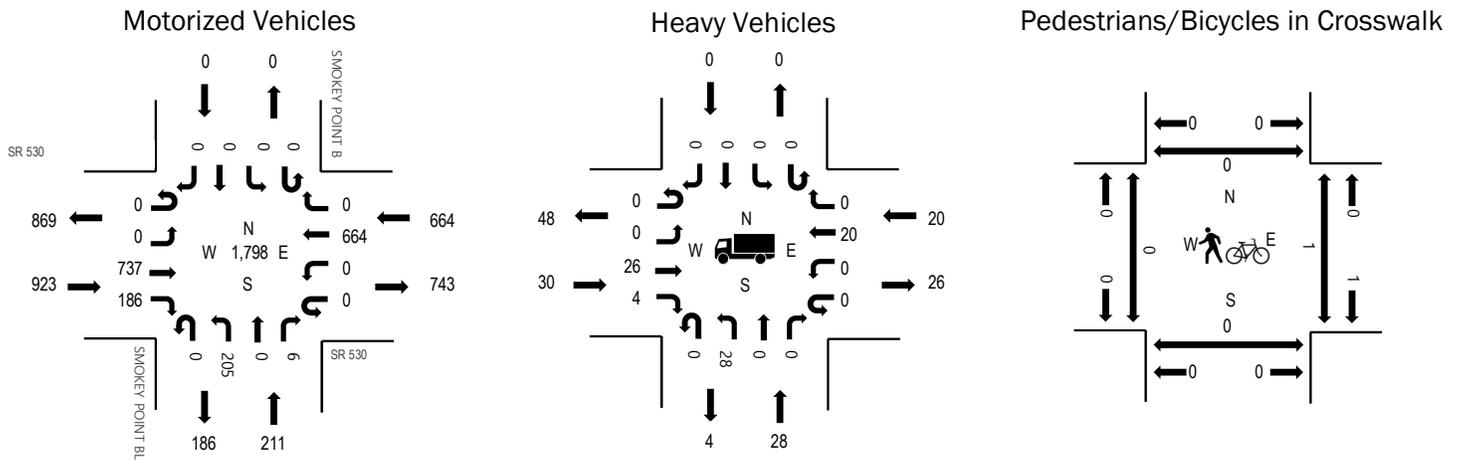
**Traffic Counts - Motorized Vehicles**

Interval Start Time	SR 530 Eastbound				SR 530 Westbound				I-5 NB RAMPS Northbound				I-5 NB RAMPS Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	9	113	0	0	0	136	147	0	24	0	149	0	0	0	0	578	2,085
4:15 PM	0	9	115	0	0	0	113	99	0	26	1	122	0	0	0	0	485	2,027
4:30 PM	0	6	113	0	0	0	123	123	0	25	0	117	0	0	0	0	507	2,039
4:45 PM	0	6	130	0	0	0	111	114	0	23	0	131	0	0	0	0	515	2,010
5:00 PM	0	2	119	0	0	0	119	110	0	39	0	131	0	0	0	0	520	1,929
5:15 PM	0	7	116	0	0	0	116	91	0	24	0	143	0	0	0	0	497	
5:30 PM	0	6	116	0	0	0	124	76	0	31	0	125	0	0	0	0	478	
5:45 PM	0	4	99	0	0	0	100	78	0	27	0	126	0	0	0	0	434	
Count Total	0	49	921	0	0	0	942	838	0	219	1	1,044	0	0	0	0	4,014	
Peak Hour	0	30	471	0	0	0	483	483	0	98	1	519	0	0	0	0	2,085	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	14	7	10	0	31	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	13	10	10	0	33	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	6	10	14	0	30	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	10	14	12	0	36	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	15	8	9	0	32	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	15	11	13	0	39	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	7	5	10	0	22	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	1	8	8	0	17	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	81	73	86	0	240	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	43	41	46	0	130	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Peak Hour



	HV%	PHF
EB	3.3%	0.96
WB	3.0%	0.82
NB	13.3%	0.91
SB	0.0%	0.00
All	4.3%	0.91

Traffic Counts - Motorized Vehicles

Interval Start Time	SR 530 Eastbound				SR 530 Westbound				SMOKEY POINT BLVD W Northbound				SMOKEY POINT BLVD W Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	187	48	0	0	173	0	0	49	0	2	0	0	0	0	459	1,798
4:15 PM	0	0	167	45	0	0	141	0	0	50	0	1	0	0	0	0	404	1,792
4:30 PM	0	0	190	45	0	0	202	0	0	57	0	1	0	0	0	0	495	1,786
4:45 PM	0	0	193	48	0	0	148	0	0	49	0	2	0	0	0	0	440	1,704
5:00 PM	0	0	196	37	0	0	156	0	0	61	0	3	0	0	0	0	453	1,636
5:15 PM	0	0	181	52	0	0	111	0	0	53	0	1	0	0	0	0	398	
5:30 PM	0	0	182	54	0	0	124	0	0	50	0	3	0	0	0	0	413	
5:45 PM	0	0	148	49	0	0	114	0	0	61	0	0	0	0	0	0	372	
Count Total	0	0	1,444	378	0	0	1,169	0	0	430	0	13	0	0	0	0	3,434	
Peak Hour	0	0	737	186	0	0	664	0	0	205	0	6	0	0	0	0	1,798	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	10	7	6	0	23	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	5	5	8	0	18	4:15 PM	0	0	0	0	0	4:15 PM	0	0	1	0	1
4:30 PM	5	8	4	0	17	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	10	8	2	0	20	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	8	11	3	0	22	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	8	8	1	0	17	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	2	6	3	0	11	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	1	6	3	0	10	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	49	59	30	0	138	Count Total	0	0	0	0	0	Count Total	0	0	1	0	1
Peak Hour	30	28	20	0	78	Peak Hour	0	0	0	0	0	Peak Hour	0	0	1	0	1



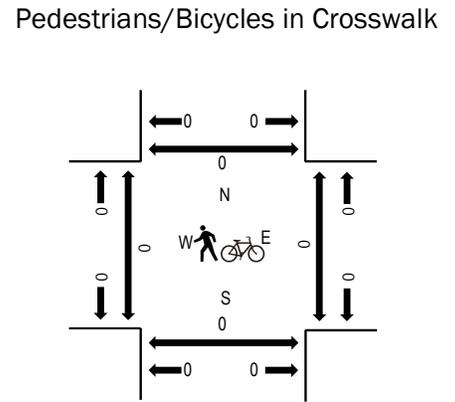
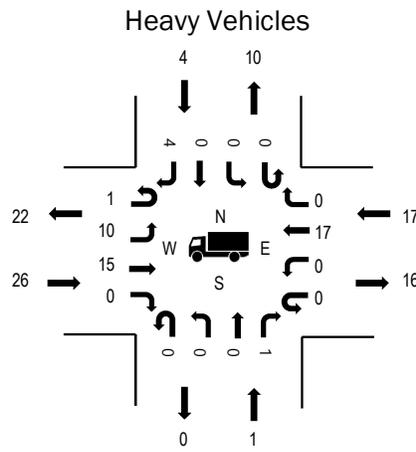
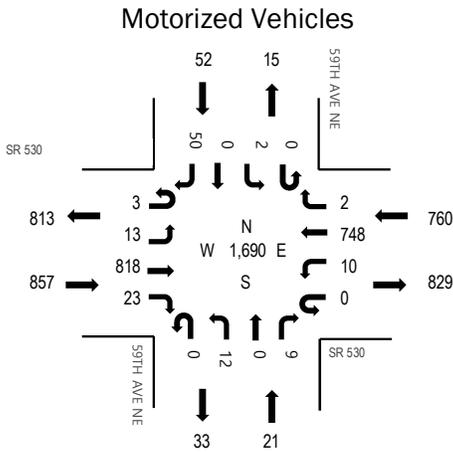
(303) 216-2439  
www.alltrafficdata.net

Location: 4 59TH AVE NE & SR 530 PM

Date: Tuesday, October 1, 2024

Peak Hour: 04:00 PM - 05:00 PM

**Peak Hour**



	HV%	PHF
EB	3.0%	0.98
WB	2.2%	0.91
NB	4.8%	0.58
SB	7.7%	0.52
All	2.8%	0.95

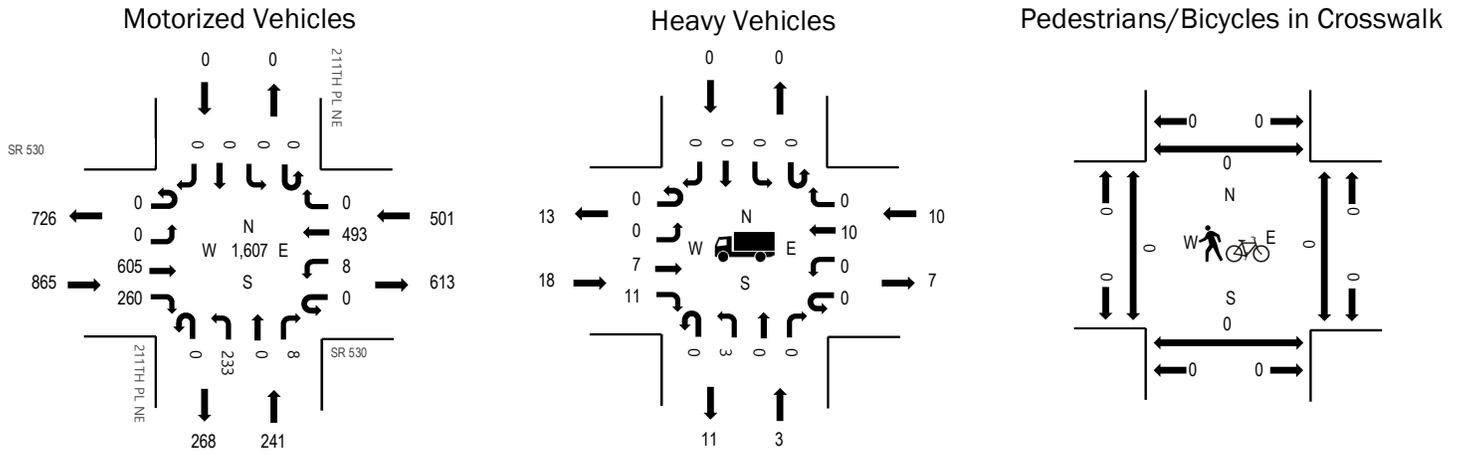
**Traffic Counts - Motorized Vehicles**

Interval Start Time	SR 530 Eastbound				SR 530 Westbound				59TH AVE NE Northbound				59TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	5	208	6	0	4	203	1	0	4	0	4	0	0	0	9	444	1,690
4:15 PM	2	3	207	4	0	2	183	0	0	6	0	3	0	0	0	9	419	1,672
4:30 PM	1	1	196	5	0	2	186	1	0	2	0	1	0	2	0	23	420	1,628
4:45 PM	0	4	207	8	0	2	176	0	0	0	0	1	0	0	0	9	407	1,581
5:00 PM	0	3	234	8	0	2	172	0	0	3	0	1	0	0	0	3	426	1,498
5:15 PM	0	3	211	13	0	0	140	1	0	4	0	1	0	0	0	2	375	
5:30 PM	0	5	221	2	0	1	136	0	0	5	0	0	0	0	0	3	373	
5:45 PM	1	3	182	6	0	2	123	0	0	2	0	2	0	2	0	1	324	
Count Total	4	27	1,666	52	0	15	1,319	3	0	26	0	13	0	4	0	59	3,188	
Peak Hour	3	13	818	23	0	10	748	2	0	12	0	9	0	2	0	50	1,690	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	7	0	5	1	13	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	9	1	5	2	17	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	5	0	7	1	13	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	5	0	0	0	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	8	0	3	0	11	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	6	0	3	0	9	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	7	0	3	0	10	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	2	0	2	0	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	49	1	28	4	82	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	26	1	17	4	48	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Peak Hour



	HV%	PHF
EB	2.1%	0.92
WB	2.0%	0.98
NB	1.2%	0.85
SB	0.0%	0.00
All	1.9%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	SR 530 Eastbound				SR 530 Westbound				211TH PL NE Northbound				211TH PL NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	140	56	0	3	154	0	0	54	0	3	0	0	0	0	410	1,605
4:15 PM	0	0	154	63	0	4	122	0	0	68	0	3	0	0	0	0	414	1,607
4:30 PM	0	0	146	61	0	0	123	0	0	69	0	1	0	0	0	0	400	1,559
4:45 PM	0	0	147	58	0	2	122	0	0	51	0	1	0	0	0	0	381	1,495
5:00 PM	0	0	158	78	0	2	126	0	0	45	0	3	0	0	0	0	412	1,454
5:15 PM	1	0	136	76	0	2	116	0	1	33	0	1	0	0	0	0	366	
5:30 PM	0	0	151	53	0	0	100	0	0	31	0	1	0	0	0	0	336	
5:45 PM	0	0	131	77	0	1	107	0	0	24	0	0	0	0	0	0	340	
Count Total	1	0	1,163	522	0	14	970	0	1	375	0	13	0	0	0	0	3,059	
Peak Hour	0	0	605	260	0	8	493	0	0	233	0	8	0	0	0	0	1,607	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	1	4	0	8	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	6	2	2	0	10	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	4	0	8	0	12	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	3	0	0	0	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	5	1	0	0	6	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	4	1	4	0	9	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	6	0	1	0	7	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	2	0	4	0	6	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	33	5	23	0	61	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	18	3	10	0	31	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



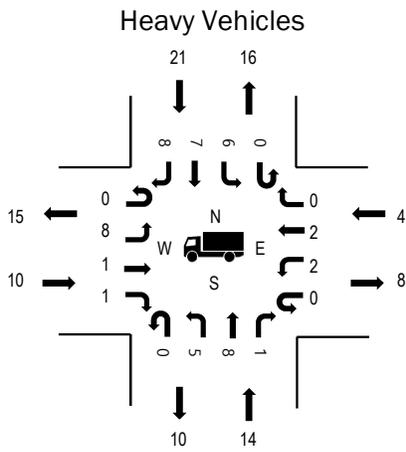
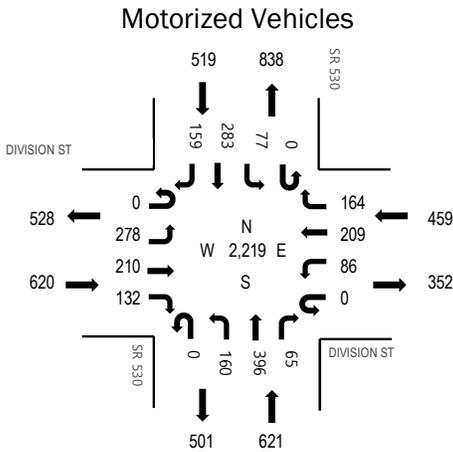
(303) 216-2439  
www.alltrafficdata.net

Location: 6 SR 530 & DIVISION ST PM

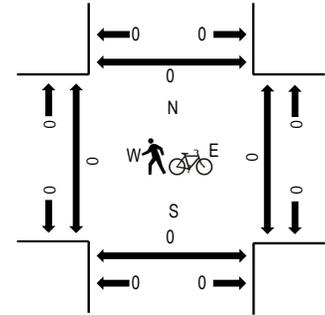
Date: Tuesday, October 1, 2024

Peak Hour: 04:00 PM - 05:00 PM

**Peak Hour**



**Pedestrians/Bicycles in Crosswalk**



	HV%	PHF
EB	1.6%	0.96
WB	0.9%	0.85
NB	2.3%	0.94
SB	4.0%	0.88
All	2.2%	0.93

**Traffic Counts - Motorized Vehicles**

Interval Start Time	DIVISION ST Eastbound				DIVISION ST Westbound				SR 530 Northbound				SR 530 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	68	43	39	0	21	66	42	0	45	105	16	0	20	52	41	558	2,219
4:15 PM	0	78	57	27	0	30	47	58	0	41	107	13	0	20	78	39	595	2,209
4:30 PM	0	64	51	32	0	19	48	34	0	34	84	16	0	17	85	45	529	2,117
4:45 PM	0	68	59	34	0	16	48	30	0	40	100	20	0	20	68	34	537	2,112
5:00 PM	0	76	47	32	0	25	49	34	0	41	107	11	0	17	65	44	548	2,026
5:15 PM	0	68	46	30	0	27	35	26	0	42	95	13	0	15	74	32	503	
5:30 PM	0	71	41	38	0	24	29	21	0	39	109	20	0	14	81	37	524	
5:45 PM	0	61	45	31	0	19	32	21	0	27	81	22	0	15	61	36	451	
Count Total	0	554	389	263	0	181	354	266	0	309	788	131	0	138	564	308	4,245	
Peak Hour	0	278	210	132	0	86	209	164	0	160	396	65	0	77	283	159	2,219	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	3	2	3	9	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	3	2	1	7	13	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	3	4	0	8	15	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:45 PM	3	5	1	3	12	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
5:00 PM	2	1	0	2	5	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	2	0	1	1	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:30 PM	4	4	0	6	14	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	1	2	0	2	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
Count Total	19	21	5	32	77	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	10	14	4	21	49	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



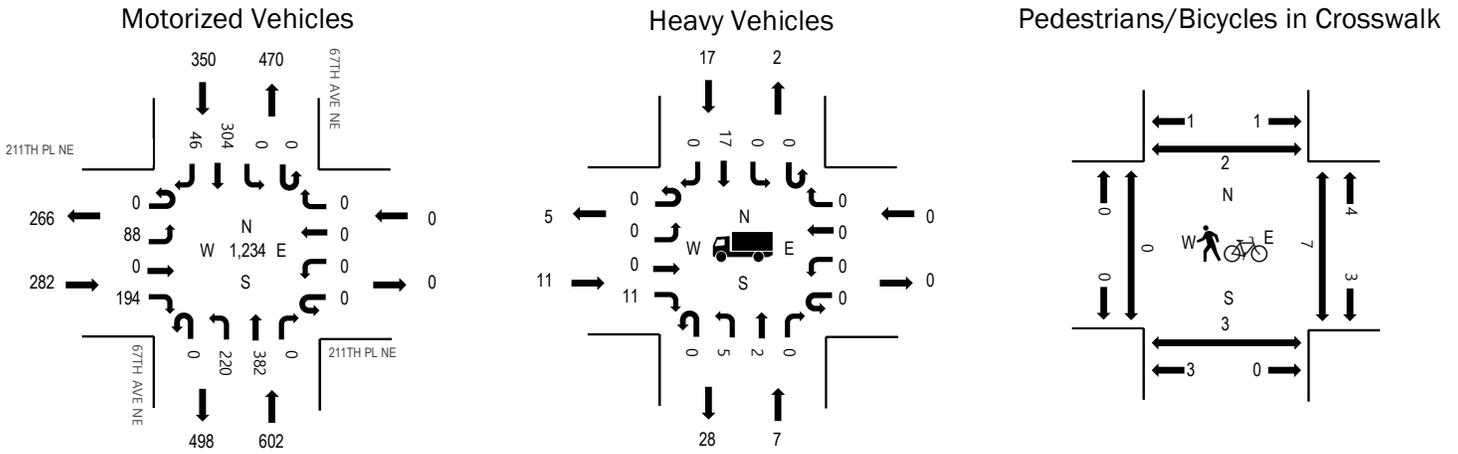
(303) 216-2439  
www.alltrafficdata.net

Location: 7 67TH AVE NE & 211TH PL NE PM

Date: Tuesday, October 1, 2024

Peak Hour: 04:15 PM - 05:15 PM

Peak Hour



	HV%	PHF
EB	3.9%	0.87
WB	0.0%	0.00
NB	1.2%	0.89
SB	4.9%	0.87
All	2.8%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	211TH PL NE Eastbound				211TH PL NE Westbound				67TH AVE NE Northbound				67TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	24	0	49	0	0	0	0	0	57	89	0	0	0	61	17	297	1,209
4:15 PM	0	15	0	47	0	0	0	0	0	49	87	0	0	0	76	19	293	1,234
4:30 PM	0	24	0	46	0	0	0	0	0	76	93	0	0	0	62	11	312	1,220
4:45 PM	0	23	0	46	0	0	0	0	0	46	91	0	0	0	90	11	307	1,146
5:00 PM	0	26	0	55	0	0	0	0	0	49	111	0	0	0	76	5	322	1,065
5:15 PM	0	26	0	54	0	0	0	0	0	30	101	0	0	0	56	12	279	
5:30 PM	0	14	0	41	0	0	0	0	0	26	85	0	0	0	58	14	238	
5:45 PM	0	28	0	46	0	0	0	0	0	30	66	0	0	0	43	13	226	
Count Total	0	180	0	384	0	0	0	0	0	363	723	0	0	0	522	102	2,274	
Peak Hour	0	88	0	194	0	0	0	0	0	220	382	0	0	0	304	46	1,234	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	4	6	0	2	12	4:00 PM	0	0	0	0	0	4:00 PM	0	0	1	0	1
4:15 PM	5	4	0	2	11	4:15 PM	0	0	0	0	0	4:15 PM	0	0	1	0	1
4:30 PM	0	1	0	3	4	4:30 PM	0	0	0	0	0	4:30 PM	0	3	5	2	10
4:45 PM	3	0	0	11	14	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	0	1
5:00 PM	3	2	0	1	6	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:15 PM	3	1	0	0	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	2	0	2
5:30 PM	3	2	0	3	8	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:45 PM	1	2	0	1	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	1	0	1
Count Total	22	18	0	23	63	Count Total	0	0	0	0	0	Count Total	0	3	11	2	16
Peak Hour	11	7	0	17	35	Peak Hour	0	0	0	0	0	Peak Hour	0	3	7	2	12



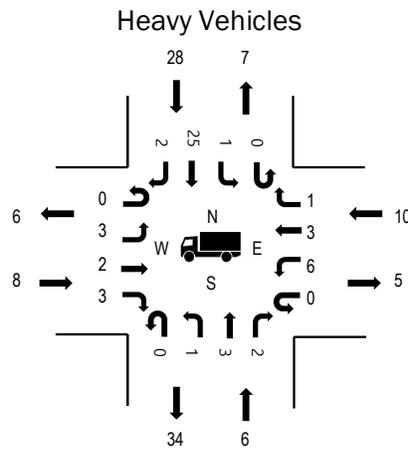
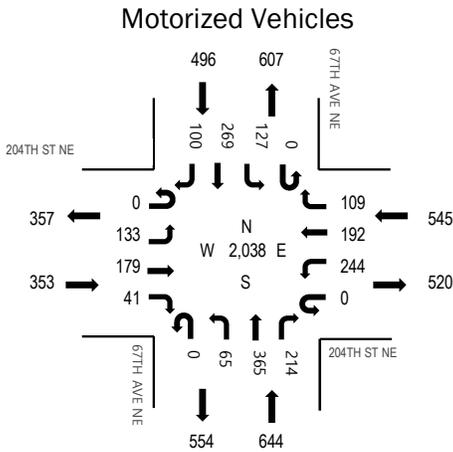
(303) 216-2439  
www.alltrafficdata.net

