

Traffic Impact Study

# QuikTrip 4263

Aurora, Colorado

Prepared for:

**QuikTrip Corporation**

**Kimley»Horn**

# T R A F F I C I M P A C T S T U D Y

## **QuikTrip 4263**

Aurora, Colorado

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## 1.0 EXECUTIVE SUMMARY

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QuikTrip 4263 is proposed to be located near the southeast corner of the Parker Road (SH-83) and Havana Street (SH-30) intersection in Aurora, Colorado. The project is proposed to include an 18-fueling position gas station with a 5,312 square foot convenience to redevelop the previous diner restaurant currently located within the existing retail center. It is expected that the project will be completed in the next couple years. Therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2050 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The intersection of Parker Road (SH-83) and Havana Street (SH-30) was incorporated into this traffic study in accordance with the City of Aurora and State of Colorado Department of Transportation (CDOT) standards and requirements:

In addition, the existing full movement accesses along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue to remain were evaluated.

Regional access to the site will be provided by Interstate 225 (I-225). Primary access will be provided by Parker Road (SH-83) and Havana Street (SH-30). Direct access will be provided by the existing full movement intersections along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue.

With 18 fueling positions and an approximate 5,312 square foot convenience store, QuikTrip 4263 is expected to generate approximately 4,628 daily weekday driveway trips, with 487 of these trips occurring during the morning peak hour and 410 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 1,158 weekday daily trips, of which 117 trips and 102 trips are anticipated during the weekday morning and afternoon peak hours, respectively.



Based on the analysis presented in this report, Kimley-Horn believes QuikTrip 4263 will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of the Parker Road (SH-83) and east leg of the Havana Street (SH-30) project accesses are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections accesses as development occurs.
- Direct access to the site will utilize the three existing full movement accesses along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue that currently serve the overall shopping center. The project access intersections along Havana Street and Parker Road currently provide stop control on the approaches exiting the existing development; therefore, a R1-1 “STOP” sign is recommended to be placed on the southbound approach, exiting the site onto Yale Avenue.
- If 2050 volumes are realized, the second northbound left turn lane that is currently striped out at the Parker Road (SH-83) and Havana Street (SH-30) intersection is recommended to be striped to provide dual left turn lanes. The dual left turn lanes are recommended to operate with protected-only left turn phasing. Additionally, the third westbound through lane may need to be implemented within the existing pavement shoulder. Therefore, the westbound right turn lane will convert to a shared through/right turn lane and the southbound to westbound acceleration will become the third receiving through lane.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora, Colorado Department of Transportation, and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.

## 2.0 INTRODUCTION

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Kimley-Horn has prepared this report to document the results of a Traffic Impact Study for QuikTrip 4263 proposed to replace a previous restaurant located on the southeast corner of the Parker Road (SH-83) and Havana Street (SH-30) intersection in Aurora, Colorado. A vicinity map illustrating the project development location is shown in **Figure 1**. The project is proposed to include an 18-fueling position gas station with a 5,312 square foot convenience store. A conceptual site plan is attached in **Appendix A**. It is expected that the project will be completed in the next couple years; therefore, analysis was conducted for the 2026 short-term buildout horizon as well as the 2050 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The intersection of Parker Road (SH-83) and Havana Street (SH-30) was incorporated into this traffic study in accordance with the City of Aurora and State of Colorado Department of Transportation (CDOT) standards and requirements:

In addition, the existing full movement accesses along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue to remain were evaluated.

Regional access to the site will be provided by Interstate 225 (I-225). Primary access will be provided by Parker Road (SH-83) and Havana Street (SH-30). Direct access will be provided by the existing full movement intersections along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue.