Location: 8 67TH AVE NE & 204TH ST NE PM

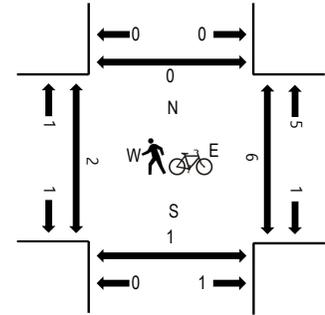
Date: Tuesday, October 1, 2024

Peak Hour: 04:15 PM - 05:15 PM

**Peak Hour**



**Pedestrians/Bicycles in Crosswalk**



	HV%	PHF
EB	2.3%	0.87
WB	1.8%	0.95
NB	0.9%	0.90
SB	5.6%	0.91
All	2.6%	0.96

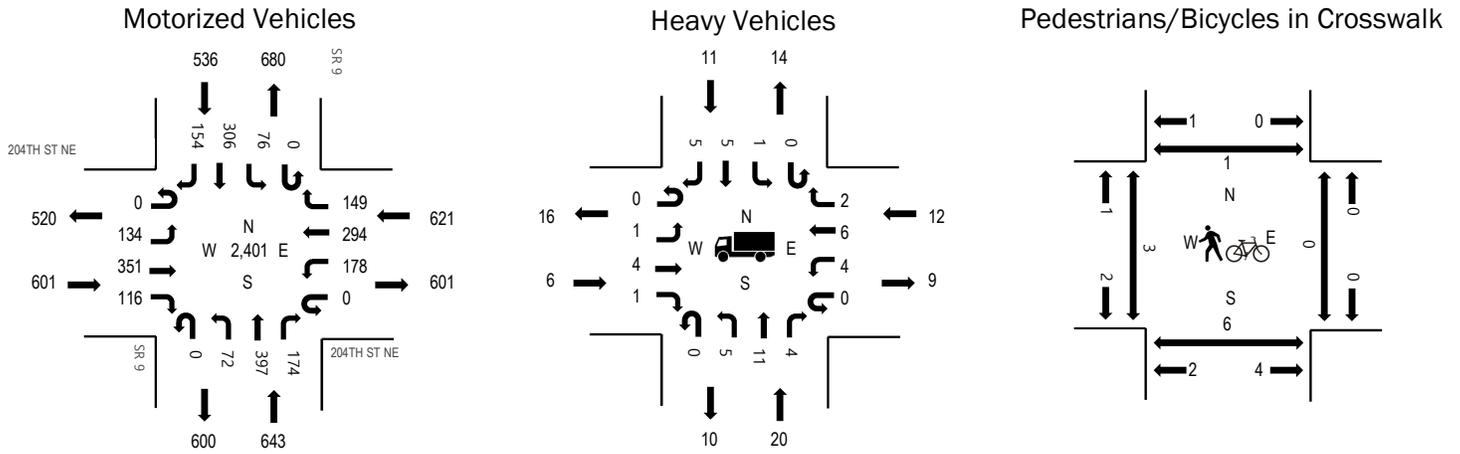
**Traffic Counts - Motorized Vehicles**

Interval Start Time	204TH ST NE Eastbound				204TH ST NE Westbound				67TH AVE NE Northbound				67TH AVE NE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	23	31	13	0	43	64	31	0	11	82	58	0	51	61	29	497	2,003
4:15 PM	0	28	41	8	0	64	46	30	0	16	83	42	0	30	57	30	475	2,038
4:30 PM	0	32	37	12	0	65	40	39	0	13	103	62	0	31	60	22	516	2,011
4:45 PM	0	36	52	13	0	63	51	23	0	15	81	51	0	22	84	24	515	1,891
5:00 PM	0	37	49	8	0	52	55	17	0	21	98	59	0	44	68	24	532	1,750
5:15 PM	0	26	39	12	0	55	38	20	0	5	83	56	0	38	51	25	448	
5:30 PM	0	31	39	10	0	39	42	24	0	9	55	43	0	41	47	16	396	
5:45 PM	0	23	31	8	0	40	44	19	0	8	54	43	0	34	49	21	374	
Count Total	0	236	319	84	0	421	380	203	0	98	639	414	0	291	477	191	3,753	
Peak Hour	0	133	179	41	0	244	192	109	0	65	365	214	0	127	269	100	2,038	

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	7	5	6	7	25	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	4	3	4	5	16	4:15 PM	0	0	0	0	0	4:15 PM	1	0	2	0	3
4:30 PM	1	1	4	5	11	4:30 PM	0	0	0	0	0	4:30 PM	1	0	1	0	2
4:45 PM	1	0	2	11	14	4:45 PM	0	0	0	0	0	4:45 PM	0	0	2	0	2
5:00 PM	2	2	0	7	11	5:00 PM	0	0	0	0	0	5:00 PM	0	1	1	0	2
5:15 PM	1	1	0	3	5	5:15 PM	0	0	0	0	0	5:15 PM	1	0	0	0	1
5:30 PM	0	1	4	5	10	5:30 PM	0	0	0	0	0	5:30 PM	0	0	1	0	1
5:45 PM	1	4	1	3	9	5:45 PM	0	0	0	0	0	5:45 PM	2	0	0	0	2
Count Total	17	17	21	46	101	Count Total	0	0	0	0	0	Count Total	5	1	7	0	13
Peak Hour	8	6	10	28	52	Peak Hour	0	0	0	0	0	Peak Hour	2	1	6	0	9

Peak Hour



	HV%	PHF
EB	1.0%	0.91
WB	1.9%	0.95
NB	3.1%	0.93
SB	2.1%	0.94
All	2.0%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	204TH ST NE Eastbound				204TH ST NE Westbound				SR 9 Northbound				SR 9 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	34	86	30	0	40	82	40	0	20	111	35	0	16	80	26	600	2,401
4:15 PM	0	25	92	25	0	44	84	36	0	22	95	35	0	20	81	34	593	2,382
4:30 PM	0	45	96	32	0	48	64	35	0	12	95	45	0	23	67	58	620	2,401
4:45 PM	0	30	77	29	0	46	64	38	0	18	96	59	0	17	78	36	588	2,371
5:00 PM	0	34	94	30	0	46	61	38	0	14	81	50	0	19	78	36	581	2,305
5:15 PM	0	34	99	29	0	49	65	34	0	14	97	45	0	21	91	34	612	
5:30 PM	0	22	92	29	0	50	64	42	0	25	91	45	0	20	78	32	590	
5:45 PM	0	19	73	32	0	28	53	26	0	31	95	49	0	20	69	27	522	
Count Total	0	243	709	236	0	351	537	289	0	156	761	363	0	156	622	283	4,706	
Peak Hour	0	134	351	116	0	178	294	149	0	72	397	174	0	76	306	154	2,401	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	2	5	1	4	12	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	3	3	6	3	15	4:15 PM	0	0	0	0	0	4:15 PM	2	2	0	1	5
4:30 PM	0	8	4	4	16	4:30 PM	0	0	0	0	0	4:30 PM	1	2	0	0	3
4:45 PM	1	4	1	0	6	4:45 PM	0	0	0	0	0	4:45 PM	0	2	0	0	2
5:00 PM	1	3	0	0	4	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	2	2
5:15 PM	0	2	1	2	5	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	2	2
5:30 PM	1	3	2	3	9	5:30 PM	0	0	0	0	0	5:30 PM	0	1	1	0	2
5:45 PM	1	2	1	1	5	5:45 PM	0	0	0	0	0	5:45 PM	0	1	0	0	1
Count Total	9	30	16	17	72	Count Total	0	0	0	0	0	Count Total	3	8	1	5	17
Peak Hour	6	20	12	11	49	Peak Hour	0	0	0	0	0	Peak Hour	3	6	0	1	10

# Appendix C

## Crash History

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	MILEPOST	BLOCK NUMBER	INTERSECTION TRAFFICWAY	DIST FROM REF POINT	M/ or FT	COM P DIR OF REF	REFERE NCE POINT NAME	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# FAULT	# PEDES	# BIKES	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO
City Street	Snohomish	Arlington	204TH ST NE	6633	67TH AVE NE					E813281	03/10/2021	18:26	Possible Injury	2	0	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
City Street	Snohomish	Arlington	204TH ST NE	6633	67TH AVE NE					E815519	10/24/2023	17:08	No Apparent Injury	0	0	0	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
City Street	Snohomish	Arlington	204TH ST NE	6633	67TH AVE NE					E805848	02/21/2021	14:29	Possible Injury	2	0	3	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	West	East	Vehicle Stop	Vehicle Stopped
City Street	Snohomish	Arlington	204TH ST NE		67TH AVE NE					E872672	08/04/2022	07:49	No Apparent Injury	0	1	0	0	Fence	Making Left Turn		East	South		
City Street	Snohomish	Arlington	204TH ST NE		67TH AVE NE					E804782	02/04/2021	16:20	Possible Injury	1	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stop	Vehicle Stopped
City Street	Snohomish	Arlington	211TH PL NE	0	67TH AVE NE					E854502	08/11/2020	08:51	No Apparent Injury	0	0	2	0	From same direction - one right turn - one straight	Overtaking and Passing	Making Right Turn	West	East	West	South
City Street	Snohomish	Arlington	211TH PL NE	6998	67TH AVE NE					E873780	10/02/2021	06:15	No Apparent Injury	0	0	1	0	Retaining Wall (concrete, rock, brick, etc.)	Going Straight Ahead		West	East		
City Street	Snohomish	Arlington	211TH PL NE	6998	67TH AVE NE					E853536	06/03/2022	08:49	Unknown	0	0	1	0	Signal Pole	Making Right Turn		West	South		
City Street	Snohomish	Arlington	211TH PL NE	6998	67TH AVE NE					E091023	08/15/2023	13:37	No Apparent Injury	0	0	2	0	From same direction - one right turn - one straight	Going Straight Ahead	Making Right Turn	East	South	West	South
City Street	Snohomish	Arlington	211TH PL NE	6998	67TH AVE NE					E077860	10/10/2023	09:28	No Apparent Injury	0	0	2	0	From same direction - all others	Backing	Stopped at Signal or Stop Sign	Vehicle Back	Vehicle Back	Vehicle Stop	Vehicle Stopped
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E032625	09/25/2023	05:26	Possible Injury	1	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E226031	11/22/2023	07:51	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	Snohomish	Arlington	67TH AVE NE	0	204TH ST NE					E988341	07/09/2019	15:49	Possible Injury	1	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	Snohomish	Arlington	67TH AVE NE	0	204TH ST NE					E947129	07/12/2019	11:00	Unknown	0	0	1	0	Fence	Making Left Turn		East	South		
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E039995	03/06/2023	13:39	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stop	Vehicle Stopped
City Street	Snohomish	Arlington	67TH AVE NE	0	204TH ST NE					E427007	03/22/2020	11:10	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E830728	12/14/2023	16:49	No Apparent Injury	0	0	2	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead		North	South	South	North
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E400404	04/24/2022	16:40	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North
City Street	Snohomish	Arlington	67TH AVE NE	20368	204TH ST NE					E827746	05/05/2021	10:07	No Apparent Injury	0	0	2	0	From same direction - all others	Backing	Stopped for Traffic	Vehicle Back	Vehicle Back	Vehicle Stop	Vehicle Stopped
City Street	Snohomish	Arlington	67TH AVE NE	0	211TH PL NE					E879428	11/07/2019	06:00	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South
City Street	Snohomish	Arlington	67TH AVE NE	21100	211TH PL NE					E824198	04/22/2021	11:36	No Apparent Injury	0	0	1	0	Signal Pole	Making Right Turn		West	South		
City Street	Snohomish	Arlington	67TH AVE NE	0	211TH PL NE					E984432	11/20/2019	14:50	Possible Injury	1	0	2	0	From same direction - both going straight - one stopped - rear-end	Slowing	Stopped at Signal or Stop Sign	North	South	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	28.22						E871466	09/21/2021	17:16	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	28.22						E473515	10/17/2020	21:03	Suspected Minor Injury	1	1	0	0	Person fell, jumped or was pushed from vehicle	Stopped at Signal or Stop Sign		South	Vehicle Stopped		
State Route	Snohomish	Arlington	009	28.22						E838838	04/10/2022	17:45	No Apparent Injury	0	0	2	0	From same direction - both moving - rear-end	Slowing		South	North	South	North
State Route	Snohomish	Arlington	009	28.22						E413100	02/06/2020	16:45	Possible Injury	1	0	0	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	28.22						E829988	03/18/2022	20:24	Possible Injury	1	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South
State Route	Snohomish	Arlington	009	28.22						E047665	04/01/2023	23:17	No Apparent Injury	0	0	2	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East
State Route	Snohomish	Arlington	009	28.22						E827096	04/26/2021	16:36	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	28.22						E996486	12/22/2019	09:13	No Apparent Injury	0	0	2	0	Entering at angle	Making Right Turn	Going Straight Ahead	South	East	East	South
State Route	Snohomish	Arlington	009	28.22						E011615	12/06/2022	22:32	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East
State Route	Snohomish	Arlington	009	28.22						E812069	03/08/2021	06:23	No Apparent Injury	0	0	2	0	Entering at angle	Starting in Traffic Lane	Going Straight Ahead	North	South	East	West
State Route	Snohomish	Arlington	009	28.22						E442738	06/25/2020	12:14	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	28.22						E013850	12/12/2022	07:15	Possible Injury	1	0	1	0	Vehicle turning right hits pedestrian	Making Right Turn		East	North		
State Route	Snohomish	Arlington	009	28.22						E956297	08/30/2019	07:10	No Apparent Injury	0	0	2	0	From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	West	East	West	East
State Route	Snohomish	Arlington	009	28.23						E822553	01/20/2022	02:38	Dead at Scene	0	2	1	2	Vehicle going straight hits pedestrian	Going Straight Ahead		North	South		
State Route	Snohomish	Arlington	009	29.45						E896650	11/25/2021	14:20	No Apparent Injury	0	0	1	0	Street Light Pole or Base	Making Left Turn		East	South		
State Route	Snohomish	Arlington	009	29.46						E863917	07/12/2022	18:41	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
State Route	Snohomish	Arlington	009	29.46						E046223	03/27/2023	13:57	Possible Injury	1	0	2	0	Entering at angle	Making Left Turn	Going Straight Ahead	West	North	South	West
State Route	Snohomish	Arlington	009	29.46						E947211	08/05/2019	14:19	No Apparent Injury	0	0	3	0	Entering at angle	Making Left Turn	Stopped at Signal or Stop Sign	West	North	North	Vehicle Stopped
State Route	Snohomish	Arlington	009	29.46						E934831	05/22/2020	18:15	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Going Straight Ahead	Going Straight Ahead	North	South	South	West
State Route	Snohomish	Arlington	009	29.46						E963090	09/21/2019	01:47	Possible Injury	1	0	2	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	West	East	South	North
State Route	Snohomish	Arlington	009	29.46						E462102	09/07/2020	23:18	Suspected Serious Injury	1	0	2	0	Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East
State Route	Snohomish	Arlington	009	29.46						E052300	12/22/2021	16:51	Suspected Serious Injury	2	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South
State Route	Snohomish	Arlington	009	29.46						E975563	10/26/2019	15:50	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	South	North	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	29.46						E860437	08/21/2021	20:04	Possible Injury	1	0	2	0	Entering at angle	Going Straight Ahead	Making Left Turn	North	South	East	South
State Route	Snohomish	Arlington	009	29.46						E048310	01/28/2020	17:42	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	29.46						E414639	02/14/2020	10:06	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	West	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	29.46						E331805	12/18/2023	06:06	No Apparent Injury	0	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South
State Route	Snohomish	Arlington	009	29.46						E431111	02/10/2020	07:34	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	009	29.46						E453615	07/28/2020	14:41	Possible Injury	1	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	West	South	West	South
State Route	Snohomish	Arlington	009	29.46						E827698	04/16/2021	14:17	Possible Injury	1	0	2	0	From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West
State Route	Snohomish	Arlington	530	20.79						E942450	07/22/2019	09:08	No Apparent Injury	0	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	West	South
State Route	Snohomish	Arlington	530	20.79						E465683	09/22/2020	18:50	Possible Injury	1	0	2	0	From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stop	Vehicle Stopped
State Route	Snohomish	Arlington	530	20.79						E067010	05/27/2023	19:04	No Apparent Injury	0	0	2	0	From same direction - both going straight - both moving - rear-end	Slowing		West	East	West	East
State Route	Snohomish	Arlington	530	20.79						E484288	11/25/2020	17:53	No Apparent Injury	0										



# Appendix D

## Level of Service (LOS) Methodology and Calculations

## Level of Service Methodology

Level of Service (LOS) generally refers to the degree of congestion at an intersection. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. A letter scale from A to F generally describes intersection LOS.

**Signalized Intersection LOS** represents the average control delay (sec/veh) and can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7<sup>th</sup> Edition) LOS criteria for signalized intersections.

### LOS Criteria for Signalized Intersections <sup>1</sup>

Control Delay (sec/veh)	Level of Service <sup>2</sup>	General Description <sup>3</sup>
≤ 10	A	Exceptionally Favorable Progression (or very short cycle lengths) – Most vehicles arrive during the green indication and travel through the intersection without stopping.
> 10 to ≤ 20	B	Highly Favorable Progression (or short cycle lengths) – While more vehicles than LOS A stop, most vehicles still pass through the intersection without stopping.
> 20 to ≤ 35	C	Favorable Progression (or moderate cycle lengths) – Individual cycle failures begin to appear, but many vehicles still pass through the intersection without stopping.
> 35 to ≤ 55	D	Ineffective Progression (or long cycle lengths) – Many vehicles stop and individual cycle failures are noticeable.
> 55 to ≤ 80	E	Unfavorable Progression (and long cycle lengths) – Individual cycle failures are frequent.
> 80	F	Very Poor Progression (and long cycle lengths) – Most cycles fail to clear the queue at this level.

<sup>1</sup> Source: Highway Capacity Manual 7<sup>th</sup> Edition, Transportation Research Board, 2022.

<sup>2</sup> If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at signals, LOS is defined solely by control delay.

<sup>3</sup> Individual cycle failures: one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle.

Synchro 12 and/or HCM 2000 LOS methodology may be used when HCM 7<sup>th</sup> Edition methodology is not supported at an intersection (i.e., intersection geometry and/or custom phasing) or jurisdictional standards require use of an alternative methodology.

**Unsignalized Intersection LOS** (two-way stop control, all-way stop control, and roundabouts) is based on the average control delay. For two-way stop-controlled intersections, the LOS criteria apply to each controlled minor-street approach, controlled minor-street lane group, and controlled major-street movement (additional v/c ratio criteria apply to lane group LOS only). LOS is not calculated for major-street approaches or for the intersection as a whole at two-way stop-controlled intersections. For all-way stop-controlled intersections and roundabouts, LOS can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only). The table below outlines the HCM (7<sup>th</sup> Edition) LOS criteria for unsignalized intersections based on these methodologies.

### LOS Criteria for Unsignalized Intersections<sup>1</sup>

Control Delay (sec/veh)	Level of Service <sup>2</sup>
≤ 10	A
> 10 to ≤ 15	B
> 15 to ≤ 25	C
> 25 to ≤ 35	D
> 35 to ≤ 50	E
> 50	F

<sup>1</sup> Source: Highway Capacity Manual 7<sup>th</sup> Edition, Transportation Research Board, 2022.

<sup>2</sup> If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0, LOS F is assigned to the individual lane group. For approach-based and intersection-wide assessments at unsignalized intersections, LOS is defined solely by control delay.



2024 Existing

Lanes, Volumes, Timings

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

10/16/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑	
Traffic Volume (vph)	0	131	81	336	247	0	0	0	0	370	2	46
Future Volume (vph)	0	131	81	336	247	0	0	0	0	370	2	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		5%			5%			5%			0%	
Storage Length (ft)	0		100	230		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		477			666			304			251	
Travel Time (s)		9.3			13.0			8.3			6.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	15%	15%	7%	7%	7%	0%	0%	0%	11%	11%	11%
Shared Lane Traffic (%)												
Turn Type		NA	Perm	pm+pt	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								
Detector Phase		2	2	1	6					4	4	
Switch Phase												
Minimum Initial (s)		7.0	7.0	5.0	7.0					7.0	7.0	
Minimum Split (s)		31.8	31.8	11.0	32.0					38.8	38.8	
Total Split (s)		25.0	25.0	20.0	45.0					55.0	55.0	
Total Split (%)		25.0%	25.0%	20.0%	45.0%					55.0%	55.0%	
Yellow Time (s)		3.8	3.8	4.0	4.0					3.8	3.8	
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Total Lost Time (s)		5.8	5.8	6.0	6.0					5.8	5.8	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Min	C-Min	None	C-Min					None	None	

Intersection Summary

Area Type: Other

Cycle Length: 100

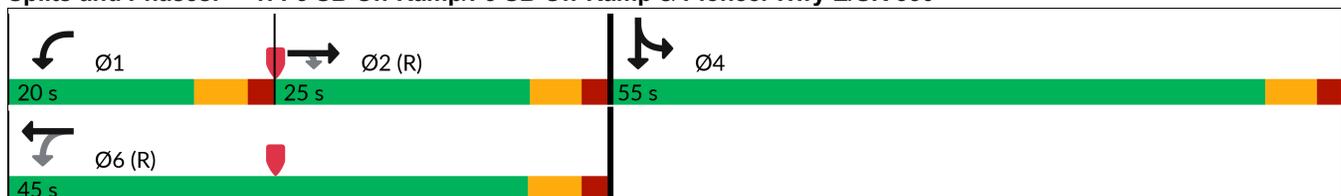
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530



HCM 7th Signalized Intersection Summary

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	131	81	336	247	0	0	0	0	370	2	46
Future Volume (veh/h)	0	131	81	336	247	0	0	0	0	370	2	46
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1530	1530	1649	1649	0				1737	1737	1737
Adj Flow Rate, veh/h	0	136	84	350	257	0				385	2	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	15	15	7	7	0				11	11	11
Cap, veh/h	0	559	474	602	932	0				458	2	57
Arrive On Green	0.00	0.37	0.37	0.23	0.94	0.00				0.32	0.32	0.32
Sat Flow, veh/h	0	1530	1297	1570	1649	0				1445	8	180
Grp Volume(v), veh/h	0	136	84	350	257	0				435	0	0
Grp Sat Flow(s),veh/h/ln	0	1530	1297	1570	1649	0				1632	0	0
Q Serve(g_s), s	0.0	6.2	4.4	14.0	1.2	0.0				24.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.2	4.4	14.0	1.2	0.0				24.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.89		0.11
Lane Grp Cap(c), veh/h	0	559	474	602	932	0				517	0	0
V/C Ratio(X)	0.00	0.24	0.18	0.58	0.28	0.00				0.84	0.00	0.00
Avail Cap(c_a), veh/h	0	559	474	602	932	0				803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	22.1	21.5	14.0	1.3	0.0				31.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.8	1.1	0.6	0.0				7.1	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
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.4	4.1	0.4	0.0				10.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	23.2	22.4	15.1	1.8	0.0				38.9	0.0	0.0
LnGrp LOS		C	C	B	A					D		
Approach Vol, veh/h		220			607						435	
Approach Delay, s/veh		22.9			9.5						38.9	
Approach LOS		C			A						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.0	42.5		37.5		62.5						
Change Period (Y+Rc), s	6.0	* 6		5.8		6.0						
Max Green Setting (Gmax), s	14.0	* 19		49.2		39.0						
Max Q Clear Time (g_c+I1), s	16.0	8.2		26.8		3.2						
Green Ext Time (p_c), s	0.0	1.0		4.9		2.3						

Intersection Summary

HCM 7th Control Delay, s/veh	21.9
HCM 7th LOS	C

Notes

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

\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	471	0	0	483	483	98	1	519	0	0	0
Future Volume (vph)	30	471	0	0	483	483	98	1	519	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			4%			0%			0%	
Storage Length (ft)	230		0	0		170	100		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25				25
Link Distance (ft)		666			428			363				210
Travel Time (s)		13.0			8.3			9.9				5.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	9%	9%	5%	5%	5%	7%	7%	7%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	7.0			7.0	7.0	7.0	7.0	7.0			
Minimum Split (s)	11.0	31.0			32.8	32.8	36.8	36.8	36.8			
Total Split (s)	12.0	57.0			45.0	45.0	43.0	43.0	43.0			
Total Split (%)	12.0%	57.0%			45.0%	45.0%	43.0%	43.0%	43.0%			
Yellow Time (s)	4.0	4.0			3.8	3.8	3.8	3.8	3.8			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0			0.0	0.0		
Total Lost Time (s)	6.0	6.0			5.8	5.8			5.8	5.8		
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None			

Intersection Summary

Area Type: Other

Cycle Length: 100

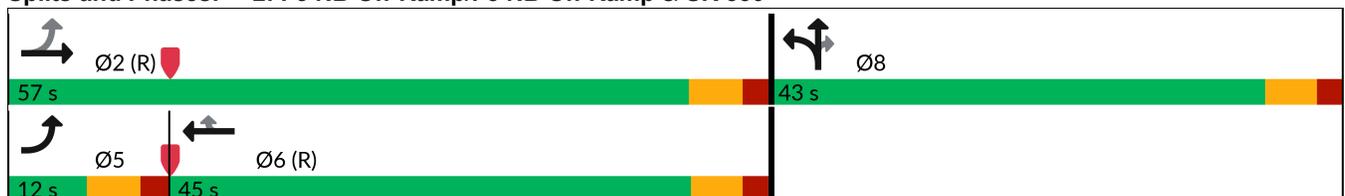
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530



HCM 7th Signalized Intersection Summary  
 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

10/16/2024

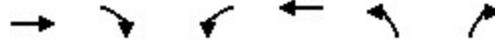
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	471	0	0	483	483	98	1	519	0	0	0
Future Volume (veh/h)	30	471	0	0	483	483	98	1	519	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
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	1714	1714	0	0	1732	1732	1796	1796	1796			
Adj Flow Rate, veh/h	33	523	0	0	537	537	109	1	577			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	9	9	0	0	5	5	7	7	7			
Cap, veh/h	198	874	0	0	727	616	631	6	566			
Arrive On Green	0.06	1.00	0.00	0.00	0.42	0.42	0.37	0.37	0.37			
Sat Flow, veh/h	1632	1714	0	0	1732	1468	1696	16	1522			
Grp Volume(v), veh/h	33	523	0	0	537	537	110	0	577			
Grp Sat Flow(s),veh/h/ln	1632	1714	0	0	1732	1468	1711	0	1522			
Q Serve(g_s), s	1.1	0.0	0.0	0.0	26.1	33.5	4.3	0.0	37.2			
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	26.1	33.5	4.3	0.0	37.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	198	874	0	0	727	616	637	0	566			
V/C Ratio(X)	0.17	0.60	0.00	0.00	0.74	0.87	0.17	0.00	1.02			
Avail Cap(c_a), veh/h	247	874	0	0	727	616	637	0	566			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	18.0	0.0	0.0	0.0	24.4	26.5	21.1	0.0	31.4			
Incr Delay (d2), s/veh	0.4	2.9	0.0	0.0	6.6	15.6	0.2	0.0	42.7			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.7	0.0	0.0	11.5	13.7	1.8	0.0	20.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.4	2.9	0.0	0.0	31.0	42.1	21.3	0.0	74.1			
LnGrp LOS	B	A			C	D	C		F			
Approach Vol, veh/h		556			1074			687				
Approach Delay, s/veh		3.8			36.5			65.6				
Approach LOS		A			D			E				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		57.0			9.0	48.0		43.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.8				
Max Green Setting (Gmax), s		51.0			6.0	* 39		37.2				
Max Q Clear Time (g_c+I1), s		2.0			3.1	35.5		39.2				
Green Ext Time (p_c), s		5.6			0.0	2.4		0.0				

Intersection Summary

HCM 7th Control Delay, s/veh	37.3
HCM 7th LOS	D

Notes

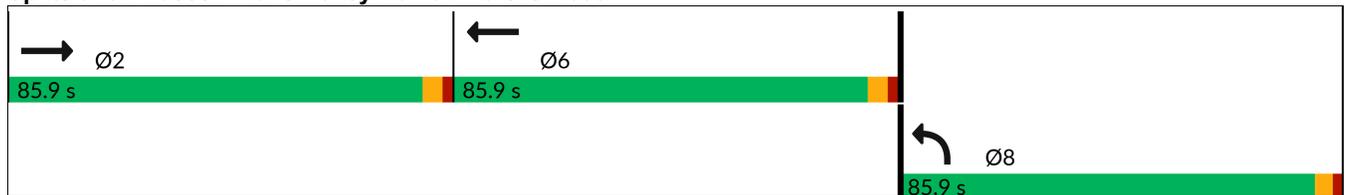
\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	737	186	0	664	205	6
Future Volume (vph)	737	186	0	664	205	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	315			242	242	
Travel Time (s)	6.1			4.7	4.7	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	13%	13%
Shared Lane Traffic (%)						
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	7.0			7.0	5.0	
Minimum Split (s)	40.9			23.9	28.5	
Total Split (s)	85.9			85.9	85.9	
Total Split (%)	33.3%			33.3%	33.3%	
Yellow Time (s)	3.9			3.9	3.5	
All-Red Time (s)	2.0			2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.9			5.9	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min			Min	None	

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 257.7  
 Actuated Cycle Length: 214.5  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated

**Splits and Phases: 3: Smokey Point Blvd & SR 530**



HCM 7th Signalized Intersection Summary  
 3: Smokey Point Blvd & SR 530

10/16/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Volume (veh/h)	737	186	0	664	205	6
Future Volume (veh/h)	737	186	0	664	205	6
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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	1856	0	1856	1707	1707
Adj Flow Rate, veh/h	810	204	0	730	225	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	0	3	13	13
Cap, veh/h	962	242	0	1248	281	9
Arrive On Green	0.67	0.67	0.00	0.67	0.18	0.18
Sat Flow, veh/h	1430	360	0	1856	1565	49
Grp Volume(v), veh/h	0	1014	0	730	233	0
Grp Sat Flow(s),veh/h/ln	0	1791	0	1856	1620	0
Q Serve(g_s), s	0.0	33.0	0.0	16.4	10.6	0.0
Cycle Q Clear(g_c), s	0.0	33.0	0.0	16.4	10.6	0.0
Prop In Lane		0.20	0.00		0.97	0.03
Lane Grp Cap(c), veh/h	0	1204	0	1248	291	0
V/C Ratio(X)	0.00	0.84	0.00	0.58	0.80	0.00
Avail Cap(c_a), veh/h	0	1855	0	1922	1687	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.5	0.0	6.8	30.3	0.0
Incr Delay (d2), s/veh	0.0	2.9	0.0	0.6	7.1	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	10.1	0.0	4.9	4.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	12.4	0.0	7.4	37.4	0.0
LnGrp LOS		B		A	D	
Approach Vol, veh/h	1014			730	233	
Approach Delay, s/veh	12.4			7.4	37.4	
Approach LOS	B			A	D	
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.8			57.8	19.4
Change Period (Y+Rc), s		5.9			5.9	5.5
Max Green Setting (Gmax), s		80.0			80.0	80.4
Max Q Clear Time (g_c+I1), s		35.0			18.4	12.6
Green Ext Time (p_c), s		16.9			9.5	1.2
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			13.5			
HCM 7th LOS			B			

# LANE LEVEL OF SERVICE

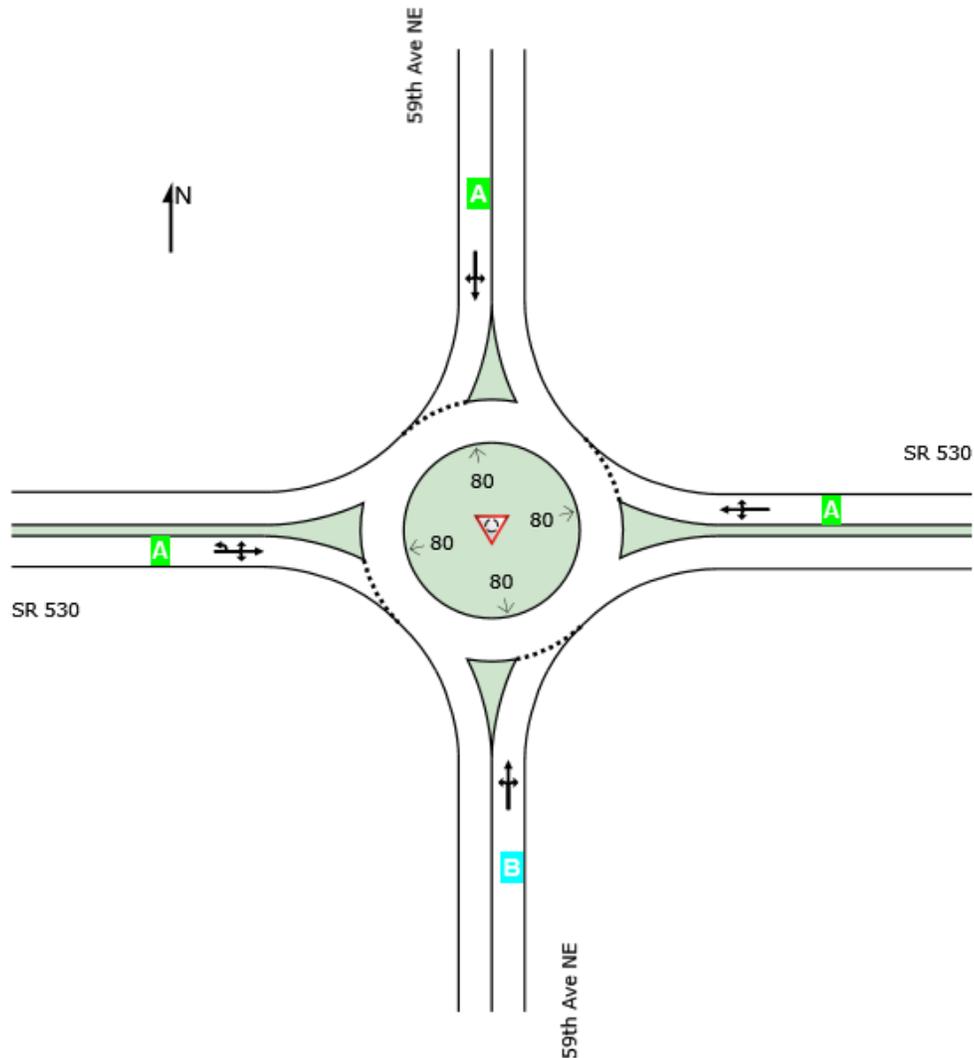
## Lane Level of Service

 Site: 4 [59th Ave NE / SR 530 (Site Folder: 2024 Existing - Weekday PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Kraetz Rd / SR 530  
 Site Category: 2024 Existing - Weekday PM Peak Hour  
 Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	A	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 4 [59th Ave NE / SR 530 (Site Folder: 2024 Existing - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

Kraetz Rd / SR 530  
 Site Category: 2024 Existing - Weekday PM Peak Hour  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [ Total HV ]		Arrival Flows [ Total HV ]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [ Veh. veh ] [ Dist ]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			ft				mph
South: 59th Ave NE															
3	L2	All MCs	13	5.0	13	5.0	0.038	15.3	LOS B	0.2	5.2	0.72	0.74	0.72	31.3
8	T1	All MCs	1	5.0	1	5.0	0.038	10.0	LOS B	0.2	5.2	0.72	0.74	0.72	31.9
18	R2	All MCs	9	5.0	9	5.0	0.038	10.0	LOS A	0.2	5.2	0.72	0.74	0.72	31.6
Approach			23	5.0	23	5.0	0.038	12.9	LOS B	0.2	5.2	0.72	0.74	0.72	31.4
East: SR 530															
1	L2	All MCs	11	2.0	11	2.0	0.623	9.8	LOS A	6.4	163.8	0.27	0.39	0.27	34.7
6	T1	All MCs	787	2.0	787	2.0	0.623	4.5	LOS A	6.4	163.8	0.27	0.39	0.27	35.5
16	R2	All MCs	2	2.0	2	2.0	0.623	4.5	LOS A	6.4	163.8	0.27	0.39	0.27	35.1
Approach			800	2.0	800	2.0	0.623	4.6	LOS A	6.4	163.8	0.27	0.39	0.27	35.5
North: 59th Ave NE															
7	L2	All MCs	2	8.0	2	8.0	0.091	15.0	LOS B	0.5	12.7	0.71	0.72	0.71	32.4
4	T1	All MCs	1	8.0	1	8.0	0.091	9.7	LOS A	0.5	12.7	0.71	0.72	0.71	33.2
14	R2	All MCs	53	8.0	53	8.0	0.091	9.6	LOS A	0.5	12.7	0.71	0.72	0.71	32.8
Approach			56	8.0	56	8.0	0.091	9.8	LOS A	0.5	12.7	0.71	0.72	0.71	32.8
West: SR 530															
5u	U	All MCs	3	3.0	3	3.0	0.696	11.9	LOS B	8.6	220.9	0.21	0.39	0.21	34.9
5	L2	All MCs	14	3.0	14	3.0	0.696	9.6	LOS A	8.6	220.9	0.21	0.39	0.21	34.9
2	T1	All MCs	861	3.0	861	3.0	0.696	4.3	LOS A	8.6	220.9	0.21	0.39	0.21	35.7
12	R2	All MCs	24	3.0	24	3.0	0.696	4.3	LOS A	8.6	220.9	0.21	0.39	0.21	35.3
Approach			902	3.0	902	3.0	0.696	4.4	LOS A	8.6	220.9	0.21	0.39	0.21	35.6
All Vehicles			1781	2.7	1781	2.7	0.696	4.8	LOS A	8.6	220.9	0.26	0.40	0.26	35.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

# LANE LEVEL OF SERVICE

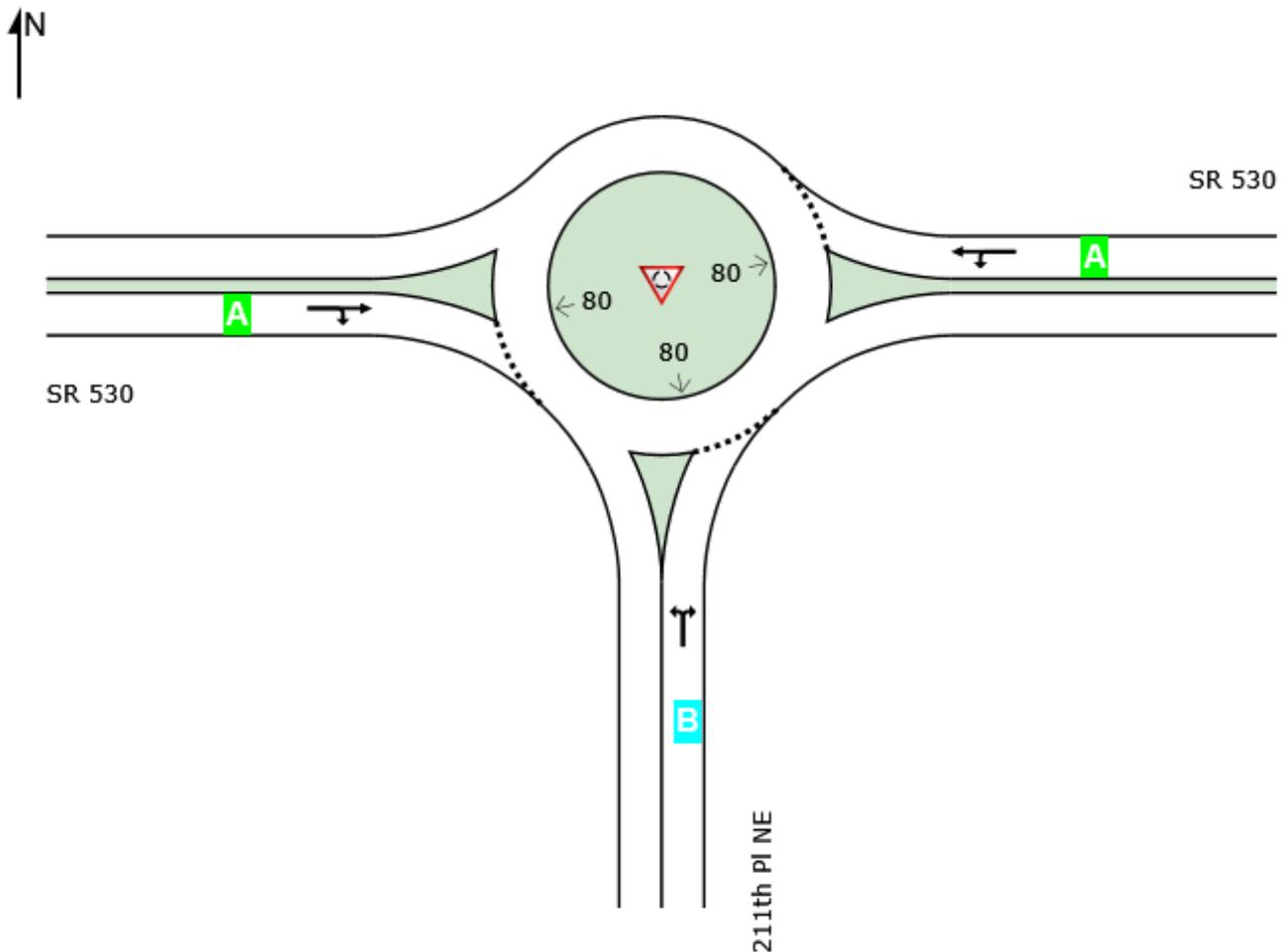
## Lane Level of Service

 Site: 5 [211th PI NE / SR 530 (Site Folder: 2024 Existing - Weekday PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

211th PI NE / SR 530  
 Site Category: 2024 Existing - Weekday PM Peak Hour  
 Roundabout

	Approaches			Intersection
	South	East	West	
LOS	B	A	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 5 [211th PI NE / SR 530 (Site Folder: 2024 Existing - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

211th PI NE / SR 530  
 Site Category: 2024 Existing - Weekday PM Peak Hour  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				mph
			veh/h		veh/h					veh	ft				
South: 211th PI NE															
3	L2	All MCs	240	1.0	240	1.0	0.295	13.2	LOS B	1.7	41.9	0.66	0.74	0.66	31.4
18	R2	All MCs	8	1.0	8	1.0	0.295	7.9	LOS A	1.7	41.9	0.66	0.74	0.66	31.8
Approach			248	1.0	248	1.0	0.295	13.0	LOS B	1.7	41.9	0.66	0.74	0.66	31.4
East: SR 530															
1	L2	All MCs	8	2.0	8	2.0	0.484	11.1	LOS B	3.5	88.2	0.57	0.54	0.57	33.8
6	T1	All MCs	508	2.0	508	2.0	0.484	5.8	LOS A	3.5	88.2	0.57	0.54	0.57	34.5
Approach			516	2.0	516	2.0	0.484	5.9	LOS A	3.5	88.2	0.57	0.54	0.57	34.5
West: SR 530															
2	T1	All MCs	624	2.0	624	2.0	0.679	4.2	LOS A	8.5	215.9	0.15	0.40	0.15	35.9
12	R2	All MCs	268	2.0	268	2.0	0.679	4.2	LOS A	8.5	215.9	0.15	0.40	0.15	35.6
Approach			892	2.0	892	2.0	0.679	4.2	LOS A	8.5	215.9	0.15	0.40	0.15	35.8
All Vehicles			1657	1.9	1657	1.9	0.679	6.0	LOS A	8.5	215.9	0.36	0.49	0.36	34.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: T:\Active Projects\Quarterra SR 530 Site (Arlington) - 2024-143\Planning\LOS\Quarterra SR 530 Site (Arlington) - Sidra.sip9

Lanes, Volumes, Timings  
6: SR 9/SR 530 & Division St/W Division St

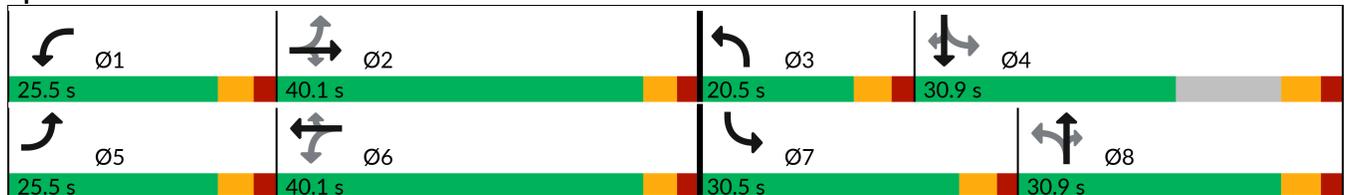
10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	210	132	86	209	164	160	396	65	77	283	159
Future Volume (vph)	278	210	132	86	209	164	160	396	65	77	283	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	320		60	165		0	290		160	140		65
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			25			35			40	
Link Distance (ft)		510			418			679			523	
Travel Time (s)		6.3			11.4			13.2			8.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	4%	4%	4%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm									
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.5	42.1	42.1	10.5	41.1	41.1	10.5	33.9	33.9	10.5	12.9	12.9
Total Split (s)	25.5	40.1	40.1	25.5	40.1	40.1	20.5	30.9	30.9	30.5	30.9	30.9
Total Split (%)	20.1%	31.6%	31.6%	20.1%	31.6%	31.6%	16.1%	24.3%	24.3%	24.0%	24.3%	24.3%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.1	3.1	3.5	3.9	3.9	3.5	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.1	5.1	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other  
 Cycle Length: 127  
 Actuated Cycle Length: 89.1  
 Natural Cycle: 100  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 9/SR 530 & Division St/W Division St



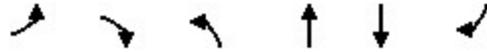
HCM 7th Signalized Intersection Summary  
6: SR 9/SR 530 & Division St/W Division St

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	210	132	86	209	164	160	396	65	77	283	159
Future Volume (veh/h)	278	210	132	86	209	164	160	396	65	77	283	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	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	1817	1817	1817	1885	1885	1885	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	299	226	142	92	225	176	172	426	70	83	304	171
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	457	509	431	393	324	275	358	508	431	261	422	358
Arrive On Green	0.17	0.28	0.28	0.06	0.17	0.17	0.10	0.27	0.27	0.06	0.23	0.23
Sat Flow, veh/h	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Grp Volume(v), veh/h	299	226	142	92	225	176	172	426	70	83	304	171
Grp Sat Flow(s),veh/h/ln	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Q Serve(g_s), s	8.8	6.8	4.9	2.8	7.5	6.9	4.8	14.4	2.3	2.4	10.2	6.4
Cycle Q Clear(g_c), s	8.8	6.8	4.9	2.8	7.5	6.9	4.8	14.4	2.3	2.4	10.2	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	457	509	431	393	324	275	358	508	431	261	422	358
V/C Ratio(X)	0.65	0.44	0.33	0.23	0.69	0.64	0.48	0.84	0.16	0.32	0.72	0.48
Avail Cap(c_a), veh/h	681	950	805	819	985	835	577	698	592	812	687	582
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	19.8	19.1	20.8	26.1	25.8	17.6	23.0	18.6	18.9	23.8	22.3
Incr Delay (d2), s/veh	1.6	0.6	0.4	0.3	2.7	2.5	1.0	6.5	0.2	0.7	2.3	1.0
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	3.0	2.5	1.7	1.2	3.5	2.6	1.9	6.7	0.8	0.9	4.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.6	20.4	19.6	21.1	28.7	28.3	18.6	29.5	18.8	19.6	26.1	23.3
LnGrp LOS	B	C	B	C	C	C	B	C	B	B	C	C
Approach Vol, veh/h	667			493			668			558		
Approach Delay, s/veh	19.4			27.1			25.6			24.3		
Approach LOS	B			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	23.8	12.3	21.3	16.8	16.6	9.4	24.1				
Change Period (Y+Rc), s	5.5	5.1	5.5	5.9	5.5	5.1	5.5	5.9				
Max Green Setting (Gmax), s	20.0	35.0	15.0	25.0	20.0	35.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	4.8	8.8	6.8	12.2	10.8	9.5	4.4	16.4				
Green Ext Time (p_c), s	0.2	1.5	0.3	1.8	0.6	2.0	0.2	1.8				

Intersection Summary												
HCM 7th Control Delay, s/veh			23.9									
HCM 7th LOS			C									

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	194	220	382	304	46
Future Volume (vph)	88	194	220	382	304	46
Satd. Flow (prot)	1736	1553	1787	1881	1777	0
Flt Permitted	0.950		0.544			
Satd. Flow (perm)	1731	1516	1023	1881	1777	0
Satd. Flow (RTOR)		202			20	
Confl. Peds. (#/hr)	2	3				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	5%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	202	229	398	365	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	7	7	2			
Detector Phase	7	7	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	9.0	9.5	9.5	31.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	3.5	3.5	4.0	4.0	4.0	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	
Act Effct Green (s)	6.3	6.3	16.8	16.8	16.8	
Actuated g/C Ratio	0.22	0.22	0.59	0.59	0.59	
v/c Ratio	0.24	0.41	0.38	0.36	0.35	
Control Delay (s/veh)	11.7	5.2	7.4	5.9	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	11.7	5.2	7.4	5.9	5.6	
LOS	B	A	A	A	A	
Approach Delay (s/veh)	7.2			6.4	5.6	
Approach LOS	A			A	A	