FIGURE 1  
QUIKTRIP 4263  
AURORA, COLORADO  
VICINITY MAP

## 3.0 EXISTING AND FUTURE CONDITIONS

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### 3.1 Existing Study Area

The existing site is a vacant restaurant and associated parking lot. To the north and south are commercial uses composed mainly of strip retail stores and office buildings. To the east are multi-family and single-family residential homes. To the west of the site is the Babi Yar Park, an apartment complex, and multi-family residential homes.

### 3.2 Existing Roadway Network

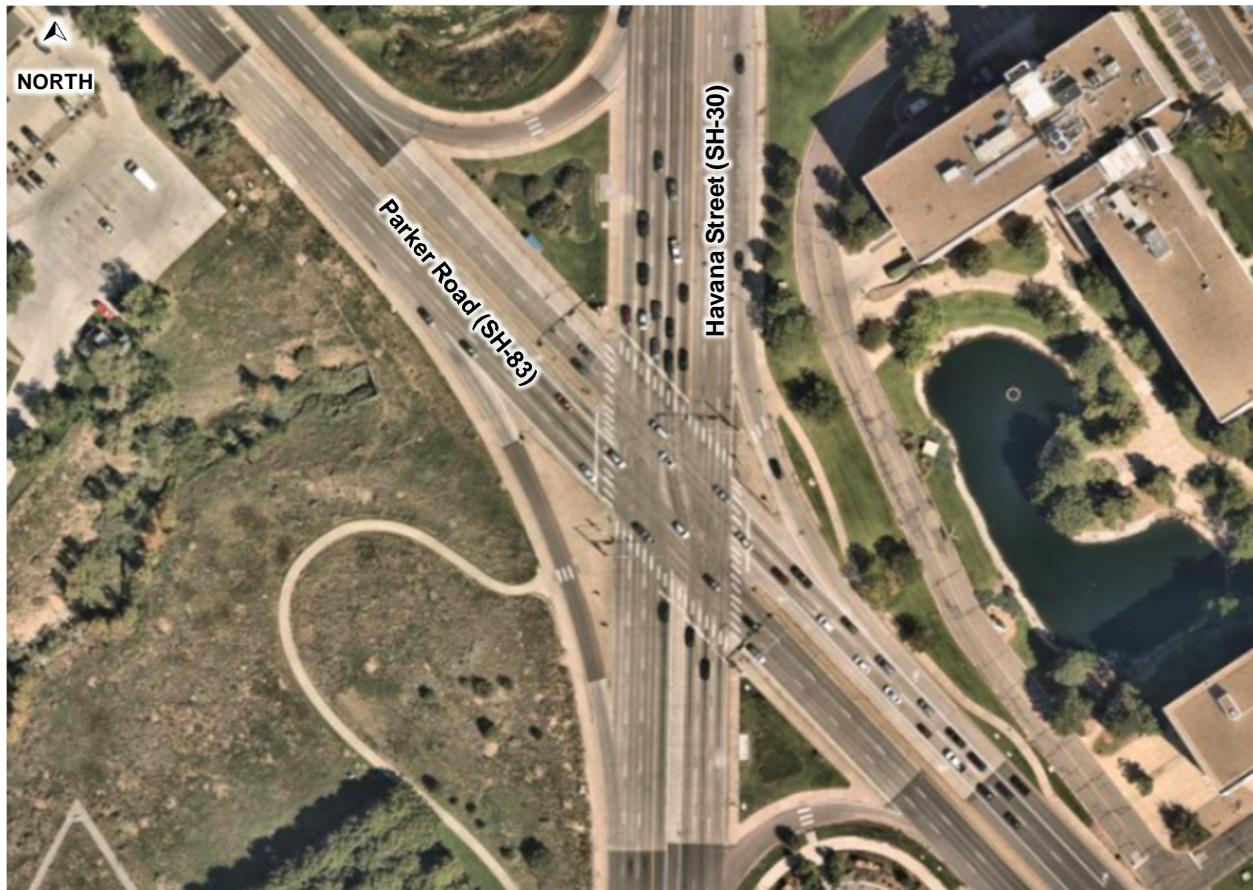
Parker Road (SH-83) extends primarily east/west with three through lanes in each direction and a two-way left turn lane (TWLTL) east of the studied project access along Parker Road and raised center median west of this access. The road runs diagonally from E-470 to Colorado Boulevard (CO-2) as a northeast/southwest roadway. However, in this study the roadway will be the east/west roadway in the intersection. The posted speed limit along Parker Road (SH-83) near the project site is 45 miles per hour. This roadway is classified as a R-A Regional Highway.

Havana Street (SH-30) is a north/south roadway with three through lanes in each direction. The posted speed limit along Havana Street (SH-30) is 45 miles per hour in both directions. As State Highway 30, it extends from Hamden Avenue to 6<sup>th</sup> Avenue as a NR-B Non-Rural Arterial.

Yale Avenue is an east/west roadway with two through lanes in each direction. The posted speed limit along Yale Avenue is 40 miles per hour. It extends from Elmira Street to Chamber Road as a Minor Arterial Roadway.



The signalized intersection of Parker Road (SH-83) and Havana Street (SH-30) operates with protected permissive left turn phasing on the east/west Parker Road (SH-83) legs and protected-only left turn phasing on the north/south Havana Street (SH-30) legs. The northbound approach provides a left turn lane and three through lanes with the outside through lane being a shared through/channelized right turn lane. The southbound approach provides dual left turn lanes and three through lanes with the outside through lane being a shared through/channelized right turn lane. The eastbound approach provides a left turn lane and three through lanes with the outside through lane being a shared through/channelized right turn lane. The westbound approach provides a left turn lane, two through lanes and a channelized right turn lane. An aerial photo of the existing intersection configuration is below.



*Parker Road (SH-83) and Havana Street (SH-30)*

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.

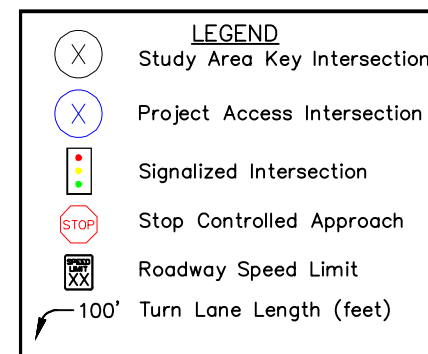
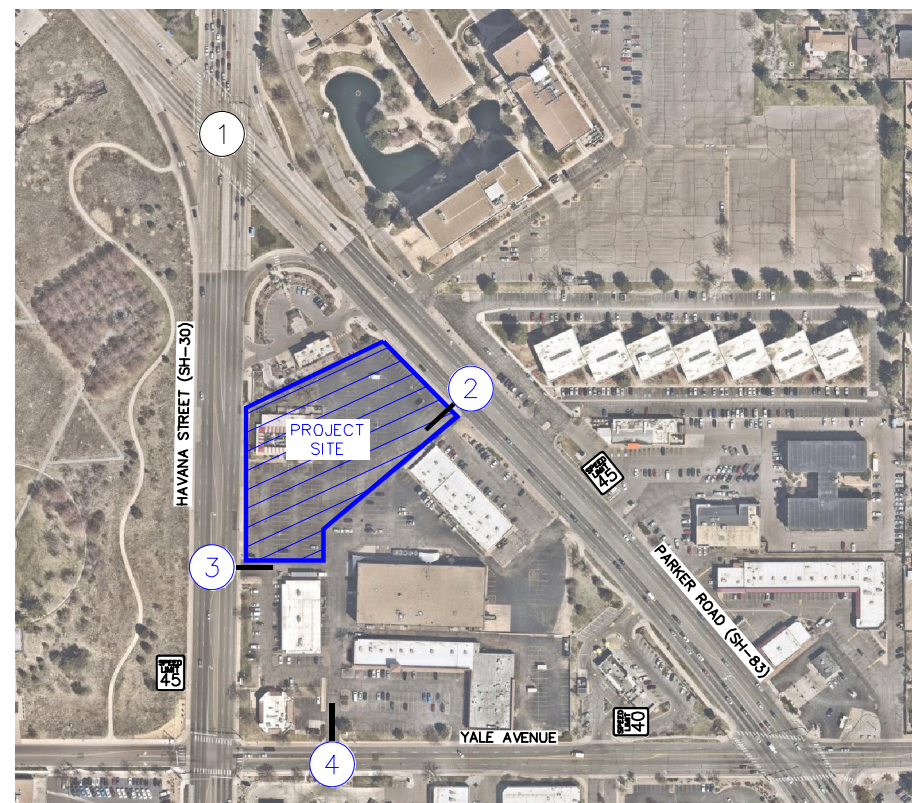
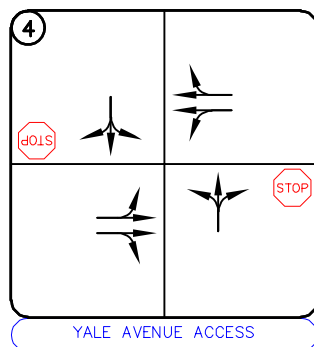
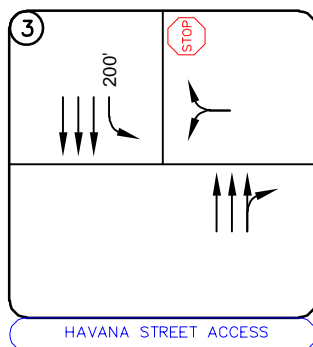
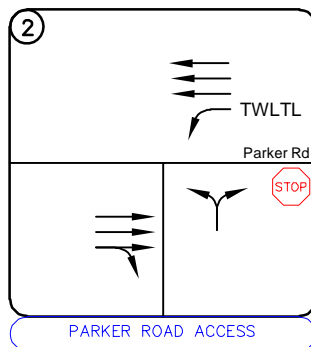
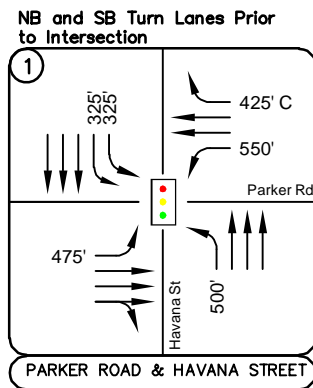


FIGURE 2  
QUIKTRIP 4263  
AURORA, COLORADO  
EXISTING GEOMETRY AND CONTROL

### 3.3 Existing Traffic Volumes

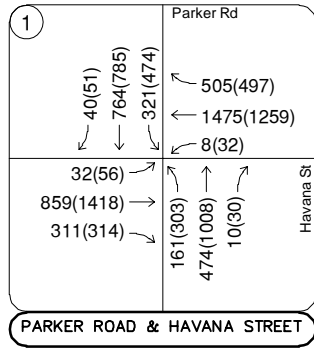
Existing turning movement counts were conducted at the study intersections on Tuesday, May 14, 2024 during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix B**.