**Intersection Summary**

Cycle Length: 45  
 Actuated Cycle Length: 28.6  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.41  
 Intersection Signal Delay (s/veh): 6.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 46.7%  
 ICU Level of Service A  
 Analysis Period (min) 15

**Splits and Phases: 7: 67th Ave NE & 211th PI NE**



Lanes, Volumes, Timings  
8: 67th Ave NE & 204th St NE

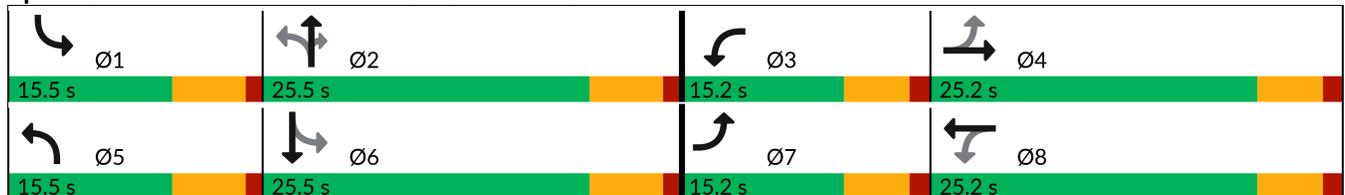
10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	179	41	244	192	109	65	365	214	127	269	100
Future Volume (vph)	133	179	41	244	192	109	65	365	214	127	269	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	195		0	285		150	205		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		624			467			447			346	
Travel Time (s)		12.2			9.1			8.7			6.7	
Confl. Peds. (#/hr)			1	1			2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	10.2	38.2		10.2	34.2		10.5	35.5	35.5	10.5	28.5	
Total Split (s)	15.2	25.2		15.2	25.2		15.5	25.5	25.5	15.5	25.5	
Total Split (%)	18.7%	31.0%		18.7%	31.0%		19.0%	31.3%	31.3%	19.0%	31.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2		5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Min	Min	None	Min	

Intersection Summary

Area Type: Other  
 Cycle Length: 81.4  
 Actuated Cycle Length: 77.5  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 67th Ave NE & 204th St NE



HCM 7th Signalized Intersection Summary

8: 67th Ave NE & 204th St NE

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	179	41	244	192	109	65	365	214	127	269	100
Future Volume (veh/h)	133	179	41	244	192	109	65	365	214	127	269	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
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	1885	1885	1885	1811	1811	1811
Adj Flow Rate, veh/h	139	186	43	254	200	114	68	380	223	132	280	104
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	6	6	6
Cap, veh/h	338	254	59	434	256	146	295	491	411	312	358	133
Arrive On Green	0.09	0.17	0.17	0.14	0.23	0.23	0.06	0.26	0.26	0.08	0.29	0.29
Sat Flow, veh/h	1781	1469	340	1781	1117	637	1795	1885	1579	1725	1255	466
Grp Volume(v), veh/h	139	0	229	254	0	314	68	380	223	132	0	384
Grp Sat Flow(s),veh/h/ln	1781	0	1808	1781	0	1754	1795	1885	1579	1725	0	1721
Q Serve(g_s), s	3.9	0.0	7.5	7.1	0.0	10.5	1.7	11.7	7.6	3.4	0.0	12.9
Cycle Q Clear(g_c), s	3.9	0.0	7.5	7.1	0.0	10.5	1.7	11.7	7.6	3.4	0.0	12.9
Prop In Lane	1.00		0.19	1.00		0.36	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	338	0	313	434	0	402	295	491	411	312	0	491
V/C Ratio(X)	0.41	0.00	0.73	0.59	0.00	0.78	0.23	0.77	0.54	0.42	0.00	0.78
Avail Cap(c_a), veh/h	464	0	577	460	0	560	482	601	504	448	0	549
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	24.5	17.4	0.0	22.7	16.3	21.5	20.0	16.1	0.0	20.6
Incr Delay (d2), s/veh	1.1	0.0	4.6	2.2	0.0	5.9	0.6	5.8	1.6	1.3	0.0	7.1
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	1.6	0.0	3.4	2.8	0.0	4.6	0.7	5.4	2.7	1.3	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.1	0.0	29.2	19.6	0.0	28.6	16.9	27.3	21.5	17.4	0.0	27.7
LnGrp LOS	C		C	B		C	B	C	C	B		C
Approach Vol, veh/h	368			568			671			516		
Approach Delay, s/veh	25.8			24.6			24.3			25.1		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	21.8	14.3	16.1	9.0	23.4	10.8	19.6				
Change Period (Y+Rc), s	5.5	5.5	5.2	5.2	5.5	5.5	5.2	5.2				
Max Green Setting (Gmax), s	10.0	20.0	10.0	20.0	10.0	20.0	10.0	20.0				
Max Q Clear Time (g_c+I1), s	5.4	13.7	9.1	9.5	3.7	14.9	5.9	12.5				
Green Ext Time (p_c), s	0.2	2.2	0.1	1.2	0.1	1.3	0.2	1.4				

Intersection Summary

HCM 7th Control Delay, s/veh	24.8
HCM 7th LOS	C

Notes

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

Lanes, Volumes, Timings  
9: SR 9 & 204th St NE

10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	351	116	178	294	149	72	397	174	76	306	154
Future Volume (vph)	134	351	116	178	294	149	72	397	174	76	306	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		200	185		0	165		0	180		400
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		546			349			462			641	
Travel Time (s)		10.6			6.8			7.0			9.7	
Confl. Peds. (#/hr)	1		6	6		1	3					3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	10.5	37.1	37.1	10.5	38.9	38.9	10.5	41.7		10.5	42.7	42.7
Total Split (s)	40.5	55.1	55.1	35.5	50.9	50.9	35.5	81.7		30.5	66.7	66.7
Total Split (%)	19.9%	27.1%	27.1%	17.4%	25.0%	25.0%	17.4%	40.1%		15.0%	32.8%	32.8%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.9	3.9	3.5	4.7		3.5	4.7	4.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.9	5.9	5.5	6.7		5.5	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes							
Recall Mode	None	Min		None	Min	Min						

Intersection Summary

Area Type: Other

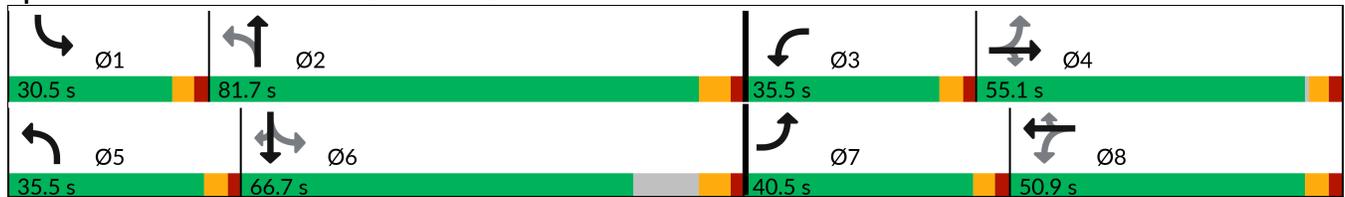
Cycle Length: 203.6

Actuated Cycle Length: 141.4

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Splits and Phases: 9: SR 9 & 204th St NE



HCM 7th Signalized Intersection Summary  
 9: SR 9 & 204th St NE

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	351	116	178	294	149	72	397	174	76	306	154
Future Volume (veh/h)	134	351	116	178	294	149	72	397	174	76	306	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00	1.00	0.99	1.00	1.00	0.99	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	1885	1885	1885	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	138	362	120	184	303	154	74	409	179	78	315	159
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	3	3	3	2	2	2
Cap, veh/h	324	458	384	303	495	414	385	473	207	212	725	612
Arrive On Green	0.08	0.24	0.24	0.10	0.26	0.26	0.04	0.39	0.39	0.04	0.39	0.39
Sat Flow, veh/h	1795	1885	1578	1781	1870	1567	1767	1223	535	1781	1870	1579
Grp Volume(v), veh/h	138	362	120	184	303	154	74	0	588	78	315	159
Grp Sat Flow(s),veh/h/ln	1795	1885	1578	1781	1870	1567	1767	0	1758	1781	1870	1579
Q Serve(g_s), s	5.9	18.7	6.5	7.9	14.8	8.3	2.6	0.0	32.0	2.7	12.9	7.1
Cycle Q Clear(g_c), s	5.9	18.7	6.5	7.9	14.8	8.3	2.6	0.0	32.0	2.7	12.9	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.30	1.00		1.00
Lane Grp Cap(c), veh/h	324	458	384	303	495	414	385	0	681	212	725	612
V/C Ratio(X)	0.43	0.79	0.31	0.61	0.61	0.37	0.19	0.00	0.86	0.37	0.43	0.26
Avail Cap(c_a), veh/h	790	909	761	642	811	680	821	0	1271	564	1082	913
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	36.8	32.2	27.1	33.5	31.1	18.5	0.0	29.3	23.0	23.4	21.6
Incr Delay (d2), s/veh	0.9	3.7	0.6	2.0	1.5	0.7	0.2	0.0	4.8	1.1	0.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.9	2.5	3.4	6.8	3.2	1.0	0.0	13.4	1.1	5.4	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	27.7	40.5	32.7	29.1	35.0	31.8	18.7	0.0	34.1	24.1	24.0	21.9
LnGrp LOS	C	D	C	C	C	C	B		C	C	C	C
Approach Vol, veh/h	620			641			662			552		
Approach Delay, s/veh	36.1			32.5			32.3			23.4		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	46.9	15.8	31.1	9.9	46.9	13.6	33.3				
Change Period (Y+Rc), s	5.5	6.7	5.5	* 5.9	5.5	6.7	5.5	5.9				
Max Green Setting (Gmax), s	25.0	75.0	30.0	* 50	30.0	60.0	35.0	45.0				
Max Q Clear Time (g_c+I1), s	4.7	34.0	9.9	20.7	4.6	14.9	7.9	16.8				
Green Ext Time (p_c), s	0.1	6.2	0.5	3.3	0.2	3.7	0.4	2.9				

Intersection Summary												
HCM 7th Control Delay, s/veh			31.3									
HCM 7th LOS			C									

Notes  
 \* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

2027 No Action

Lanes, Volumes, Timings

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

10/16/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↕	
Traffic Volume (vph)	0	139	86	357	262	0	0	0	0	393	2	49
Future Volume (vph)	0	139	86	357	262	0	0	0	0	393	2	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		5%			5%			5%			0%	
Storage Length (ft)	0		100	230		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25				25
Link Distance (ft)		477			666			304				251
Travel Time (s)		9.3			13.0			8.3				6.8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	15%	15%	7%	7%	7%	0%	0%	0%	11%	11%	11%
Shared Lane Traffic (%)												
Turn Type		NA	Perm	pm+pt	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								
Detector Phase		2	2	1	6					4	4	
Switch Phase												
Minimum Initial (s)		7.0	7.0	5.0	7.0					7.0	7.0	
Minimum Split (s)		31.8	31.8	11.0	32.0					38.8	38.8	
Total Split (s)		25.0	25.0	20.0	45.0					55.0	55.0	
Total Split (%)		25.0%	25.0%	20.0%	45.0%					55.0%	55.0%	
Yellow Time (s)		3.8	3.8	4.0	4.0					3.8	3.8	
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0					0.0	0.0	
Total Lost Time (s)		5.8	5.8	6.0	6.0					5.8	5.8	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Min	C-Min	None	C-Min					None	None	

Intersection Summary

Area Type: Other

Cycle Length: 100

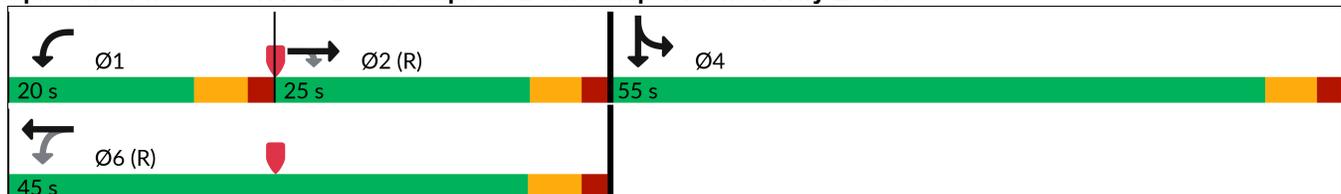
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530



# HCM 7th Signalized Intersection Summary

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

10/16/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↕	
Traffic Volume (veh/h)	0	139	86	357	262	0	0	0	0	393	2	49
Future Volume (veh/h)	0	139	86	357	262	0	0	0	0	393	2	49
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1530	1530	1649	1649	0				1737	1737	1737
Adj Flow Rate, veh/h	0	145	90	372	273	0				409	2	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	15	15	7	7	0				11	11	11
Cap, veh/h	0	533	452	575	904	0				482	2	60
Arrive On Green	0.00	0.35	0.35	0.23	0.92	0.00				0.33	0.33	0.33
Sat Flow, veh/h	0	1530	1297	1570	1649	0				1445	7	180
Grp Volume(v), veh/h	0	145	90	372	273	0				462	0	0
Grp Sat Flow(s),veh/h/ln	0	1530	1297	1570	1649	0				1632	0	0
Q Serve(g_s), s	0.0	6.8	4.9	14.0	1.9	0.0				26.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.8	4.9	14.0	1.9	0.0				26.3	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.89		0.11
Lane Grp Cap(c), veh/h	0	533	452	575	904	0				545	0	0
V/C Ratio(X)	0.00	0.27	0.20	0.65	0.30	0.00				0.85	0.00	0.00
Avail Cap(c_a), veh/h	0	533	452	575	904	0				803	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.69	0.69	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	23.5	22.8	16.2	2.0	0.0				30.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	1.0	1.8	0.6	0.0				7.7	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
%ile BackOfQ(50%),veh/ln	0.0	2.6	1.6	4.7	0.6	0.0				11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	24.7	23.8	17.9	2.6	0.0				38.7	0.0	0.0
LnGrp LOS		C	C	B	A					D		
Approach Vol, veh/h		235			645						462	
Approach Delay, s/veh		24.4			11.4						38.7	
Approach LOS		C			B						D	
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.0	40.8		39.2		60.8						
Change Period (Y+Rc), s	6.0	* 6		5.8		6.0						
Max Green Setting (Gmax), s	14.0	* 19		49.2		39.0						
Max Q Clear Time (g_c+I1), s	16.0	8.8		28.3		3.9						
Green Ext Time (p_c), s	0.0	1.0		5.1		2.4						

## Intersection Summary

HCM 7th Control Delay, s/veh 23.1  
 HCM 7th LOS C

## Notes

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

\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	500	0	0	513	513	104	1	551	0	0	0
Future Volume (vph)	32	500	0	0	513	513	104	1	551	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			4%			0%			0%	
Storage Length (ft)	230		0	0		170	100		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		666			428			363			210	
Travel Time (s)		13.0			8.3			9.9			5.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	9%	9%	5%	5%	5%	7%	7%	7%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2					6			8			
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	7.0			7.0	7.0	7.0	7.0	7.0			
Minimum Split (s)	11.0	31.0			32.8	32.8	36.8	36.8	36.8			
Total Split (s)	12.0	57.0			45.0	45.0	43.0	43.0	43.0			
Total Split (%)	12.0%	57.0%			45.0%	45.0%	43.0%	43.0%	43.0%			
Yellow Time (s)	4.0	4.0			3.8	3.8	3.8	3.8	3.8			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0			0.0	0.0		
Total Lost Time (s)	6.0	6.0			5.8	5.8			5.8	5.8		
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None			

Intersection Summary

Area Type: Other

Cycle Length: 100

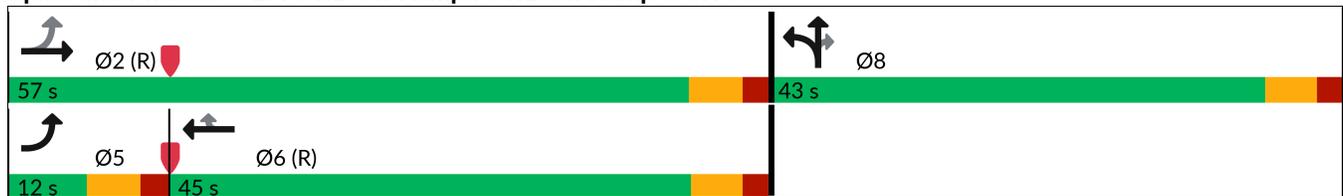
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530



HCM 7th Signalized Intersection Summary  
 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	500	0	0	513	513	104	1	551	0	0	0
Future Volume (veh/h)	32	500	0	0	513	513	104	1	551	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
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	1714	1714	0	0	1732	1732	1796	1796	1796			
Adj Flow Rate, veh/h	36	556	0	0	570	570	116	1	612			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	9	9	0	0	5	5	7	7	7			
Cap, veh/h	184	874	0	0	725	614	631	5	566			
Arrive On Green	0.06	1.00	0.00	0.00	0.42	0.42	0.37	0.37	0.37			
Sat Flow, veh/h	1632	1714	0	0	1732	1468	1697	15	1522			
Grp Volume(v), veh/h	36	556	0	0	570	570	117	0	612			
Grp Sat Flow(s),veh/h/ln	1632	1714	0	0	1732	1468	1711	0	1522			
Q Serve(g_s), s	1.2	0.0	0.0	0.0	28.5	36.9	4.6	0.0	37.2			
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.0	28.5	36.9	4.6	0.0	37.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	184	874	0	0	725	614	637	0	566			
V/C Ratio(X)	0.20	0.64	0.00	0.00	0.79	0.93	0.18	0.00	1.08			
Avail Cap(c_a), veh/h	230	874	0	0	725	614	637	0	566			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.95	0.95	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	18.8	0.0	0.0	0.0	25.2	27.7	21.2	0.0	31.4			
Incr Delay (d2), s/veh	0.5	3.4	0.0	0.0	8.4	22.4	0.2	0.0	61.5			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.8	0.0	0.0	12.8	16.0	1.9	0.0	23.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.3	3.4	0.0	0.0	33.6	50.1	21.4	0.0	92.9			
LnGrp LOS	B	A			C	D	C		F			
Approach Vol, veh/h		592			1140			729				
Approach Delay, s/veh		4.3			41.9			81.4				
Approach LOS		A			D			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		57.0			9.2	47.8		43.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.8				
Max Green Setting (Gmax), s		51.0			6.0	* 39		37.2				
Max Q Clear Time (g_c+I1), s		2.0			3.2	38.9		39.2				
Green Ext Time (p_c), s		6.2			0.0	0.2		0.0				

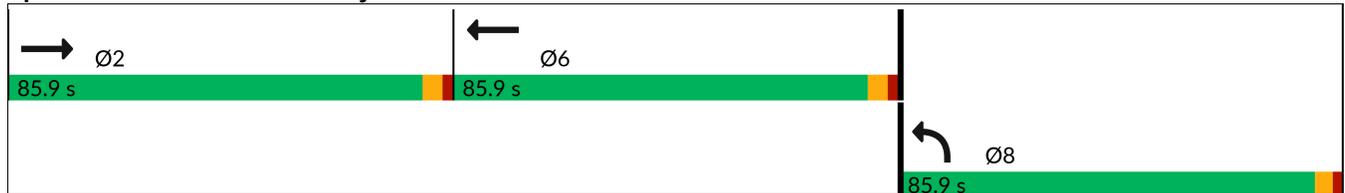
Intersection Summary		
HCM 7th Control Delay, s/veh		44.5
HCM 7th LOS		D

Notes  
 \* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↘	↗
Traffic Volume (vph)	782	197	0	705	218	6
Future Volume (vph)	782	197	0	705	218	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	315			242	242	
Travel Time (s)	6.1			4.7	4.7	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	13%	13%
Shared Lane Traffic (%)						
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	7.0			7.0	5.0	
Minimum Split (s)	40.9			23.9	28.5	
Total Split (s)	85.9			85.9	85.9	
Total Split (%)	33.3%			33.3%	33.3%	
Yellow Time (s)	3.9			3.9	3.5	
All-Red Time (s)	2.0			2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.9			5.9	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min			Min	None	

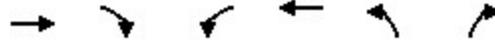
Intersection Summary	
Area Type:	Other
Cycle Length:	257.7
Actuated Cycle Length:	216.8
Natural Cycle:	145
Control Type:	Actuated-Uncoordinated

**Splits and Phases: 3: Smokey Point Blvd & SR 530**



HCM 7th Signalized Intersection Summary  
 3: Smokey Point Blvd & SR 530

10/16/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (veh/h)	782	197	0	705	218	6
Future Volume (veh/h)	782	197	0	705	218	6
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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	1856	0	1856	1707	1707
Adj Flow Rate, veh/h	859	216	0	775	240	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	0	3	13	13
Cap, veh/h	983	247	0	1274	290	8
Arrive On Green	0.69	0.69	0.00	0.69	0.19	0.19
Sat Flow, veh/h	1431	360	0	1856	1568	46
Grp Volume(v), veh/h	0	1075	0	775	248	0
Grp Sat Flow(s),veh/h/ln	0	1791	0	1856	1621	0
Q Serve(g_s), s	0.0	41.9	0.0	20.0	13.1	0.0
Cycle Q Clear(g_c), s	0.0	41.9	0.0	20.0	13.1	0.0
Prop In Lane		0.20	0.00		0.97	0.03
Lane Grp Cap(c), veh/h	0	1230	0	1274	300	0
V/C Ratio(X)	0.00	0.87	0.00	0.61	0.83	0.00
Avail Cap(c_a), veh/h	0	1610	0	1668	1464	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.9	0.0	7.5	34.9	0.0
Incr Delay (d2), s/veh	0.0	5.0	0.0	0.7	8.0	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	14.2	0.0	6.4	5.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	16.0	0.0	8.2	42.9	0.0
LnGrp LOS		B		A	D	
Approach Vol, veh/h	1075			775	248	
Approach Delay, s/veh	16.0			8.2	42.9	
Approach LOS	B			A	D	
Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		67.0			67.0	22.0
Change Period (Y+Rc), s		5.9			5.9	5.5
Max Green Setting (Gmax), s		80.0			80.0	80.4
Max Q Clear Time (g_c+I1), s		43.9			22.0	15.1
Green Ext Time (p_c), s		17.2			10.4	1.3
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			16.3			
HCM 7th LOS			B			

# LANE LEVEL OF SERVICE

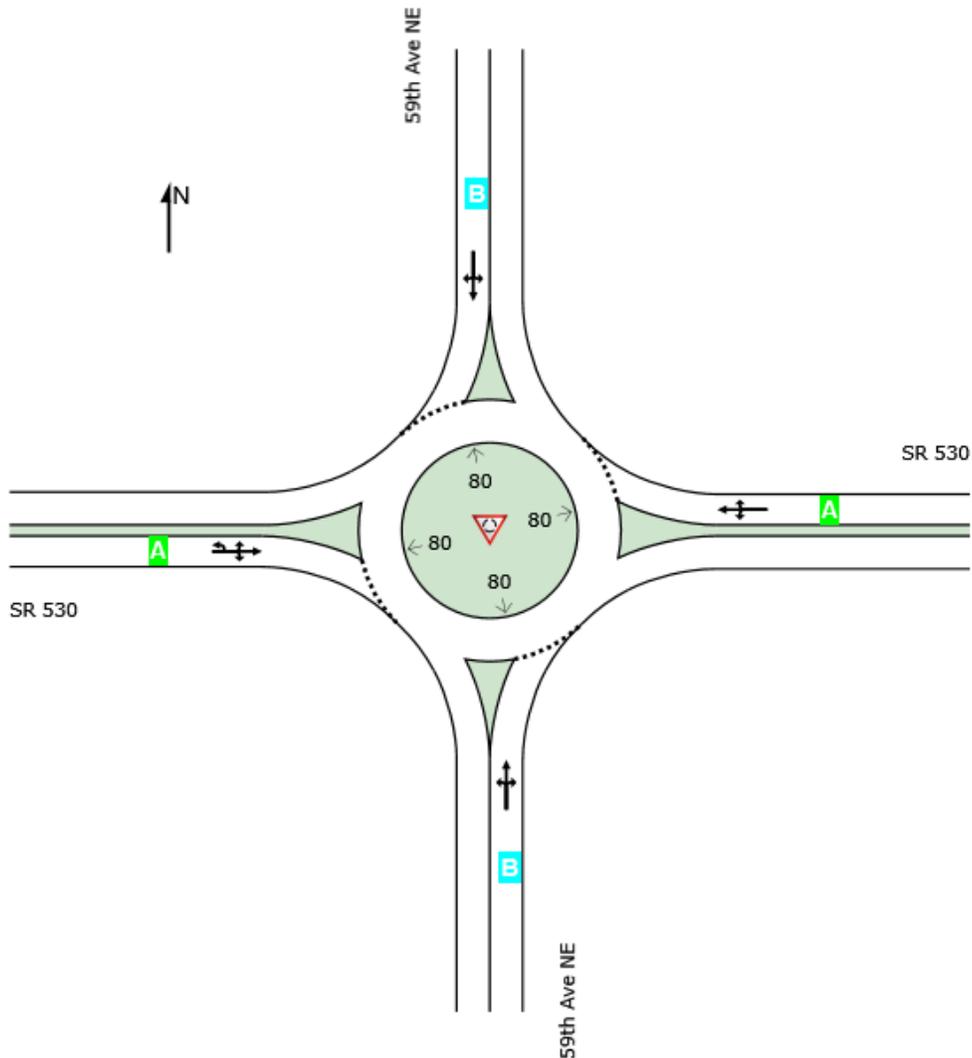
## Lane Level of Service

 Site: 4 [59th Ave NE / SR 530 (Site Folder: 2027 No Action - Weekday PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Kraetz Rd / SR 530  
 Site Category: 2027 No Action - Weekday PM Peak Hour  
 Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	B	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 4 [59th Ave NE / SR 530 (Site Folder: 2027 No Action - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

Kraetz Rd / SR 530  
 Site Category: 2027 No Action - Weekday PM Peak Hour  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
			veh/h	%	veh/h	%	v/c	sec							mph
South: 59th Ave NE															
3	L2	All MCs	14	5.0	14	5.0	0.045	16.1	LOS B	0.2	6.3	0.75	0.76	0.75	30.9
8	T1	All MCs	1	5.0	1	5.0	0.045	10.8	LOS B	0.2	6.3	0.75	0.76	0.75	31.6
18	R2	All MCs	11	5.0	11	5.0	0.045	10.8	LOS B	0.2	6.3	0.75	0.76	0.75	31.3
Approach			25	5.0	25	5.0	0.045	13.7	LOS B	0.2	6.3	0.75	0.76	0.75	31.1
East: SR 530															
1	L2	All MCs	12	2.0	12	2.0	0.663	9.9	LOS A	7.5	191.2	0.31	0.39	0.31	34.6
6	T1	All MCs	836	2.0	836	2.0	0.663	4.6	LOS A	7.5	191.2	0.31	0.39	0.31	35.3
16	R2	All MCs	2	2.0	2	2.0	0.663	4.5	LOS A	7.5	191.2	0.31	0.39	0.31	35.0
Approach			849	2.0	849	2.0	0.663	4.7	LOS A	7.5	191.2	0.31	0.39	0.31	35.3
North: 59th Ave NE															
7	L2	All MCs	2	8.0	2	8.0	0.103	15.6	LOS B	0.6	14.7	0.74	0.74	0.74	32.1
4	T1	All MCs	1	8.0	1	8.0	0.103	10.3	LOS B	0.6	14.7	0.74	0.74	0.74	32.9
14	R2	All MCs	56	8.0	56	8.0	0.103	10.3	LOS B	0.6	14.7	0.74	0.74	0.74	32.5
Approach			59	8.0	59	8.0	0.103	10.5	LOS B	0.6	14.7	0.74	0.74	0.74	32.5
West: SR 530															
5u	U	All MCs	3	3.0	3	3.0	0.739	11.9	LOS B	10.5	269.6	0.25	0.38	0.25	34.8
5	L2	All MCs	15	3.0	15	3.0	0.739	9.7	LOS A	10.5	269.6	0.25	0.38	0.25	34.8
2	T1	All MCs	914	3.0	914	3.0	0.739	4.4	LOS A	10.5	269.6	0.25	0.38	0.25	35.5
12	R2	All MCs	25	3.0	25	3.0	0.739	4.3	LOS A	10.5	269.6	0.25	0.38	0.25	35.2
Approach			957	3.0	957	3.0	0.739	4.5	LOS A	10.5	269.6	0.25	0.38	0.25	35.5
All Vehicles			1891	2.7	1891	2.7	0.739	4.9	LOS A	10.5	269.6	0.30	0.40	0.30	35.3

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

# LANE LEVEL OF SERVICE

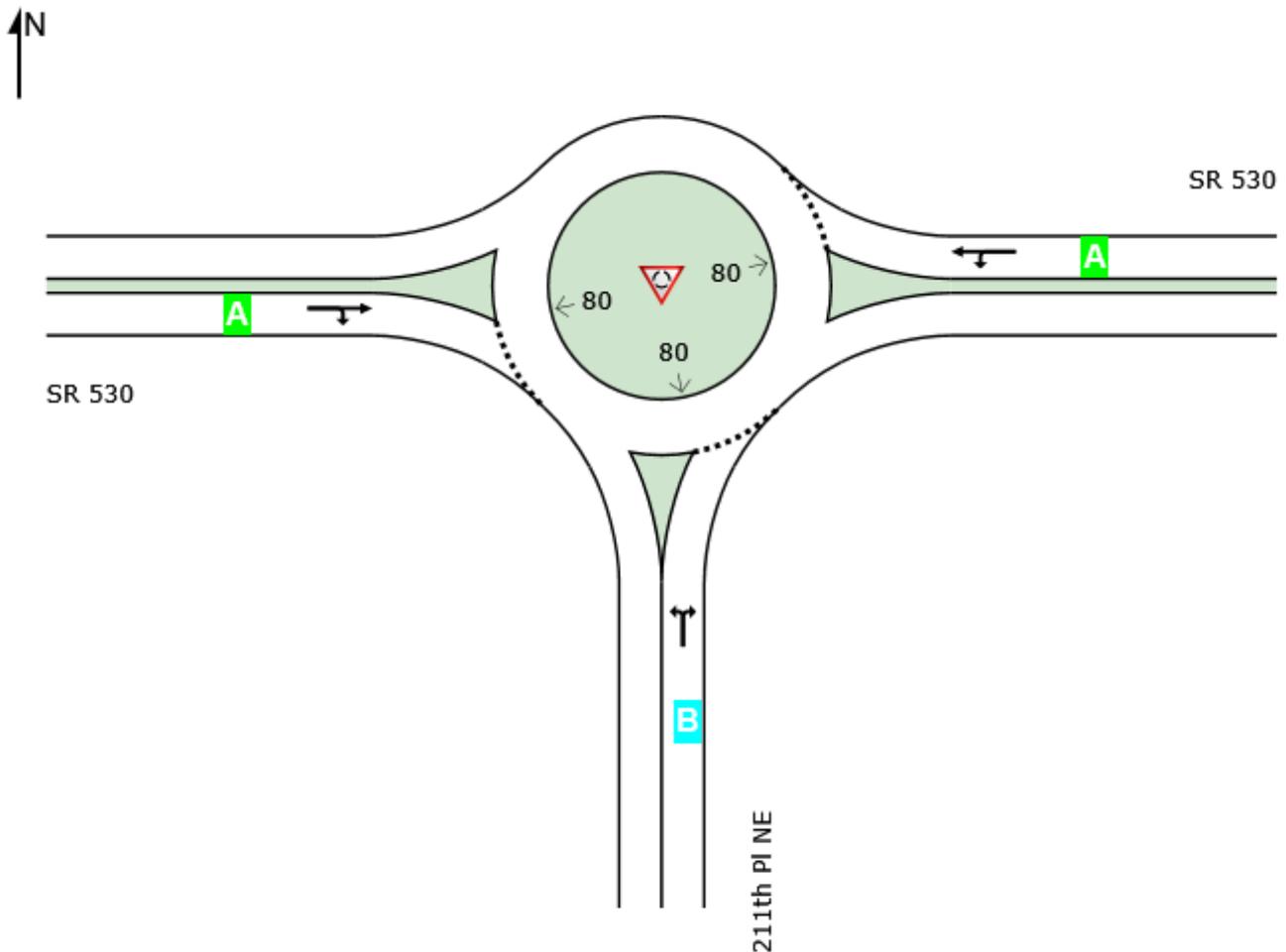
## Lane Level of Service

 Site: 5 [211th PI NE / SR 530 (Site Folder: 2027 No Action - Weekday PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

211th PI NE / SR 530  
 Site Category: 2027 No Action - Weekday PM Peak Hour  
 Roundabout

	Approaches			Intersection
	South	East	West	
LOS	B	A	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 5 [211th PI NE / SR 530 (Site Folder: 2027 No Action - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

211th PI NE / SR 530  
 Site Category: 2027 No Action - Weekday PM Peak Hour  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]	ft			mph
South: 211th PI NE															
3	L2	All MCs	255	1.0	255	1.0	0.322	13.6	LOS B	1.9	47.3	0.69	0.75	0.69	31.3
18	R2	All MCs	8	1.0	8	1.0	0.322	8.3	LOS A	1.9	47.3	0.69	0.75	0.69	31.6
Approach			263	1.0	263	1.0	0.322	13.4	LOS B	1.9	47.3	0.69	0.75	0.69	31.3
East: SR 530															
1	L2	All MCs	8	2.0	8	2.0	0.520	11.2	LOS B	3.9	98.7	0.61	0.56	0.61	33.7
6	T1	All MCs	539	2.0	539	2.0	0.520	6.0	LOS A	3.9	98.7	0.61	0.56	0.61	34.4
Approach			547	2.0	547	2.0	0.520	6.0	LOS A	3.9	98.7	0.61	0.56	0.61	34.4
West: SR 530															
2	T1	All MCs	662	2.0	662	2.0	0.720	4.2	LOS A	10.3	261.8	0.17	0.40	0.17	35.9
12	R2	All MCs	285	2.0	285	2.0	0.720	4.2	LOS A	10.3	261.8	0.17	0.40	0.17	35.5
Approach			946	2.0	946	2.0	0.720	4.2	LOS A	10.3	261.8	0.17	0.40	0.17	35.8
All Vehicles			1757	1.9	1757	1.9	0.720	6.2	LOS A	10.3	261.8	0.39	0.50	0.39	34.6

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Lanes, Volumes, Timings  
6: SR 9/SR 530 & Division St/W Division St

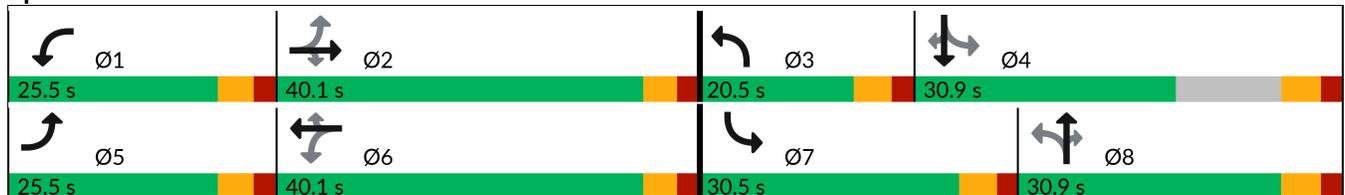
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	223	140	91	222	174	170	420	69	82	300	169
Future Volume (vph)	295	223	140	91	222	174	170	420	69	82	300	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%			0%	
Storage Length (ft)	320		60	165		0	290		160	140		65
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			25			35			40	
Link Distance (ft)		510			418			679			523	
Travel Time (s)		6.3			11.4			13.2			8.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	4%	4%	4%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm									
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.5	42.1	42.1	10.5	41.1	41.1	10.5	33.9	33.9	10.5	12.9	12.9
Total Split (s)	25.5	40.1	40.1	25.5	40.1	40.1	20.5	30.9	30.9	30.5	30.9	30.9
Total Split (%)	20.1%	31.6%	31.6%	20.1%	31.6%	31.6%	16.1%	24.3%	24.3%	24.0%	24.3%	24.3%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.1	3.1	3.5	3.9	3.9	3.5	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.1	5.1	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other  
 Cycle Length: 127  
 Actuated Cycle Length: 91  
 Natural Cycle: 100  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 9/SR 530 & Division St/W Division St



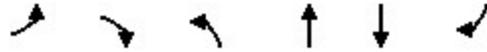
HCM 7th Signalized Intersection Summary  
 6: SR 9/SR 530 & Division St/W Division St

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	223	140	91	222	174	170	420	69	82	300	169
Future Volume (veh/h)	295	223	140	91	222	174	170	420	69	82	300	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	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	1817	1817	1817	1885	1885	1885	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	317	240	151	98	239	187	183	452	74	88	323	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	458	524	444	393	335	284	351	525	445	247	430	365
Arrive On Green	0.17	0.29	0.29	0.06	0.18	0.18	0.10	0.28	0.28	0.06	0.23	0.23
Sat Flow, veh/h	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Grp Volume(v), veh/h	317	240	151	98	239	187	183	452	74	88	323	182
Grp Sat Flow(s),veh/h/ln	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Q Serve(g_s), s	9.9	7.7	5.5	3.1	8.5	7.8	5.4	16.3	2.5	2.7	11.6	7.2
Cycle Q Clear(g_c), s	9.9	7.7	5.5	3.1	8.5	7.8	5.4	16.3	2.5	2.7	11.6	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	458	524	444	393	335	284	351	525	445	247	430	365
V/C Ratio(X)	0.69	0.46	0.34	0.25	0.71	0.66	0.52	0.86	0.17	0.36	0.75	0.50
Avail Cap(c_a), veh/h	642	894	758	784	928	786	540	657	557	762	647	548
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	20.7	20.0	21.7	27.6	27.3	18.5	24.3	19.3	20.1	25.3	23.6
Incr Delay (d2), s/veh	1.9	0.6	0.5	0.3	2.8	2.6	1.2	9.4	0.2	0.9	2.7	1.1
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	3.4	2.9	1.9	1.3	4.0	3.0	2.1	8.0	0.9	1.0	4.9	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	21.4	20.4	22.0	30.4	29.9	19.7	33.7	19.5	21.0	28.0	24.7
LnGrp LOS	B	C	C	C	C	C	B	C	B	C	C	C
Approach Vol, veh/h	708			524			709			593		
Approach Delay, s/veh	20.4			28.6			28.6			25.9		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	25.6	13.0	22.5	17.9	17.7	9.6	25.9				
Change Period (Y+Rc), s	5.5	5.1	5.5	5.9	5.5	5.1	5.5	5.9				
Max Green Setting (Gmax), s	20.0	35.0	15.0	25.0	20.0	35.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	5.1	9.7	7.4	13.6	11.9	10.5	4.7	18.3				
Green Ext Time (p_c), s	0.2	1.6	0.3	1.9	0.6	2.1	0.2	1.7				

Intersection Summary												
HCM 7th Control Delay, s/veh			25.7									
HCM 7th LOS			C									

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	93	206	233	405	323	49
Future Volume (vph)	93	206	233	405	323	49
Satd. Flow (prot)	1736	1553	1787	1881	1777	0
Flt Permitted	0.950		0.533			
Satd. Flow (perm)	1731	1516	1003	1881	1777	0
Satd. Flow (RTOR)		215			20	
Confl. Peds. (#/hr)	2	3				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	5%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	215	243	422	387	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	7	7	2			
Detector Phase	7	7	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	9.0	9.5	9.5	31.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	3.5	3.5	4.0	4.0	4.0	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	
Act Effct Green (s)	6.4	6.4	18.2	18.2	18.2	
Actuated g/C Ratio	0.21	0.21	0.60	0.60	0.60	
v/c Ratio	0.26	0.44	0.40	0.37	0.36	
Control Delay (s/veh)	12.5	5.5	7.6	5.9	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	12.5	5.5	7.6	5.9	5.6	
LOS	B	A	A	A	A	
Approach Delay (s/veh)	7.7			6.5	5.6	
Approach LOS	A			A	A	

**Intersection Summary**

Cycle Length: 45	
Actuated Cycle Length: 30.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay (s/veh): 6.5	Intersection LOS: A
Intersection Capacity Utilization 48.9%	ICU Level of Service A
Analysis Period (min) 15	

**Splits and Phases: 7: 67th Ave NE & 211th PI NE**



Lanes, Volumes, Timings  
8: 67th Ave NE & 204th St NE

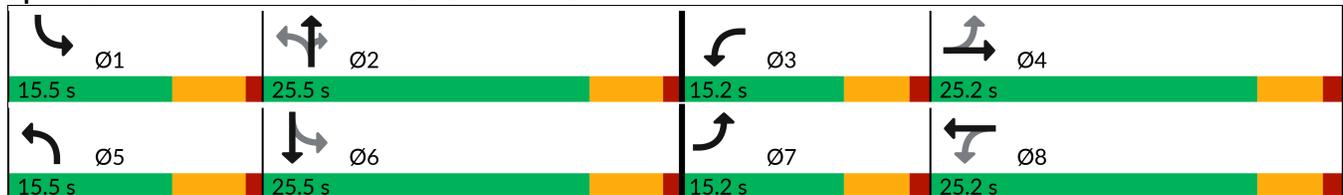
10/16/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	190	44	259	204	116	69	387	227	135	285	106
Future Volume (vph)	141	190	44	259	204	116	69	387	227	135	285	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	195		0	285		150	205		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		624			467			447			346	
Travel Time (s)		12.2			9.1			8.7			6.7	
Confl. Peds. (#/hr)			1	1			2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	10.2	38.2		10.2	34.2		10.5	35.5	35.5	10.5	28.5	
Total Split (s)	15.2	25.2		15.2	25.2		15.5	25.5	25.5	15.5	25.5	
Total Split (%)	18.7%	31.0%		18.7%	31.0%		19.0%	31.3%	31.3%	19.0%	31.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2		5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Min	Min	None	Min	

Intersection Summary

Area Type: Other  
 Cycle Length: 81.4  
 Actuated Cycle Length: 79.1  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 67th Ave NE & 204th St NE



HCM 7th Signalized Intersection Summary

8: 67th Ave NE & 204th St NE

10/16/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	190	44	259	204	116	69	387	227	135	285	106
Future Volume (veh/h)	141	190	44	259	204	116	69	387	227	135	285	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
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	1885	1885	1885	1811	1811	1811
Adj Flow Rate, veh/h	147	198	46	270	212	121	72	403	236	141	297	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	6	6	6
Cap, veh/h	332	262	61	431	263	150	281	498	417	303	368	136
Arrive On Green	0.09	0.18	0.18	0.15	0.24	0.24	0.06	0.26	0.26	0.08	0.29	0.29
Sat Flow, veh/h	1781	1467	341	1781	1117	637	1795	1885	1579	1725	1256	465
Grp Volume(v), veh/h	147	0	244	270	0	333	72	403	236	141	0	407
Grp Sat Flow(s),veh/h/ln	1781	0	1808	1781	0	1754	1795	1885	1579	1725	0	1722
Q Serve(g_s), s	4.3	0.0	8.4	7.8	0.0	11.8	1.9	13.2	8.5	3.8	0.0	14.4
Cycle Q Clear(g_c), s	4.3	0.0	8.4	7.8	0.0	11.8	1.9	13.2	8.5	3.8	0.0	14.4
Prop In Lane	1.00		0.19	1.00		0.36	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	332	0	323	431	0	413	281	498	417	303	0	504
V/C Ratio(X)	0.44	0.00	0.75	0.63	0.00	0.81	0.26	0.81	0.57	0.47	0.00	0.81
Avail Cap(c_a), veh/h	438	0	548	437	0	532	454	572	479	419	0	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	25.7	18.0	0.0	23.8	17.2	22.7	21.0	16.9	0.0	21.6
Incr Delay (d2), s/veh	1.3	0.0	5.0	3.2	0.0	8.0	0.7	8.3	1.7	1.6	0.0	9.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	3.8	3.3	0.0	5.4	0.7	6.5	3.1	1.5	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.0	0.0	30.7	21.2	0.0	31.8	17.9	31.0	22.7	18.5	0.0	31.0
LnGrp LOS	C		C	C		C	B	C	C	B		C
Approach Vol, veh/h	391			603			711			548		
Approach Delay, s/veh	27.1			27.1			26.9			27.8		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	22.9	15.0	17.0	9.2	24.8	11.3	20.7				
Change Period (Y+Rc), s	5.5	5.5	5.2	5.2	5.5	5.5	5.2	5.2				
Max Green Setting (Gmax), s	10.0	20.0	10.0	20.0	10.0	20.0	10.0	20.0				
Max Q Clear Time (g_c+I1), s	5.8	15.2	9.8	10.4	3.9	16.4	6.3	13.8				
Green Ext Time (p_c), s	0.2	1.9	0.0	1.2	0.1	1.1	0.2	1.3				

Intersection Summary

HCM 7th Control Delay, s/veh	27.2
HCM 7th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	372	123	189	312	158	76	421	185	81	325	163
Future Volume (vph)	142	372	123	189	312	158	76	421	185	81	325	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		200	185		0	165		0	180		400
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		546			349			462			641	
Travel Time (s)		10.6			6.8			7.0			9.7	
Confl. Peds. (#/hr)	1		6	6		1	3					3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	10.5	37.1	37.1	10.5	38.9	38.9	10.5	41.7		10.5	42.7	42.7
Total Split (s)	40.5	55.1	55.1	35.5	50.9	50.9	35.5	81.7		30.5	66.7	66.7
Total Split (%)	19.9%	27.1%	27.1%	17.4%	25.0%	25.0%	17.4%	40.1%		15.0%	32.8%	32.8%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.9	3.9	3.5	4.7		3.5	4.7	4.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.9	5.9	5.5	6.7		5.5	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes							
Recall Mode	None	Min		None	Min	Min						

Intersection Summary

Area Type: Other

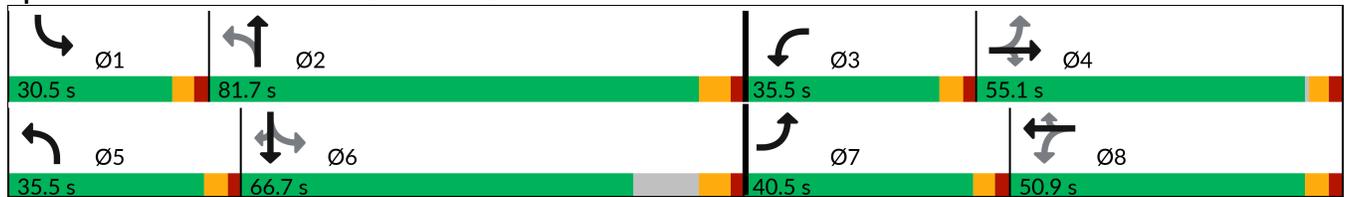
Cycle Length: 203.6

Actuated Cycle Length: 154.6

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Splits and Phases: 9: SR 9 & 204th St NE