### 3.4 Unspecified Development Traffic Growth

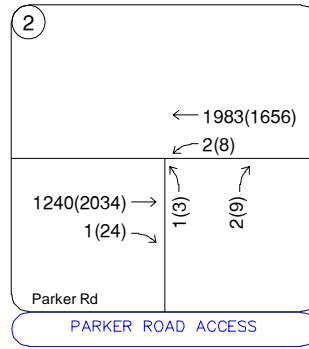
According to traffic projections from the Denver Regional Council of Governments (DRCOG) traffic model, the area surrounding the site is expected to have an average 30-year growth factor of 1.17. This growth factor equates to an annual growth rate of 0.53 percent. Additionally, according to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along Parker Road (SH-83) in the vicinity of the site is between 1.09 and 1.14 with an average of 1.11. This 20-year growth factor equates to annual growth rate of 0.54 percent. The 20-year growth factor along Havana Street (SH-30) in the vicinity of the site is between 1.09 and 1.10 with an average of approximately 1.10. This 20-year growth factor equates to annual growth rate of 0.45 percent. Traffic information from the CDOT Online Transportation Information System (OTIS) website and the DRCOG traffic projections are included in **Appendix C**. To be conservative, the highest expected growth rate of these sources of 0.54 percent was used. This annual growth rate was used to estimate near-term 2026 and long-term 2050 traffic volume projections at the key intersection. Background traffic volumes for 2026 and 2050 are shown in **Figures 4** and **5**, respectively.



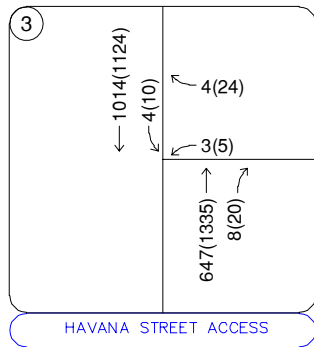
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7:30 to 8:30AM (4:45 to 5:45PM)



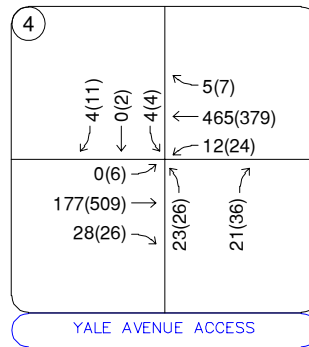
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7:30 to 8:30 AM  
(Wednesday, May 15, 2024)  
(4:30 to 5:30 PM)



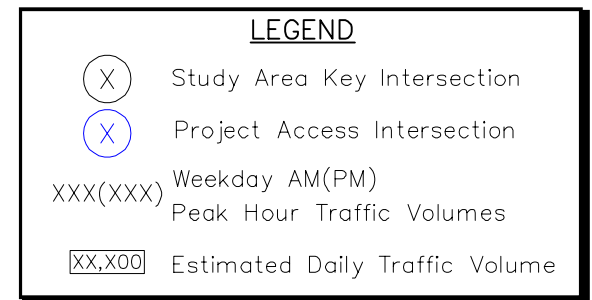
Tuesday, May 14, 2024  
7:15 to 8:15AM (4:30 to 5:30PM)



Tuesday, May 14, 2024  
7:30 to 8:30AM (4:30 to 5:30PM)