HCM 7th Signalized Intersection Summary  
 9: SR 9 & 204th St NE

10/16/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	372	123	189	312	158	76	421	185	81	325	163
Future Volume (veh/h)	142	372	123	189	312	158	76	421	185	81	325	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1885	1885	1885	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	146	384	127	195	322	163	78	434	191	84	335	168
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	3	3	3	2	2	2
Cap, veh/h	312	465	389	291	502	421	380	493	217	199	759	641
Arrive On Green	0.08	0.25	0.25	0.10	0.27	0.27	0.04	0.40	0.40	0.04	0.41	0.41
Sat Flow, veh/h	1795	1885	1578	1781	1870	1567	1767	1220	537	1781	1870	1579
Grp Volume(v), veh/h	146	384	127	195	322	163	78	0	625	84	335	168
Grp Sat Flow(s),veh/h/ln	1795	1885	1578	1781	1870	1567	1767	0	1757	1781	1870	1579
Q Serve(g_s), s	6.9	22.2	7.6	9.2	17.5	9.8	3.0	0.0	37.9	3.2	14.9	8.1
Cycle Q Clear(g_c), s	6.9	22.2	7.6	9.2	17.5	9.8	3.0	0.0	37.9	3.2	14.9	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	312	465	389	291	502	421	380	0	710	199	759	641
V/C Ratio(X)	0.47	0.83	0.33	0.67	0.64	0.39	0.21	0.00	0.88	0.42	0.44	0.26
Avail Cap(c_a), veh/h	715	819	686	575	731	613	769	0	1146	509	975	823
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	41.0	35.5	30.2	37.2	34.4	19.6	0.0	31.7	25.4	24.7	22.7
Incr Delay (d2), s/veh	1.1	4.5	0.6	2.7	1.7	0.7	0.3	0.0	6.2	1.4	0.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.7	3.0	4.1	8.1	3.8	1.2	0.0	16.3	1.3	6.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.7	45.5	36.1	32.9	38.8	35.1	19.9	0.0	38.0	26.9	25.3	23.0
LnGrp LOS	C	D	D	C	D	D	B		D	C	C	C
Approach Vol, veh/h	657			680			703			587		
Approach Delay, s/veh	40.4			36.2			36.0			24.9		
Approach LOS	D			D			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	53.2	17.2	34.3	10.2	53.4	14.7	36.8				
Change Period (Y+Rc), s	5.5	6.7	5.5	* 5.9	5.5	6.7	5.5	5.9				
Max Green Setting (Gmax), s	25.0	75.0	30.0	* 50	30.0	60.0	35.0	45.0				
Max Q Clear Time (g_c+I1), s	5.2	39.9	11.2	24.2	5.0	16.9	8.9	19.5				
Green Ext Time (p_c), s	0.2	6.6	0.5	3.4	0.2	3.9	0.4	3.0				

Intersection Summary												
HCM 7th Control Delay, s/veh	34.7											
HCM 7th LOS	C											

Notes  
 \* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

## 2027 With Project

Lanes, Volumes, Timings

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

06/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑						↕	
Traffic Volume (vph)	0	139	86	373	262	0	0	0	0	418	2	49
Future Volume (vph)	0	139	86	373	262	0	0	0	0	418	2	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		5%			5%			5%			0%	
Storage Length (ft)	0		100	230		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25				25
Link Distance (ft)		477			666			304				251
Travel Time (s)		9.3			13.0			8.3				6.8
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	15%	15%	15%	7%	7%	7%	0%	0%	0%	11%	11%	11%
Shared Lane Traffic (%)												
Turn Type		NA	Perm	pm+pt	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases			2	6								
Detector Phase		2	2	1	6					4	4	
Switch Phase												
Minimum Initial (s)		7.0	7.0	5.0	7.0					7.0	7.0	
Minimum Split (s)		31.8	31.8	11.0	32.0					38.8	38.8	
Total Split (s)		25.0	25.0	20.0	45.0					55.0	55.0	
Total Split (%)		25.0%	25.0%	20.0%	45.0%					55.0%	55.0%	
Yellow Time (s)		3.8	3.8	4.0	4.0					3.8	3.8	
All-Red Time (s)		2.0	2.0	2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	
Total Lost Time (s)		5.8	5.8	6.0	6.0						5.8	
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Min	C-Min	None	C-Min					None	None	

Intersection Summary

Area Type: Other

Cycle Length: 100

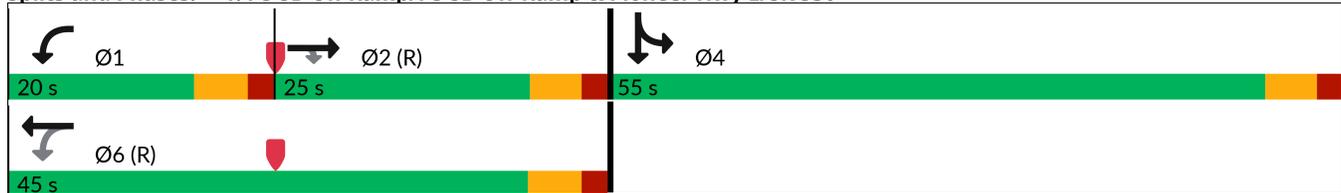
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530



# HCM 7th Signalized Intersection Summary

1: I-5 SB On-Ramp/I-5 SB Off-Ramp & Pioneer Hwy E/SR 530

06/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↗	↘					↕	
Traffic Volume (veh/h)	0	139	86	373	262	0	0	0	0	418	2	49
Future Volume (veh/h)	0	139	86	373	262	0	0	0	0	418	2	49
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
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	1530	1530	1649	1649	0				1737	1737	1737
Adj Flow Rate, veh/h	0	145	90	389	273	0				435	2	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	15	15	7	7	0				11	11	11
Cap, veh/h	0	509	431	557	878	0				509	2	60
Arrive On Green	0.00	0.33	0.33	0.23	0.89	0.00				0.35	0.35	0.35
Sat Flow, veh/h	0	1530	1297	1570	1649	0				1456	7	171
Grp Volume(v), veh/h	0	145	90	389	273	0				488	0	0
Grp Sat Flow(s),veh/h/ln	0	1530	1297	1570	1649	0				1633	0	0
Q Serve(g_s), s	0.0	7.0	5.0	14.0	2.5	0.0				27.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.0	5.0	14.0	2.5	0.0				27.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				0.89		0.10
Lane Grp Cap(c), veh/h	0	509	431	557	878	0				571	0	0
V/C Ratio(X)	0.00	0.29	0.21	0.70	0.31	0.00				0.85	0.00	0.00
Avail Cap(c_a), veh/h	0	509	431	557	878	0				804	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.62	0.62	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	24.6	23.9	18.1	2.7	0.0				30.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.1	2.4	0.6	0.0				8.3	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
%ile BackOfQ(50%),veh/ln	0.0	2.7	1.6	5.2	0.8	0.0				12.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	26.0	25.0	20.5	3.3	0.0				38.5	0.0	0.0
LnGrp LOS		C	C	C	A					D		
Approach Vol, veh/h		235			662							488
Approach Delay, s/veh		25.6			13.4							38.5
Approach LOS		C			B							D
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	20.0	39.2		40.8		59.2						
Change Period (Y+Rc), s	6.0	* 6		5.8		6.0						
Max Green Setting (Gmax), s	14.0	* 19		49.2		39.0						
Max Q Clear Time (g_c+I1), s	16.0	9.0		29.7		4.5						
Green Ext Time (p_c), s	0.0	1.0		5.3		2.4						

## Intersection Summary

HCM 7th Control Delay, s/veh 24.3  
 HCM 7th LOS C

## Notes

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

\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

06/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	525	0	0	529	529	104	1	576	0	0	0
Future Volume (vph)	32	525	0	0	529	529	104	1	576	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			4%			0%			0%	
Storage Length (ft)	230		0	0		170	100		0	0		0
Storage Lanes	1		0	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			25				25
Link Distance (ft)		666			428			363				210
Travel Time (s)		13.0			8.3			9.9				5.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	9%	9%	5%	5%	5%	7%	7%	7%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases	2				6			8				
Detector Phase	5	2			6	6	8	8	8			
Switch Phase												
Minimum Initial (s)	5.0	7.0			7.0	7.0	7.0	7.0	7.0			
Minimum Split (s)	11.0	31.0			32.8	32.8	36.8	36.8	36.8			
Total Split (s)	12.0	57.0			45.0	45.0	43.0	43.0	43.0			
Total Split (%)	12.0%	57.0%			45.0%	45.0%	43.0%	43.0%	43.0%			
Yellow Time (s)	4.0	4.0			3.8	3.8	3.8	3.8	3.8			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Total Lost Time (s)	6.0	6.0			5.8	5.8		5.8	5.8			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Recall Mode	None	C-Min			C-Min	C-Min	None	None	None			

Intersection Summary

Area Type: Other

Cycle Length: 100

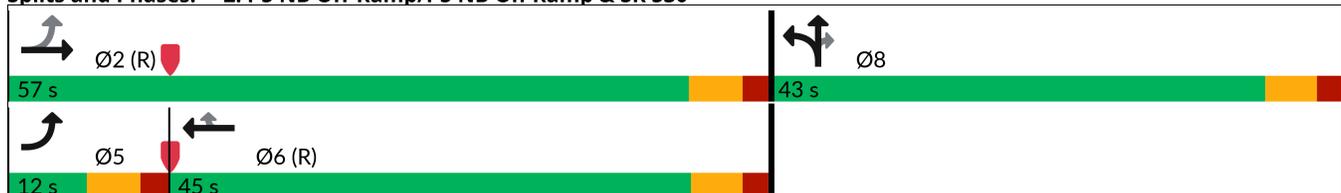
Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Splits and Phases: 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530



HCM 7th Signalized Intersection Summary  
 2: I-5 NB Off-Ramp/I-5 NB On-Ramp & SR 530

06/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	525	0	0	529	529	104	1	576	0	0	0
Future Volume (veh/h)	32	525	0	0	529	529	104	1	576	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
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	1714	1714	0	0	1732	1732	1796	1796	1796			
Adj Flow Rate, veh/h	36	583	0	0	588	588	116	1	640			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
Percent Heavy Veh, %	9	9	0	0	5	5	7	7	7			
Cap, veh/h	176	874	0	0	725	614	637	0	566			
Arrive On Green	0.06	1.00	0.00	0.00	0.42	0.42	0.37	0.37	0.37			
Sat Flow, veh/h	1632	1714	0	0	1732	1468	1697	15	1522			
Grp Volume(v), veh/h	36	583	0	0	588	588	117	0	640			
Grp Sat Flow(s),veh/h/ln	1632	1714	0	0	1732	1468	1711	0	1522			
Q Serve(g_s), s	1.2	0.0	0.0	0.0	29.9	38.9	4.6	0.0	37.2			
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.0	29.9	38.9	4.6	0.0	37.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	176	874	0	0	725	614	637	0	566			
V/C Ratio(X)	0.20	0.67	0.00	0.00	0.81	0.96	0.18	0.00	1.13			
Avail Cap(c_a), veh/h	222	874	0	0	725	614	637	0	566			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(l)	0.94	0.94	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.2	0.0	0.0	0.0	25.6	28.2	21.2	0.0	31.4			
Incr Delay (d2), s/veh	0.5	3.8	0.0	0.0	9.6	27.3	0.2	0.0	79.0			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.9	0.0	0.0	13.5	17.5	1.9	0.0	25.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	3.8	0.0	0.0	35.2	55.5	21.4	0.0	110.4			
LnGrp LOS	B	A			D	E	C		F			
Approach Vol, veh/h	619		1176				757					
Approach Delay, s/veh	4.7		45.4				96.7					
Approach LOS	A		D				F					
Timer - Assigned Phs	2		5				6			8		
Phs Duration (G+Y+Rc), s	57.0		9.2				47.8			43.0		
Change Period (Y+Rc), s	6.0		6.0				* 6			5.8		
Max Green Setting (Gmax), s	51.0		6.0				* 39			37.2		
Max Q Clear Time (g_c+I1), s	2.0		3.2				40.9			39.2		
Green Ext Time (p_c), s	6.6		0.0				0.0			0.0		

Intersection Summary

HCM 7th Control Delay, s/veh	50.7
HCM 7th LOS	D

Notes

\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings  
 3: Smokey Point Blvd & SR 530

06/06/2025

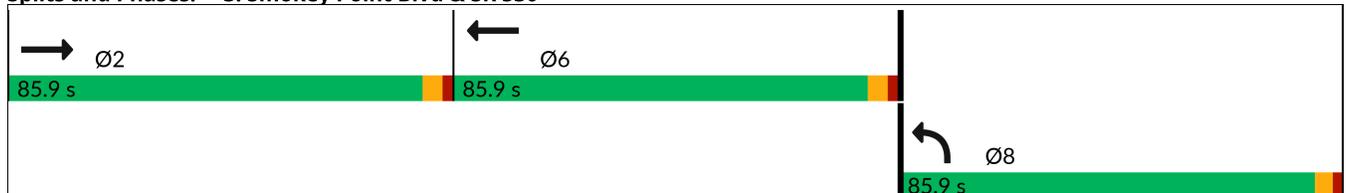


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↑	↻	
Traffic Volume (vph)	832	197	0	737	218	6
Future Volume (vph)	832	197	0	737	218	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	35			35	35	
Link Distance (ft)	315			242	242	
Travel Time (s)	6.1			4.7	4.7	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	3%	3%	3%	13%	13%
Shared Lane Traffic (%)						
Turn Type	NA			NA	Prot	
Protected Phases	2			6	8	
Permitted Phases						
Detector Phase	2			6	8	
Switch Phase						
Minimum Initial (s)	7.0			7.0	5.0	
Minimum Split (s)	40.9			23.9	28.5	
Total Split (s)	85.9			85.9	85.9	
Total Split (%)	33.3%			33.3%	33.3%	
Yellow Time (s)	3.9			3.9	3.5	
All-Red Time (s)	2.0			2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.9			5.9	5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min			Min	None	

Intersection Summary

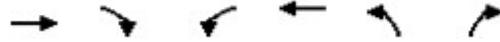
Area Type: Other  
 Cycle Length: 257.7  
 Actuated Cycle Length: 216.8  
 Natural Cycle: 145  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Smokey Point Blvd & SR 530



HCM 7th Signalized Intersection Summary  
 3: Smokey Point Blvd & SR 530

06/06/2025



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	832	197	0	737	218	6
Future Volume (veh/h)	832	197	0	737	218	6
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
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	1856	0	1856	1707	1707
Adj Flow Rate, veh/h	914	216	0	810	240	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	0	3	13	13
Cap, veh/h	1016	240	0	1299	286	8
Arrive On Green	0.70	0.70	0.00	0.70	0.18	0.18
Sat Flow, veh/h	1451	343	0	1856	1568	46
Grp Volume(v), veh/h	0	1130	0	810	248	0
Grp Sat Flow(s),veh/h/ln	0	1794	0	1856	1621	0
Q Serve(g_s), s	0.0	49.6	0.0	22.6	14.3	0.0
Cycle Q Clear(g_c), s	0.0	49.6	0.0	22.6	14.3	0.0
Prop In Lane		0.19	0.00		0.97	0.03
Lane Grp Cap(c), veh/h	0	1256	0	1299	296	0
V/C Ratio(X)	0.00	0.90	0.00	0.62	0.84	0.00
Avail Cap(c_a), veh/h	0	1478	0	1529	1342	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	11.8	0.0	7.7	38.3	0.0
Incr Delay (d2), s/veh	0.0	7.4	0.0	0.8	8.7	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	0.0	17.9	0.0	7.5	6.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	19.2	0.0	8.5	47.0	0.0
LnGrp LOS		B		A	D	
Approach Vol, veh/h	1130			810	248	
Approach Delay, s/veh	19.2			8.5	47.0	
Approach LOS	B			A	D	
<b>Timer - Assigned Phs</b>		<b>2</b>			<b>6</b>	<b>8</b>
Phs Duration (G+Y+Rc), s		73.9			73.9	23.2
Change Period (Y+Rc), s		5.9			5.9	5.5
Max Green Setting (Gmax), s		80.0			80.0	80.4
Max Q Clear Time (g_c+I1), s		51.6			24.6	16.3
Green Ext Time (p_c), s		16.4			11.2	1.3
<b>Intersection Summary</b>						
HCM 7th Control Delay, s/veh			18.4			
HCM 7th LOS			B			

# LANE LEVEL OF SERVICE

## Lane Level of Service

Site: 5 [211th PI NE / SR 530 (Site Folder: 2027 With Project - Weekday PM Peak Hour)]

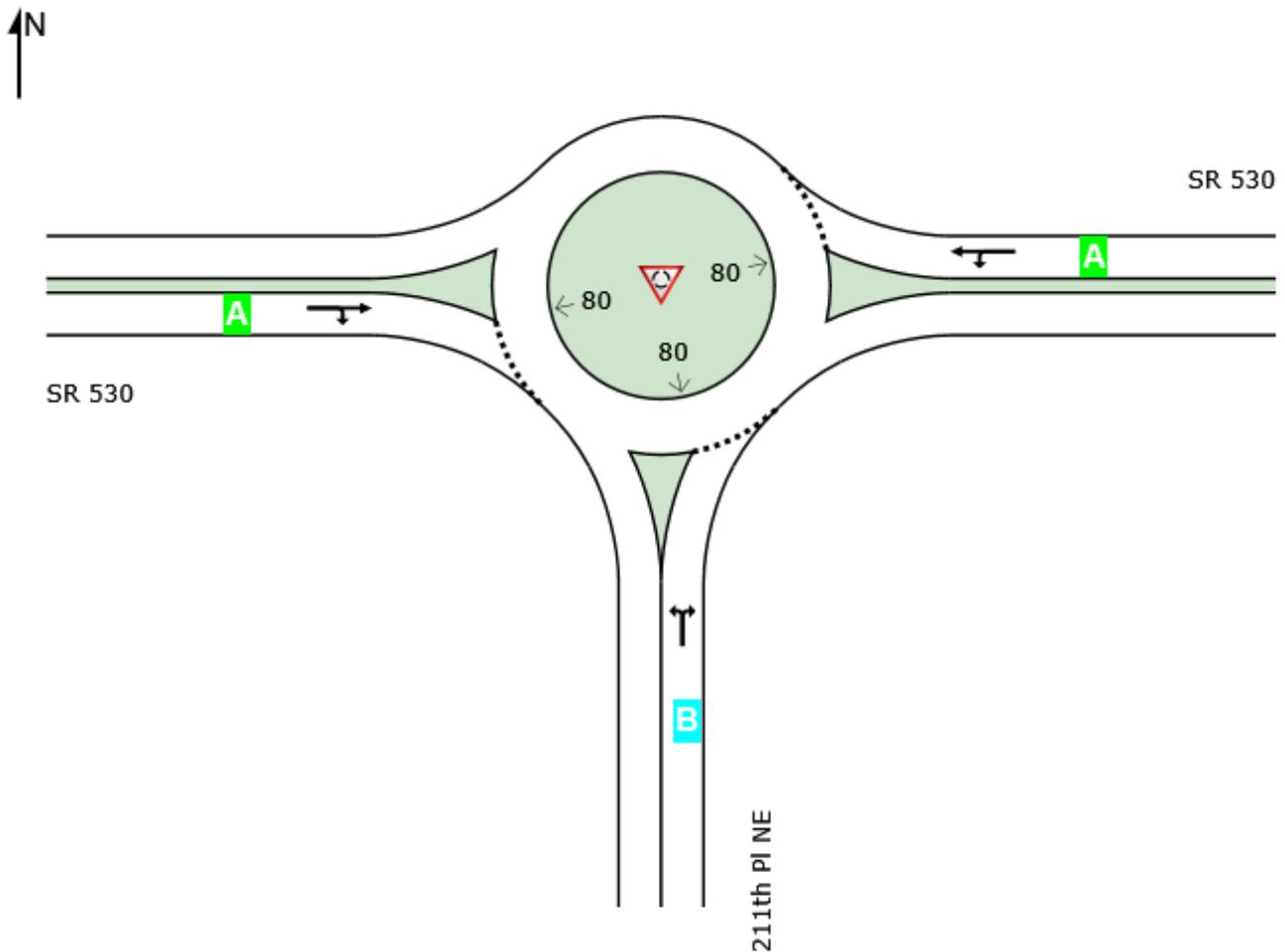
Output produced by SIDRA INTERSECTION Version: 9.1.6.228

211th PI NE / SR 530

Site Category: 2027 With Project - Weekday PM Peak Hour

Roundabout

	Approaches			Intersection
	South	East	West	
LOS	B	A	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 4 [59th Ave NE / SR 530 (Site Folder: 2027 With Project - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

Kraetz Rd / SR 530

Site Category: 2027 With Project - Weekday PM Peak Hour

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%				[ Veh. veh	Dist ]				
South: 59th Ave NE															
3	L2	All MCs	55	5.0	55	5.0	0.204	16.6	LOS B	1.3	33.4	0.86	0.80	0.86	30.7
8	T1	All MCs	1	5.0	1	5.0	0.204	11.3	LOS B	1.3	33.4	0.86	0.80	0.86	31.3
18	R2	All MCs	42	5.0	42	5.0	0.204	11.3	LOS B	1.3	33.4	0.86	0.80	0.86	31.0
Approach			98	5.0	98	5.0	0.204	14.2	LOS B	1.3	33.4	0.86	0.80	0.86	30.9
East: SR 530															
1	L2	All MCs	54	2.0	54	2.0	0.724	10.5	LOS B	9.4	239.3	0.57	0.45	0.57	33.8
6	T1	All MCs	828	2.0	828	2.0	0.724	5.2	LOS A	9.4	239.3	0.57	0.45	0.57	34.5
16	R2	All MCs	2	2.0	2	2.0	0.724	5.1	LOS A	9.4	239.3	0.57	0.45	0.57	34.2
Approach			884	2.0	884	2.0	0.724	5.5	LOS A	9.4	239.3	0.57	0.45	0.57	34.4
North: 59th Ave NE															
7	L2	All MCs	2	8.0	2	8.0	0.124	16.8	LOS B	0.7	19.2	0.82	0.78	0.82	31.6
4	T1	All MCs	1	8.0	1	8.0	0.124	11.5	LOS B	0.7	19.2	0.82	0.78	0.82	32.3
14	R2	All MCs	56	8.0	56	8.0	0.124	11.4	LOS B	0.7	19.2	0.82	0.78	0.82	32.0
Approach			59	8.0	59	8.0	0.124	11.6	LOS B	0.7	19.2	0.82	0.78	0.82	32.0
West: SR 530															
5u	U	All MCs	3	3.0	3	3.0	0.817	12.8	LOS B	14.3	366.0	0.65	0.43	0.65	33.6
5	L2	All MCs	15	3.0	15	3.0	0.817	10.6	LOS B	14.3	366.0	0.65	0.43	0.65	33.6
2	T1	All MCs	906	3.0	906	3.0	0.817	5.3	LOS A	14.3	366.0	0.65	0.43	0.65	34.3
12	R2	All MCs	85	3.0	85	3.0	0.817	5.3	LOS A	14.3	366.0	0.65	0.43	0.65	34.0
Approach			1009	3.0	1009	3.0	0.817	5.4	LOS A	14.3	366.0	0.65	0.43	0.65	34.3
All Vehicles			2051	2.8	2051	2.8	0.817	6.1	LOS A	14.3	366.0	0.63	0.47	0.63	34.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

# LANE LEVEL OF SERVICE

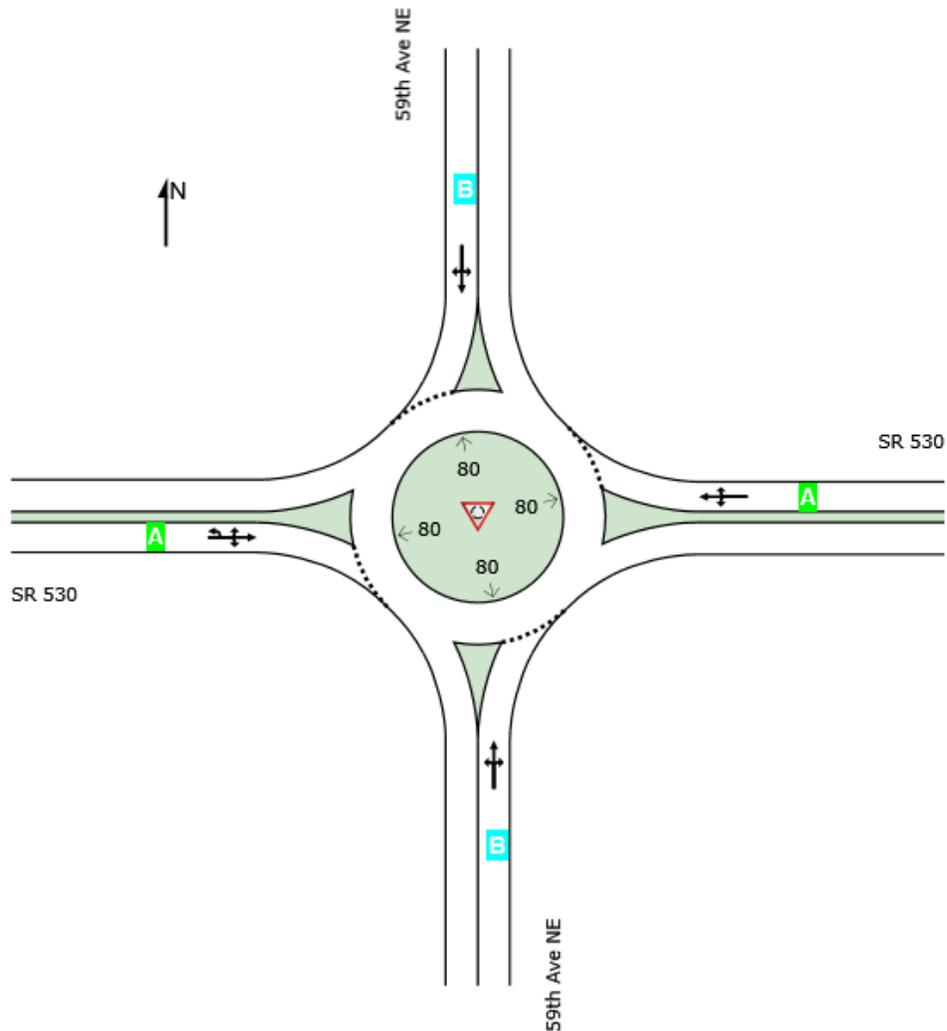
## Lane Level of Service

 Site: 4 [59th Ave NE / SR 530 (Site Folder: 2027 With Project - Weekday PM Peak Hour)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Kraetz Rd / SR 530  
 Site Category: 2027 With Project - Weekday PM Peak Hour  
 Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	A	B	A	A



Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used).