**FIGURE 3**  
**QUIKTRIP 4263**  
**AURORA, COLORADO**  
**2024 EXISTING TRAFFIC VOLUMES**



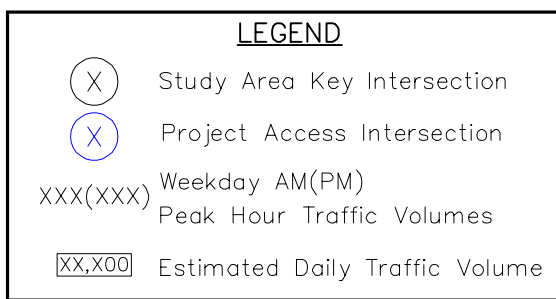
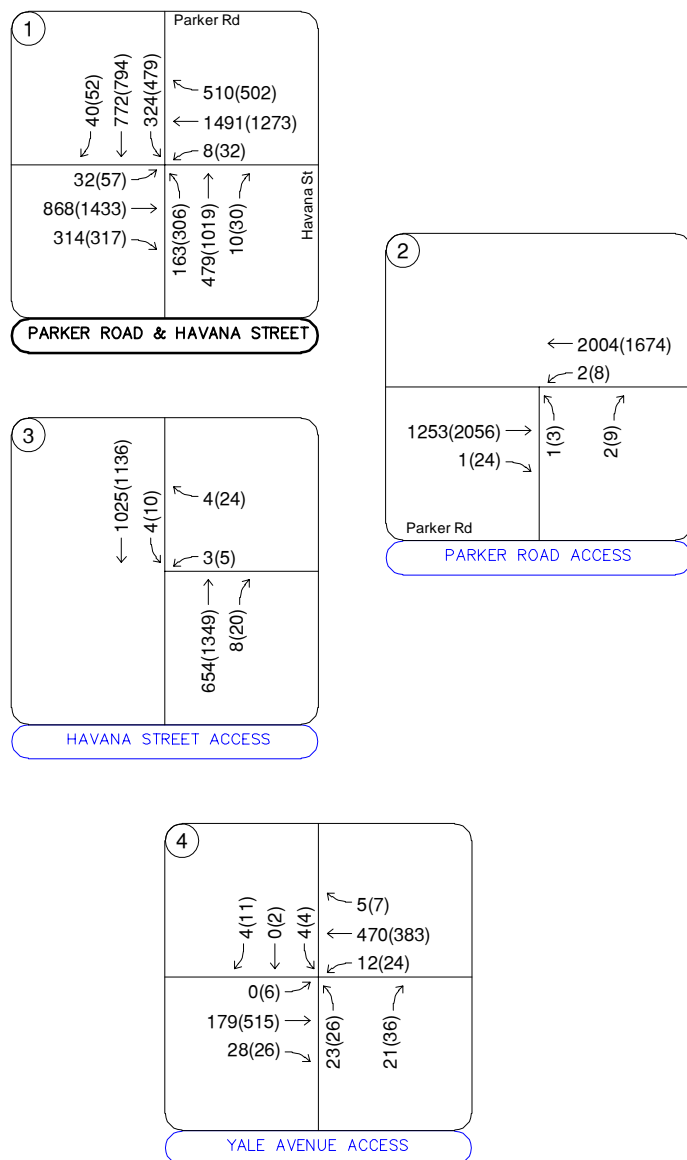


FIGURE 4  
QUIKTRIP 4263  
AURORA, COLORADO  
2026 BACKGROUND TRAFFIC VOLUMES



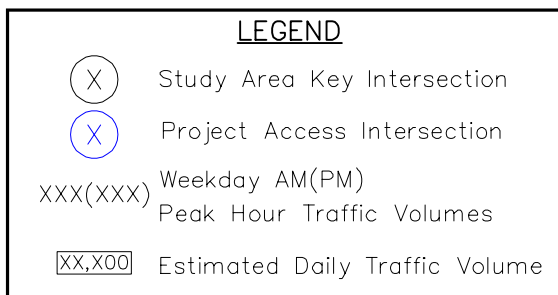
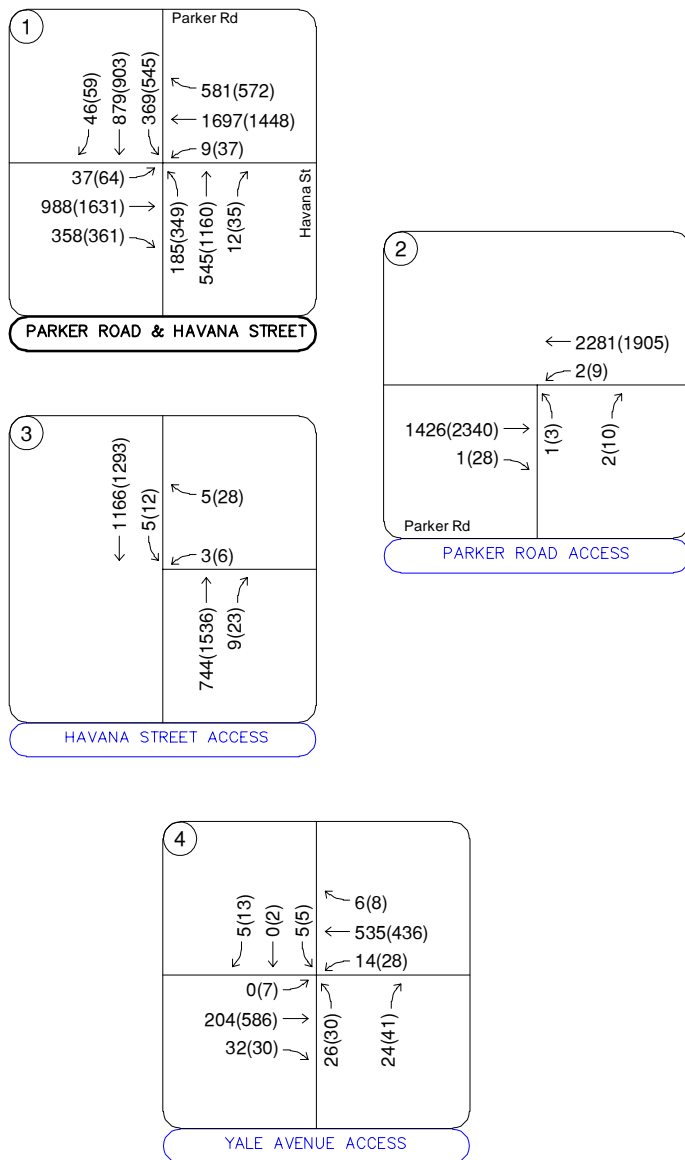