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

# MOVEMENT SUMMARY

**Site: 5 [211th PI NE / SR 530 (Site Folder: 2027 With Project - Weekday PM Peak Hour)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.6.228**

211th PI NE / SR 530  
 Site Category: 2027 With Project - Weekday PM Peak Hour  
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[ Total HV ]	%	[ Total HV ]	%	v/c	sec		[ Veh. veh	Dist ]				mph
			veh/h		veh/h					ft					
South: 211th PI NE															
3	L2	All MCs	282	1.0	282	1.0	0.358	13.7	LOS B	2.1	53.9	0.71	0.76	0.71	31.2
18	R2	All MCs	8	1.0	8	1.0	0.358	8.4	LOS A	2.1	53.9	0.71	0.76	0.71	31.5
Approach			291	1.0	291	1.0	0.358	13.6	LOS B	2.1	53.9	0.71	0.76	0.71	31.2
East: SR 530															
1	L2	All MCs	8	2.0	8	2.0	0.539	11.5	LOS B	4.1	103.8	0.65	0.58	0.65	33.6
6	T1	All MCs	545	2.0	545	2.0	0.539	6.2	LOS A	4.1	103.8	0.65	0.58	0.65	34.3
Approach			554	2.0	554	2.0	0.539	6.3	LOS A	4.1	103.8	0.65	0.58	0.65	34.3
West: SR 530															
2	T1	All MCs	666	2.0	666	2.0	0.738	4.2	LOS A	11.3	286.8	0.18	0.40	0.18	35.8
12	R2	All MCs	303	2.0	303	2.0	0.738	4.2	LOS A	11.3	286.8	0.18	0.40	0.18	35.5
Approach			969	2.0	969	2.0	0.738	4.2	LOS A	11.3	286.8	0.18	0.40	0.18	35.7
All Vehicles			1813	1.8	1813	1.8	0.738	6.3	LOS A	11.3	286.8	0.41	0.51	0.41	34.5

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA HCM.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Project: T:\Active Projects\Quarterra SR 530 Site (Arlington) - 2024-143\Planning\LOS\Quarterra SR 530 Site (Arlington) - Sidra.sip9

Lanes, Volumes, Timings

6: SR 9/SR 530 & Division St/W Division St

06/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	298	224	140	91	224	174	170	420	69	82	300	173
Future Volume (vph)	298	224	140	91	224	174	170	420	69	82	300	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			0%				0%
Storage Length (ft)	320		60	165		0	290		160	140		65
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			25			35				40
Link Distance (ft)		510			418			679				523
Travel Time (s)		6.3			11.4			13.2				8.9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	4%	4%	4%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm									
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.5	42.1	42.1	10.5	41.1	41.1	10.5	33.9	33.9	10.5	12.9	12.9
Total Split (s)	25.5	40.1	40.1	25.5	40.1	40.1	20.5	30.9	30.9	30.5	30.9	30.9
Total Split (%)	20.1%	31.6%	31.6%	20.1%	31.6%	31.6%	16.1%	24.3%	24.3%	24.0%	24.3%	24.3%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.1	3.1	3.5	3.9	3.9	3.5	3.9	3.9
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.1	5.1	5.5	5.9	5.9	5.5	5.9	5.9
Lead/Lag	Lead	Lag	Lag									
Lead-Lag Optimize?	Yes											
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other

Cycle Length: 127

Actuated Cycle Length: 91.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 9/SR 530 & Division St/W Division St



HCM 7th Signalized Intersection Summary  
 6: SR 9/SR 530 & Division St/W Division St

06/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	298	224	140	91	224	174	170	420	69	82	300	173
Future Volume (veh/h)	298	224	140	91	224	174	170	420	69	82	300	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1817	1817	1817	1885	1885	1885	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	320	241	151	98	241	187	183	452	74	88	323	186
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	4	4	4
Cap, veh/h	459	528	447	393	336	285	350	524	444	246	429	364
Arrive On Green	0.18	0.29	0.29	0.06	0.18	0.18	0.10	0.28	0.28	0.06	0.23	0.23
Sat Flow, veh/h	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Grp Volume(v), veh/h	320	241	151	98	241	187	183	452	74	88	323	186
Grp Sat Flow(s),veh/h/ln	1731	1817	1540	1795	1885	1598	1781	1870	1585	1753	1841	1560
Q Serve(g_s), s	10.0	7.8	5.5	3.1	8.6	7.8	5.4	16.4	2.5	2.7	11.7	7.4
Cycle Q Clear(g_c), s	10.0	7.8	5.5	3.1	8.6	7.8	5.4	16.4	2.5	2.7	11.7	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	459	528	447	393	336	285	350	524	444	246	429	364
V/C Ratio(X)	0.70	0.46	0.34	0.25	0.72	0.66	0.52	0.86	0.17	0.36	0.75	0.51
Avail Cap(c_a), veh/h	639	890	754	781	923	782	537	654	554	758	644	546
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	20.7	19.9	21.7	27.7	27.3	18.7	24.4	19.4	20.2	25.5	23.9
Incr Delay (d2), s/veh	1.9	0.6	0.4	0.3	2.9	2.6	1.2	9.6	0.2	0.9	2.7	1.1
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	3.5	2.9	1.9	1.3	4.0	3.0	2.2	8.1	0.9	1.1	5.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.8	21.4	20.4	22.0	30.5	29.9	19.9	34.0	19.6	21.1	28.2	25.0
LnGrp LOS	B	C	C	C	C	C	B	C	B	C	C	C
Approach Vol, veh/h		712			526			709			597	
Approach Delay, s/veh		20.5			28.7			28.9			26.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.1	25.9	13.0	22.6	18.1	17.9	9.6	25.9				
Change Period (Y+Rc), s	5.5	5.1	5.5	5.9	5.5	5.1	5.5	5.9				
Max Green Setting (Gmax), s	20.0	35.0	15.0	25.0	20.0	35.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	5.1	9.8	7.4	13.7	12.0	10.6	4.7	18.4				
Green Ext Time (p_c), s	0.2	1.6	0.3	1.9	0.6	2.1	0.2	1.6				

Intersection Summary

HCM 7th Control Delay, s/veh	25.8
HCM 7th LOS	C

Notes

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

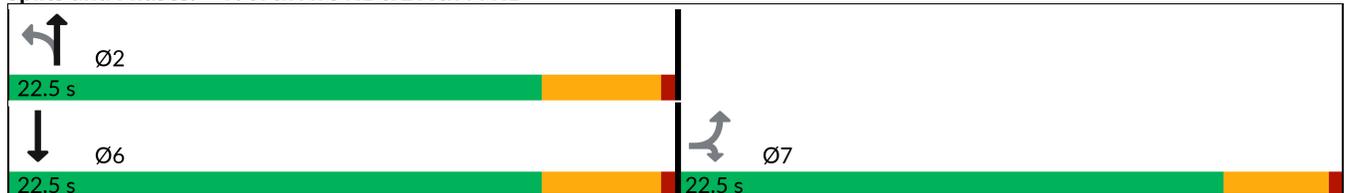


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	95	222	258	405	323	51
Future Volume (vph)	95	222	258	405	323	51
Satd. Flow (prot)	1736	1553	1787	1881	1777	0
Flt Permitted	0.950		0.532			
Satd. Flow (perm)	1731	1516	1001	1881	1777	0
Satd. Flow (RTOR)		231			21	
Confl. Peds. (#/hr)	2	3				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	5%	5%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	99	231	269	422	389	0
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				2	6	
Permitted Phases	7	7	2			
Detector Phase	7	7	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.0	9.0	9.5	9.5	31.5	
Total Split (s)	22.5	22.5	22.5	22.5	22.5	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	3.5	3.5	4.0	4.0	4.0	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.5	4.5	4.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	Min	
Act Effct Green (s)	6.5	6.5	19.4	19.4	19.4	
Actuated g/C Ratio	0.21	0.21	0.62	0.62	0.62	
v/c Ratio	0.28	0.47	0.43	0.36	0.35	
Control Delay (s/veh)	13.0	5.7	8.0	5.7	5.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	13.0	5.7	8.0	5.7	5.5	
LOS	B	A	A	A	A	
Approach Delay (s/veh)	7.9			6.6	5.5	
Approach LOS	A			A	A	

**Intersection Summary**

Cycle Length: 45  
 Actuated Cycle Length: 31.4  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay (s/veh): 6.6  
 Intersection Capacity Utilization 50.5%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service A

**Splits and Phases: 7: 67th Ave NE & 211th PI NE**



Lanes, Volumes, Timings  
8: 67th Ave NE & 204th St NE

06/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	190	44	259	204	133	69	395	227	146	290	106
Future Volume (vph)	141	190	44	259	204	133	69	395	227	146	290	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	140		0	195		0	285		150	205		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		624			467			447			346	
Travel Time (s)		12.2			9.1			8.7			6.7	
Confl. Peds. (#/hr)			1	1			2		6	6		2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	6%	6%	6%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	10.0	10.0	5.0	10.0	
Minimum Split (s)	10.2	38.2		10.2	34.2		10.5	35.5	35.5	10.5	28.5	
Total Split (s)	15.2	25.2		15.2	25.2		15.5	25.5	25.5	15.5	25.5	
Total Split (%)	18.7%	31.0%		18.7%	31.0%		19.0%	31.3%	31.3%	19.0%	31.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.2	1.2		1.2	1.2		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2		5.5	5.5	5.5	5.5	5.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	Min	Min	None	Min	

Intersection Summary

Area Type: Other  
 Cycle Length: 81.4  
 Actuated Cycle Length: 82.2  
 Natural Cycle: 95  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 8: 67th Ave NE & 204th St NE

Ø1 15.5 s	Ø2 25.5 s	Ø3 15.2 s	Ø4 25.2 s
Ø5 15.5 s	Ø6 25.5 s	Ø7 15.2 s	Ø8 25.2 s

HCM 7th Signalized Intersection Summary  
 8: 67th Ave NE & 204th St NE

06/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	190	44	259	204	133	69	395	227	146	290	106
Future Volume (veh/h)	141	190	44	259	204	133	69	395	227	146	290	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
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											
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1885	1885	1885	1811	1811	1811
Adj Flow Rate, veh/h	147	198	46	270	212	139	72	411	236	152	302	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	1	1	1	6	6	6
Cap, veh/h	318	270	63	432	253	166	281	497	416	305	377	137
Arrive On Green	0.09	0.18	0.18	0.15	0.24	0.24	0.05	0.26	0.26	0.09	0.30	0.30
Sat Flow, veh/h	1781	1467	341	1781	1054	691	1795	1885	1579	1725	1263	460
Grp Volume(v), veh/h	147	0	244	270	0	351	72	411	236	152	0	412
Grp Sat Flow(s),veh/h/ln	1781	0	1808	1781	0	1744	1795	1885	1579	1725	0	1723
Q Serve(g_s), s	4.4	0.0	8.6	8.0	0.0	13.0	1.9	13.9	8.8	4.2	0.0	14.9
Cycle Q Clear(g_c), s	4.4	0.0	8.6	8.0	0.0	13.0	1.9	13.9	8.8	4.2	0.0	14.9
Prop In Lane	1.00		0.19	1.00		0.40	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	318	0	333	432	0	418	281	497	416	305	0	514
V/C Ratio(X)	0.46	0.00	0.73	0.62	0.00	0.84	0.26	0.83	0.57	0.50	0.00	0.80
Avail Cap(c_a), veh/h	419	0	534	434	0	515	447	557	466	405	0	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	0.0	26.1	18.2	0.0	24.5	17.6	23.5	21.6	17.3	0.0	21.9
Incr Delay (d2), s/veh	1.5	0.0	4.4	3.2	0.0	10.9	0.7	9.8	1.8	1.8	0.0	9.3
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	1.8	0.0	3.9	3.3	0.0	6.2	0.8	7.0	3.2	1.7	0.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.6	0.0	30.5	21.5	0.0	35.4	18.3	33.3	23.4	19.1	0.0	31.2
LnGrp LOS	C		C		D		B		C		C	
Approach Vol, veh/h	391			621			719			564		
Approach Delay, s/veh	27.1			29.4			28.5			28.0		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	23.4	15.1	17.7	9.2	25.7	11.4	21.4				
Change Period (Y+Rc), s	5.5	5.5	5.2	5.2	5.5	5.5	5.2	5.2				
Max Green Setting (Gmax), s	10.0	20.0	10.0	20.0	10.0	20.0	10.0	20.0				
Max Q Clear Time (g_c+I1), s	6.2	15.9	10.0	10.6	3.9	16.9	6.4	15.0				
Green Ext Time (p_c), s	0.2	1.7	0.0	1.2	0.1	0.9	0.2	1.2				

Intersection Summary

HCM 7th Control Delay, s/veh	28.4
HCM 7th LOS	C

Notes

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

Lanes, Volumes, Timings  
9: SR 9 & 204th St NE

06/06/2025

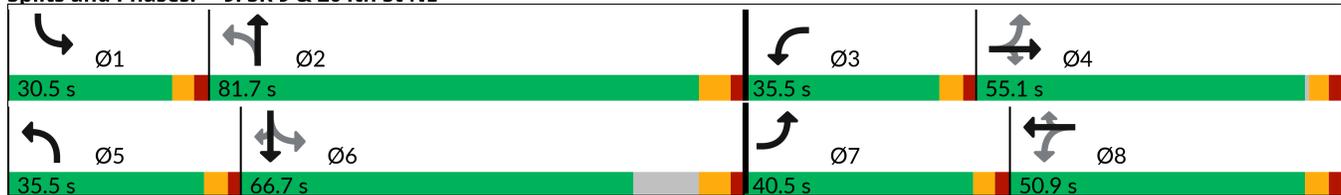


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	375	131	189	316	158	89	421	185	81	325	163
Future Volume (vph)	142	375	131	189	316	158	89	421	185	81	325	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		200	185		0	165		0	180		400
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		546			349			462			641	
Travel Time (s)		10.6			6.8			7.0			9.7	
Confl. Peds. (#/hr)	1		6	6		1	3					3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	10.5	37.1	37.1	10.5	38.9	38.9	10.5	41.7		10.5	42.7	42.7
Total Split (s)	40.5	55.1	55.1	35.5	50.9	50.9	35.5	81.7		30.5	66.7	66.7
Total Split (%)	19.9%	27.1%	27.1%	17.4%	25.0%	25.0%	17.4%	40.1%		15.0%	32.8%	32.8%
Yellow Time (s)	3.5	3.1	3.1	3.5	3.9	3.9	3.5	4.7		3.5	4.7	4.7
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.1	5.1	5.5	5.9	5.9	5.5	6.7		5.5	6.7	6.7
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes							
Recall Mode	None	Min		None	Min	Min						

Intersection Summary

Area Type: Other  
 Cycle Length: 203.6  
 Actuated Cycle Length: 155.1  
 Natural Cycle: 105  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 9: SR 9 & 204th St NE



# HCM 7th Signalized Intersection Summary

9: SR 9 & 204th St NE

06/06/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	142	375	131	189	316	158	89	421	185	81	325	163
Future Volume (veh/h)	142	375	131	189	316	158	89	421	185	81	325	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1885	1885	1885	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	146	387	135	195	326	163	92	434	191	84	335	168
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	3	3	3	2	2	2
Cap, veh/h	310	467	391	290	505	423	384	492	217	199	748	631
Arrive On Green	0.08	0.25	0.25	0.10	0.27	0.27	0.05	0.40	0.40	0.04	0.40	0.40
Sat Flow, veh/h	1795	1885	1578	1781	1870	1567	1767	1220	537	1781	1870	1579
Grp Volume(v), veh/h	146	387	135	195	326	163	92	0	625	84	335	168
Grp Sat Flow(s),veh/h/ln	1795	1885	1578	1781	1870	1567	1767	0	1757	1781	1870	1579
Q Serve(g_s), s	6.9	22.5	8.1	9.2	17.8	9.8	3.5	0.0	38.1	3.2	15.1	8.3
Cycle Q Clear(g_c), s	6.9	22.5	8.1	9.2	17.8	9.8	3.5	0.0	38.1	3.2	15.1	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	310	467	391	290	505	423	384	0	709	199	748	631
V/C Ratio(X)	0.47	0.83	0.35	0.67	0.65	0.39	0.24	0.00	0.88	0.42	0.45	0.27
Avail Cap(c_a), veh/h	711	815	683	572	728	610	759	0	1140	507	971	820
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	41.1	35.8	30.3	37.3	34.4	19.8	0.0	31.9	25.7	25.4	23.3
Incr Delay (d2), s/veh	1.1	4.6	0.6	2.7	1.7	0.7	0.3	0.0	6.3	1.4	0.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.8	3.2	4.1	8.3	3.8	1.4	0.0	16.4	1.3	6.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.8	45.7	36.4	33.0	39.0	35.1	20.1	0.0	38.2	27.1	26.0	23.6
LnGrp LOS	C	D	D	C	D	D	C		D	C	C	C
Approach Vol, veh/h		668			684			717			587	
Approach Delay, s/veh		40.6			36.4			35.9			25.5	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	53.3	17.2	34.6	10.9	52.9	14.7	37.1				
Change Period (Y+Rc), s	5.5	6.7	5.5	* 5.9	5.5	6.7	5.5	5.9				
Max Green Setting (Gmax), s	25.0	75.0	30.0	* 50	30.0	60.0	35.0	45.0				
Max Q Clear Time (g_c+I1), s	5.2	40.1	11.2	24.5	5.5	17.1	8.9	19.8				
Green Ext Time (p_c), s	0.2	6.6	0.5	3.5	0.2	3.9	0.4	3.1				

## Intersection Summary

HCM 7th Control Delay, s/veh	34.9
HCM 7th LOS	C

## Notes

\* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Lanes, Volumes, Timings

10: 59th Ave NE & Private Dvwy/North Site Access

06/06/2025



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	0	0	47	0	44	0	64	67	1
Future Volume (vph)	1	0	0	0	0	47	0	44	0	64	67	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		190			228			321			288	
Travel Time (s)		5.2			6.2			6.3			5.6	
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
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	0	0	0	0	47	0	44	0	64	67	1
Future Vol, veh/h	1	0	0	0	0	47	0	44	0	64	67	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	1	0	0	0	0	51	0	48	0	70	73	1
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	260	260	73	260	261	48	74	0	0	48	0	0
Stage 1	213	213	-	48	48	-	-	-	-	-	-	-
Stage 2	48	48	-	212	213	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	691	643	986	691	642	1018	1519	-	-	1553	-	-
Stage 1	787	725	-	963	853	-	-	-	-	-	-	-
Stage 2	963	853	-	788	724	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	625	613	986	659	612	1018	1519	-	-	1553	-	-
Mov Cap-2 Maneuver	625	613	-	659	612	-	-	-	-	-	-	-
Stage 1	751	691	-	963	853	-	-	-	-	-	-	-
Stage 2	915	853	-	751	690	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	10.77			8.72			0			3.6		
HCM LOS	B			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1519	-	-	625	1018	870	-	-				
HCM Lane V/C Ratio	-	-	-	0.002	0.05	0.045	-	-				
HCM Ctrl Dly (s/v)	0	-	-	10.8	8.7	7.4	0	-				
HCM Lane LOS	A	-	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-				



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	22	22	0	33	34
Future Volume (vph)	0	22	22	0	33	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		35			30
Link Distance (ft)	332		319			321
Travel Time (s)	9.1		6.2			7.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	0	22	22	0	33	34
Future Vol, veh/h	0	22	22	0	33	34
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, %	3	3	3	3	3	3
Mvmt Flow	0	24	24	0	36	37

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	133	24	0	0	24
Stage 1	24	-	-	-	-
Stage 2	109	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227
Pot Cap-1 Maneuver	859	1050	-	-	1584
Stage 1	996	-	-	-	-
Stage 2	913	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	839	1050	-	-	1584
Mov Cap-2 Maneuver	839	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	892	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	8.51	0	3.61
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1050	887	-
HCM Lane V/C Ratio	-	-	0.023	0.023	-
HCM Ctrl Dly (s/v)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

# Appendix E

## Trip Generation Calculations

**Quarterra Arlington Garden Apartments  
Weekday Trip Generation Summary**

Land Use	Units <sup>1</sup>	ITE LUC <sup>2</sup>	Directional Distribution <sup>c</sup>		Trip Rate or Equation <sup>2</sup>	Trips Generated		
			In	Out		In	Out	Total
<b>DAILY</b>								
<i>Proposed Use:</i>								
Strip Retail Plaza (<40k)	12,000 GLA	822	50%	50%	54.45	326	327	653
	<i>Internal Trips<sup>3</sup></i>					-46	-65	-111
	<i>Passby Trips<sup>4</sup></i>	40%				-108	-109	-217
					Subtotal (less internal and passby) =	172	153	325
Multifamily Housing (Low-Rise) - Not Close to Rail Transit	206 DU	220	50%	50%	T = 6.41(X) + 75.31	698	698	1,396
	<i>Internal Trips<sup>3</sup></i>					-65	-46	-111
					Subtotal (less internal) =	633	652	1,285
<b>Gross Daily Trips Generated =</b>						<b>1,024</b>	<b>1,025</b>	<b>2,049</b>
<i>Less Internal Trips =</i>						-111	-111	-222
<i>Less Passby Trips =</i>						-108	-109	-217
<b>Total Proposed Net New Daily Trips =</b>						<b>805</b>	<b>805</b>	<b>1,610</b>
<b>AM PEAK HOUR</b>								
<i>Proposed Use:</i>								
Strip Retail Plaza (<40k)	12,000 GLA	822	60%	40%	2.36	17	11	28
	<i>Internal Trips<sup>3</sup></i>					-1	0	-1
	<i>Passby Trips<sup>4</sup></i>	40%				-7	-4	-11
					Subtotal (less internal and passby) =	9	7	16
Multifamily Housing (Low-Rise) - Not Close to Rail Transit	206 DU	220	24%	76%	T = 0.31(X) + 22.85	21	66	87
	<i>Internal Trips<sup>3</sup></i>					0	-1	-1
					Subtotal (less internal) =	21	65	86
<b>Gross AM Peak Hour Trips Generated =</b>						<b>38</b>	<b>77</b>	<b>115</b>
<i>Less Internal Trips =</i>						-1	-1	-2
<i>Less Passby Trips =</i>						-7	-4	-11
<b>Total Proposed Net New AM Peak Hour Trips =</b>						<b>30</b>	<b>72</b>	<b>102</b>
<b>PM PEAK HOUR</b>								
<i>Proposed Use:</i>								
Strip Retail Plaza (<40k)	12,000 GLA	822	50%	50%	Ln(T) = 0.71 Ln(X) + 2.72	44	45	89
	<i>Internal Trips<sup>3</sup></i>					-4	-12	-16
	<i>Passby Trips<sup>4</sup></i>	40%				-14	-15	-29
					Subtotal (less internal and passby) =	26	18	44
Multifamily Housing (Low-Rise) - Not Close to Rail Transit	206 DU	220	63%	37%	T = 0.43(X) + 20.55	69	40	109
	<i>Internal Trips<sup>3</sup></i>					-12	-4	-16
					Subtotal (less internal) =	57	36	93
<b>Gross PM Peak Hour Trips Generated =</b>						<b>113</b>	<b>85</b>	<b>198</b>
<i>Less Internal Trips =</i>						-16	-16	-32
<i>Less Passby Trips =</i>						-14	-15	-29
<b>Total Proposed Net New PM Peak Hour Trips =</b>						<b>83</b>	<b>54</b>	<b>137</b>

**Notes:**

<sup>1</sup> GLA = Gross Leasable Area, DU = Dwelling Units.