FIGURE 5  
QUIKTRIP 4263  
AURORA, COLORADO  
2050 BACKGROUND TRAFFIC VOLUMES

## 4.0 PROJECT TRAFFIC CHARACTERISTICS

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### 4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*<sup>1</sup> published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Convenience Store/Gas Station (ITE 945) for traffic associated with the development.

Since the project is a commercial development, pass-by trips are expected. These pass-by trips are vehicles already on the street network that will be attracted to the project site en route to a final destination. The pass-by percentages were obtained from the ITE “Trip Generation Manual”, Eleventh Edition which shows a morning peak hour pass-by percentage of 76 percent and an afternoon peak hour pass-by percentage of 75 percent.

With 18 fueling positions and an approximate 5,312 square foot convenience store, QuikTrip 4263 is expected to generate approximately 4,628 daily weekday driveway trips, with 487 of these trips occurring during the morning peak hour and 410 trips occurring during the afternoon peak hour. Accounting for pass-by, expected net new (non pass-by) trips to the surrounding street network results in approximately 1,158 weekday daily trips, of which 117 trips and 102 trips are anticipated during the weekday morning and afternoon peak hours, respectively. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11<sup>th</sup> Edition – Volume 1: User’s Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the site. The trip generation worksheets are included in **Appendix D**.

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<sup>1</sup> Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

**Table 1 – QuikTrip 4263 Traffic Generation**

Convenience Store/Gas Station (ITE 945) 18 FP/5,312 SF	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Non Pass-By Trips	1,158	58	59	117	51	51	102
Pass-By Trips	3,470	185	185	370	154	154	308
<b>Total Project Trips</b>	<b>4,628</b>	<b>243</b>	<b>244</b>	<b>487</b>	<b>205</b>	<b>205</b>	<b>410</b>

#### 4.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development is illustrated in **Figure 6**.

Since the project is a commercial development, a certain amount of traffic attracted to the gas station will already be passing by the site. This pass-by distribution is a means to quantify the amount of traffic arriving to the site from a given direction and then leaving the site in the same original direction of travel, continuing the driver's trip. The expected weekday morning and afternoon peak hour pass-by trip distributions were calculated based on actual traffic volumes at the intersection of Parker Road (SH-83) and Havana Street (SH-30). Directional differences in the morning and afternoon peak hours were accounted for in the pass-by distributions as shown in **Figures 7** and **8**, respectively.