<sup>2</sup> Based on Institute of Transportation Engineers (ITE) *Trip Generation* Manual, 11th Edition, 2021.

<sup>3</sup> Internal trip reductions based on methodology documented in the ITE *Trip Generation Handbook*, 3rd Edition, September 2017.

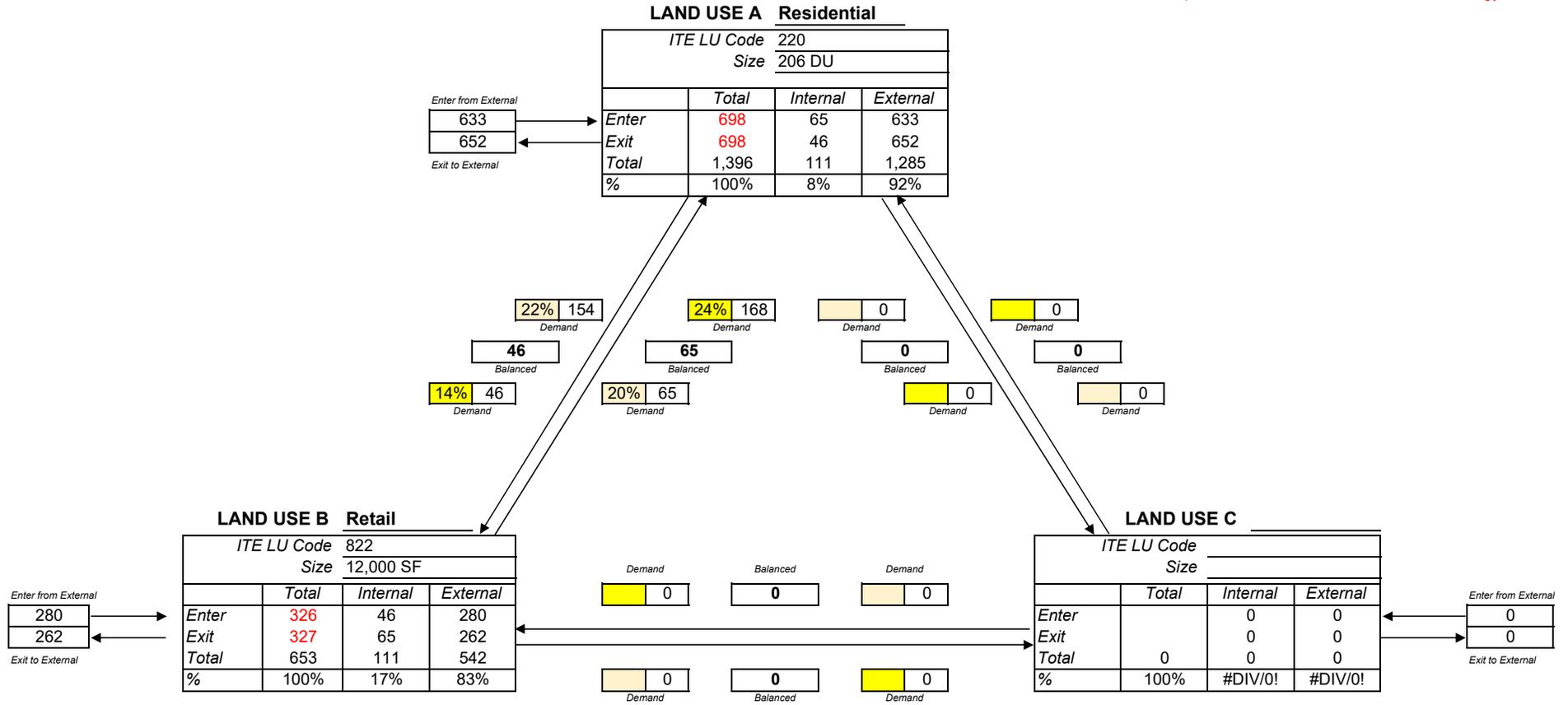
<sup>4</sup> Pass-By trips determined based on methodology included in the Appendices of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition, 2021.

Analyst TENW  
 Date 6/3/2025

### Multi-Use Development Trip Generation and Internal Capture Summary - Daily

Project Name Quarterra Arlington  
 Time Period Weekday Daily

Assumed Average of AM and PM internal capture rates from NCHRP 8-51 Methodology



NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	Quarterra Arlington Garden Apartments			Organization:	TENW
Project Location:	Arlington			Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	AM Street Peak Hour			Date:	6/3/2025

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822	12,000	GFA	28	17	11
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	206	DU	87	21	66
Hotel				0		
All Other Land Uses <sup>2</sup>				0		
<b>Total</b>				<b>115</b>	<b>38</b>	<b>77</b>

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	115	38	77
Internal Capture Percentage	2%	3%	1%
External Vehicle-Trips <sup>3</sup>	113	37	76
External Transit-Trips <sup>4</sup>	0	0	0
External Non-Motorized Trips <sup>4</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	6%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	2%
Hotel	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

<sup>3</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

<sup>4</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

*Estimation Tool Developed by the Texas Transportation Institute*

<b>Project Name:</b>	Quarterra Arlington Garden Apartments
<b>Analysis Period:</b>	AM Street Peak Hour

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	17	17	1.00	11	11
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	21	21	1.00	66	66
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	3		1	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	1	1	13	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	1		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	1	16	17	16	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	21	21	21	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	0	0	0	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	0	11	11	11	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1	65	66	65	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	0	0	0	0	0

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A  
<sup>2</sup>Person-Trips  
<sup>3</sup>Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator  
\*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool					
Project Name:	Quarterra Arlington Garden Apartments			Organization:	TENW
Project Location:	Arlington			Performed By:	
Scenario Description:				Date:	
Analysis Year:				Checked By:	
Analysis Period:	PM Street Peak Hour			Date:	6/3/2025

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822	12,000	GFA	89	44	45
Restaurant				0		
Cinema/Entertainment				0		
Residential	220	206	DU	109	69	40
Hotel				0		
All Other Land Uses <sup>2</sup>				0		
<b>Total</b>				<b>198</b>	<b>113</b>	<b>85</b>

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	12	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	4	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	198	113	85
Internal Capture Percentage	16%	14%	19%
External Vehicle-Trips <sup>3</sup>	166	97	69
External Transit-Trips <sup>4</sup>	0	0	0
External Non-Motorized Trips <sup>4</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	9%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	17%	10%
Hotel	N/A	N/A

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

<sup>3</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

<sup>4</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

*Estimation Tool Developed by the Texas Transportation Institute*

<b>Project Name:</b>	Quarterra Arlington Garden Apartments
<b>Analysis Period:</b>	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	44	44	1.00	45	45
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	69	69	1.00	40	40
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		13	2	12	2
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	17	8	0		1
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		4	0	0	3	0
Retail	0		0	0	32	0
Restaurant	0	22		0	11	0
Cinema/Entertainment	0	2	0		3	0
Residential	0	4	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	4	40	44	40	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	57	69	57	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	12	33	45	33	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	4	36	40	36	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	0	0	0	0	0

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

<sup>2</sup>Person-Trips

<sup>3</sup>Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

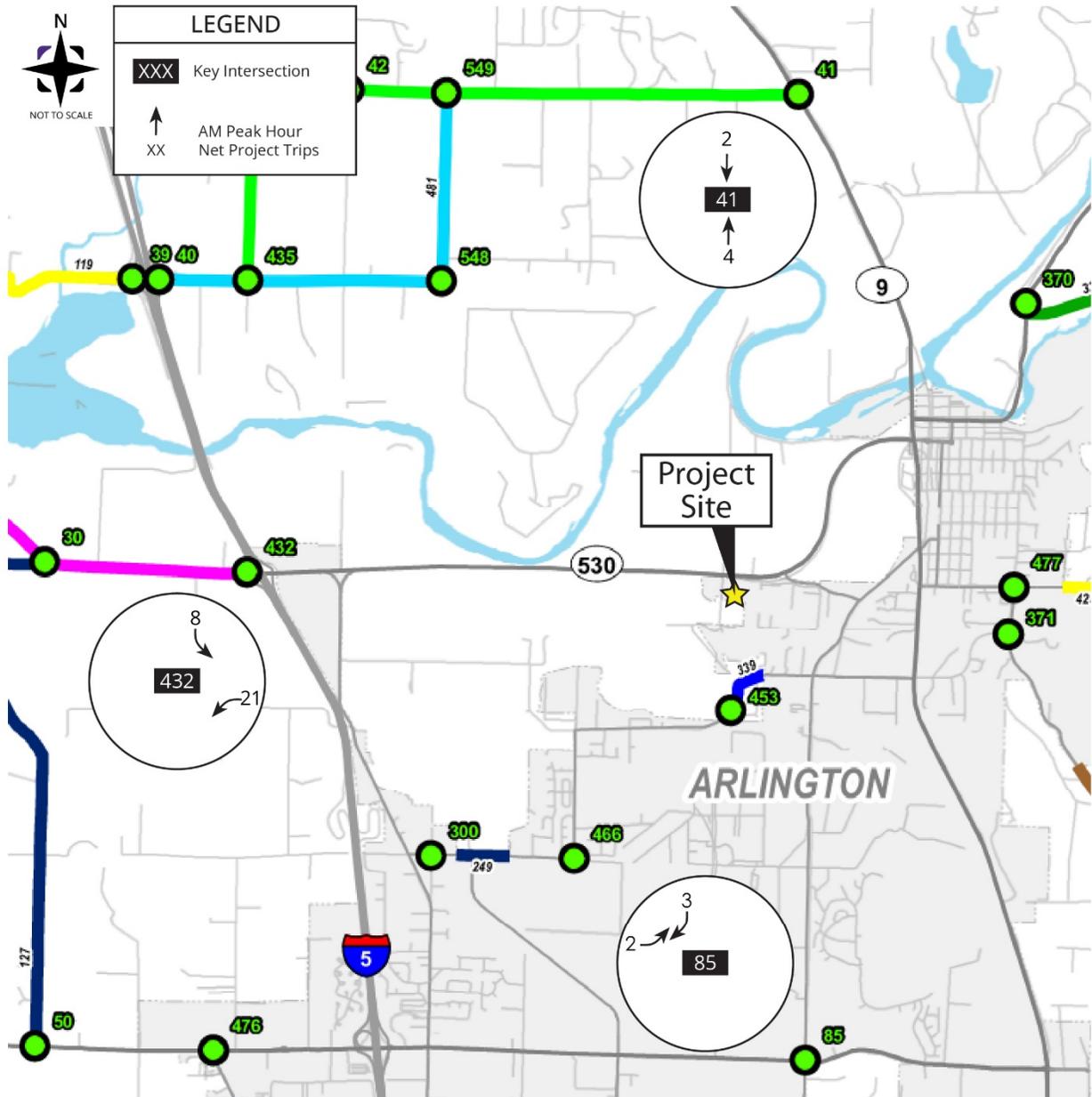
\*Indicates computation that has been rounded to the nearest whole number.



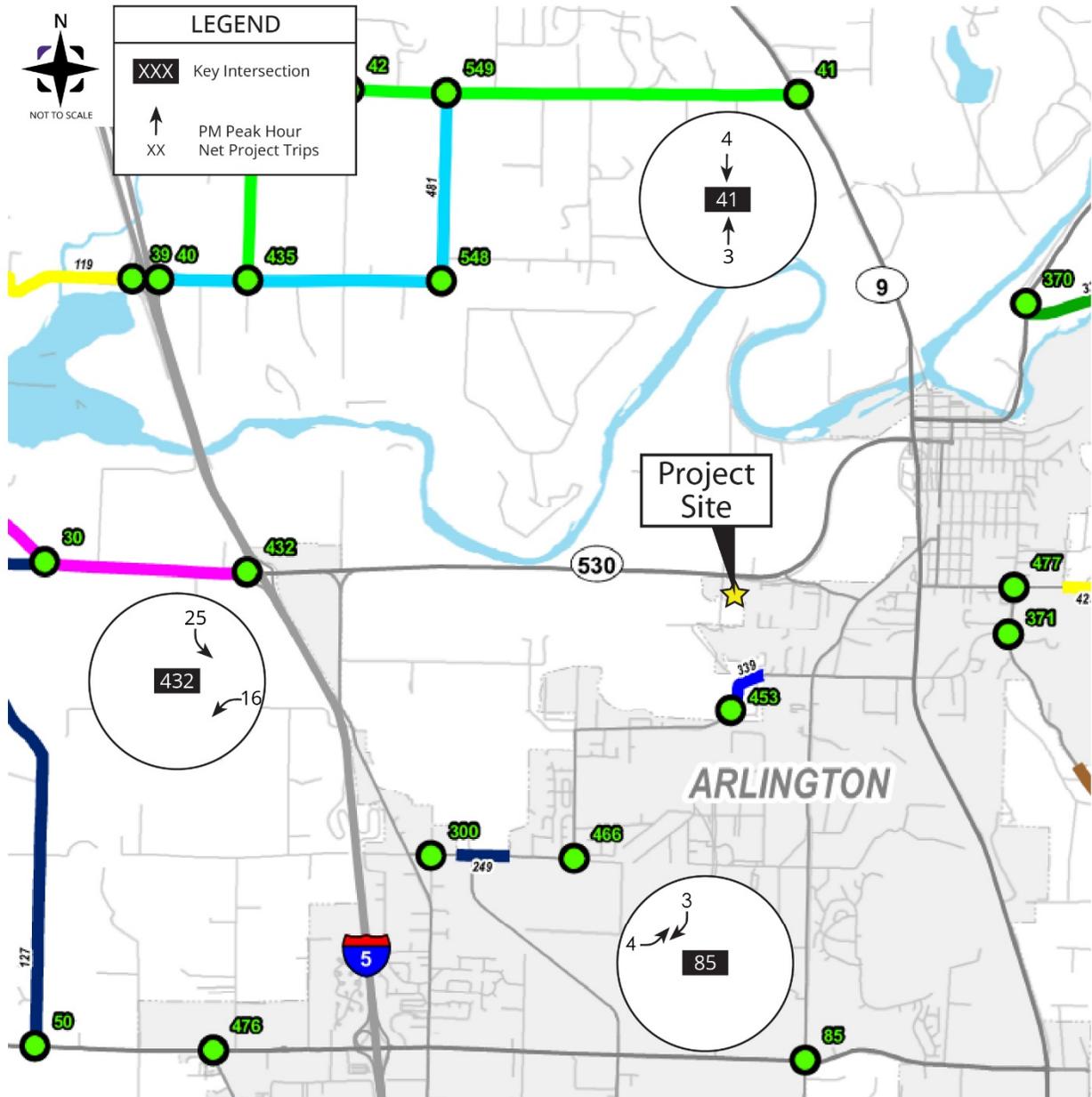
# Appendix F

## Weekday Project Trip Distribution and Assignment for Snohomish County





**Appendix F2: AM Peak Hour Project Trip Assignment at Snohomish County Key Intersections**



**Appendix F3: PM Peak Hour Project Trip Assignment at Snohomish County Key Intersections**



# Appendix G

## WSDOT Traffic Impact Analysis Checklist and Long Version Traffic Mitigation Offer

# Long Version Traffic Mitigation Offer to WSDOT

This three-page version is intended for developments required to submit a comprehensive traffic study consistent with Section One *and* Section Two of the WSDOT Traffic Analysis Checklist.

## Section One: Offer of Mitigation by Applicant for Proposed Snohomish County Development

<i><b>This section to be completed by applicant</b></i>				
Name of Proposed Development <b>Arlington Garden Apartments</b>			Snohomish County Project File Number (Only if this offer is not submitted to PDS with initial application)	
Name of Applicant <b>Quarterra</b>				
Address of Applicant <b>1325 4th Ave, Suite 1300, Seattle, WA 98101</b>				
<b>PROPORTIONATE SHARE CALCULATION: <i>Choose Option 1A or 1B Below</i></b>				
<input checked="" type="checkbox"/> <b>Option 1A</b> for Proportionate Share Mitigation Based on Impacts to Projects in Exhibit C of the WSDOT/COUNTY Interlocal Agreement <span style="color: red; font-weight: bold;">NO IMPACT</span>				
WSDOT Improvement ID#	Title/Description of WSDOT Project	ADTs Impacting Improvement	Improvement Cost per ADT	Proportionate Share Obligation
--	--	--	\$ --	\$ --
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
			\$	\$
<b>Proportionate Share Sum</b>				\$
The APPLICANT hereby voluntarily agrees to pay the proportionate share sum amount shown above for impacts of the DEVELOPMENT on the capacity of state highways, based on the "proportionate share" method adopted in Section 5.2(a) of the applicable version of the WSDOT/COUNTY interlocal agreement (ILA), the list of projects in Exhibit C of the ILA, and information provided in the comprehensive Traffic Study attached hereto.				
<input type="checkbox"/> <b>Option 1B</b> for Proportionate Share Mitigation based on standard amount				
1	_____	<i>New Average Daily Traffic (ADT) generated (from Line 5a of the WSDOT Traffic Study Checklist Section One)</i>		
2	\$36.00	<i>The current "standard payment" rate per ADT in Section 5.2(b) of the applicable version of the WSDOT/COUNTY interlocal agreement (ILA)</i>		
3	\$ _____	<i>Proportionate share calculation (#1 x #2 = #3).</i>		
The APPLICANT hereby voluntarily agrees to pay the amount shown on line #3 above for impacts of the DEVELOPMENT on the capacity of state highways, based on the "standard payment" rate and method adopted in Section 5.2(b) of the applicable version of the WSDOT/COUNTY interlocal agreement (ILA), and based on information provided in the WSDOT Traffic Study Checklist Section One (attached hereto).				

HIGH ACCIDENT LOCATIONS (ILA SECTION 5.3.A)	
<input type="checkbox"/> No impact	<input type="checkbox"/> Mitigation as described in attached document.
LEVEL OF SERVICE AT STATE HIGHWAY INTERSECTIONS (ILA SECTION 5.3.B)	
<input type="checkbox"/> No impact	<input type="checkbox"/> Mitigation as described in attached document.
INSTALLATION OF TRAFFIC SIGNAL (ILA SECTION 5.4)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Mitigation or other provisions as described in attached document.
CHANNELIZATION REVISIONS (ILA SECTION 5.5)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Mitigation or other provisions as described in attached document.
FRONTAGE IMPROVEMENTS (ILA SECTION 5.6)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Mitigation or other provisions as described in attached document.
RIGHT-OF-WAY REQUIREMENTS (ILA SECTION 5.7)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Mitigation or other provisions as described in attached document.
SETBACK REQUIREMENTS (ILA SECTION 5.8)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Mitigation or other provisions as described in attached document.
ACCESS CONNECTIONS (ILA SECTION 5.9)	
<input type="checkbox"/> No impact or not applicable	<input type="checkbox"/> Permitted Access to adjacent State Highway verified by DEVELOPER or application made with WSDOT
<b>SUBMITTAL OPTIONS</b>	
<p>If this offer and all necessary attachments are submitted to Snohomish County PDS (COUNTY) with the initial development application, then PDS will send all documents to WSDOT for review and comment(s) and WSDOT will send the written offer back to PDS. Otherwise, the applicant is responsible for working directly with WSDOT, submitting the required documents, obtaining WSDOT's signature, and submitting the written offer to PDS</p> <p><input type="checkbox"/> This offer, Sections One and Two of WSDOT Traffic Study Checklist, and all necessary supporting documentation (one original plus two copies) are hereby submitted to PDS with initial application</p> <p><input type="checkbox"/> Applicant is working directly with WSDOT</p>	
BY:	
_____	Date _____
Signature of Applicant or Authorized Representative	Print Name and Title

**Section Two: Processing by Snohomish County PDS if included with initial application. Otherwise applicant works directly with WSDOT (Section 3).**

***This section to be completed by Snohomish County PDS***

Date Received	Name of PDS Planner Assigned to Project	Phone Number of Planner
<u>Instructions to PDS</u>	Send this three-page offer, Sections One and Two of WSDOT Traffic Study Checklist, and all attachments to WSDOT and DPW as shown below:	
1. Original mailed to WSDOT Snohomish Area Development Services, MS 240, WSDOT NW Region, PO Box 330310, Seattle WA 98133-9710 2. Convenience copy mailed to Snohomish County Public Works Land Use Section		
BY:		
_____ Date _____		_____
Initiated by PDS Staff Person		Print Name and Title

**Section Three: Review and/or Approval by WSDOT**

<b><i>This section to be completed by WSDOT</i></b>	
<b>WSDOT RECEIPT OF OFFER ATTACHMENT(S)</b>	
<input type="checkbox"/> Original offer, Sections One and Two of WSDOT Traffic Study Checklist, and all attachments received from Snohomish County PDS.	
<input type="checkbox"/> Original offer and attachment(s) received from _____	
BY:	
_____ Date _____	
Initiated by WSDOT Staff Person	Print Name and Title
<b>WSDOT REQUEST</b>	
WSDOT has reviewed the traffic study and this mitigation offer submitted by the Applicant and has determined as follows:	
<input type="checkbox"/> WSDOT requests that the COUNTY impose the mitigation offered above as a condition of approval for the DEVELOPMENT. WSDOT agrees to accept changes in the proportionate payment amount shown above resulting from TDM or lot-yield adjustments approved by the COUNTY.	<input type="checkbox"/> WSDOT requests that the COUNTY require additional supplemental information to adequately evaluate the proposed development's impacts.
<input type="checkbox"/> The information requested is shown in the attached document.	
<b>ROUTING BY WSDOT</b>	
<input type="checkbox"/> Original written offer with all applicable signatures has been mailed to the PDS Planner shown in Section 2 above at Snohomish County PDS, 3000 Rockefeller, Everett WA 98201.	
<input type="checkbox"/> Copy of written offer with all signatures has been mailed to Snohomish County DPW Land Use Division, 3000 Rockefeller, Everett, WA 98201.	
Alternatively, in cases in which the form was not submitted to PDS with initial application	
<input type="checkbox"/> Original written offer has been mailed to the applicant shown above and a copy has been mailed to Snohomish County DPW Land Use Division, 2930 Wetmore, Everett, WA 98201	
BY:	
_____ Date _____	
Signature of Authorized WSDOT Official	Print Name and Title