#### 4.3 Traffic Assignment & Total (Background Plus Project) Traffic

QuikTrip 4263 traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. The non pass-by project traffic assignment is shown in **Figure 9** while the pass-by project traffic assignment is shown in **Figure 10**. Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2026 buildout horizon and long-term 2050 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2026 and 2050 horizon years in **Figures 11** and **12**, respectively.



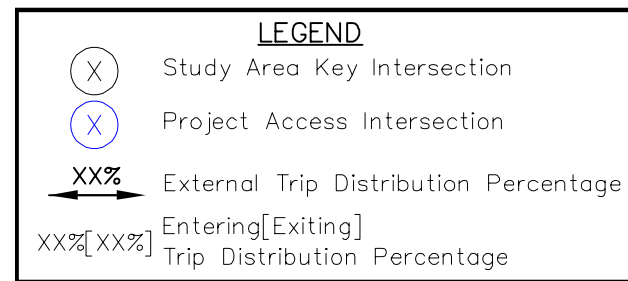
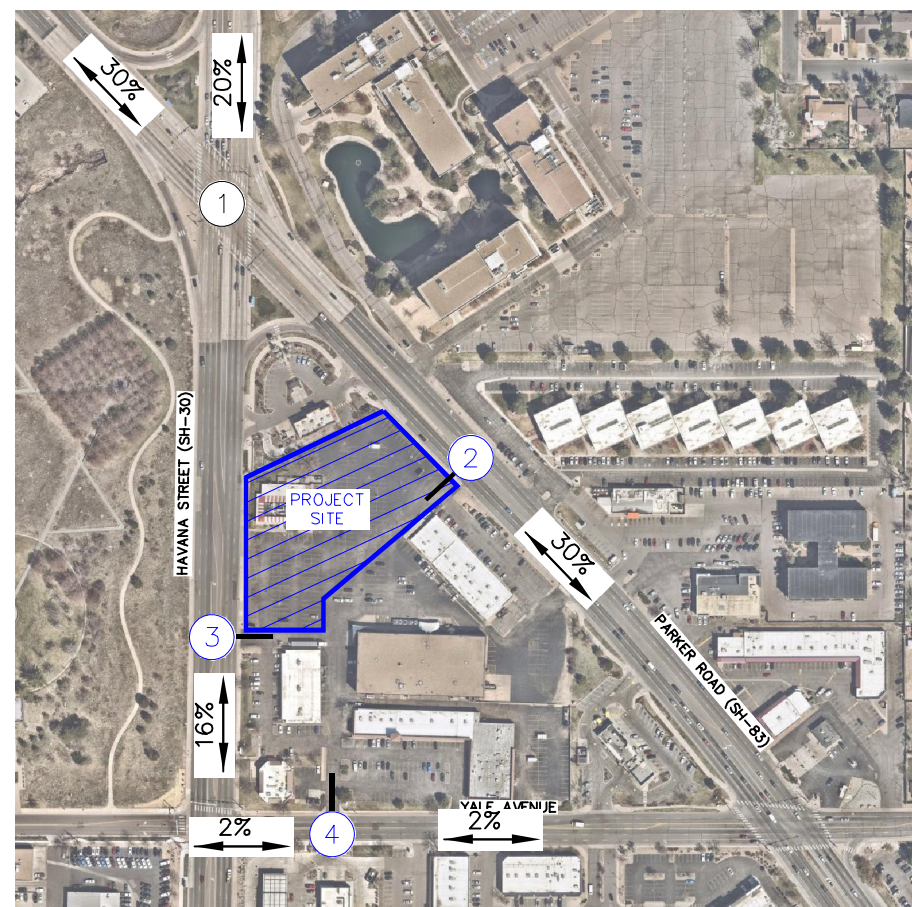
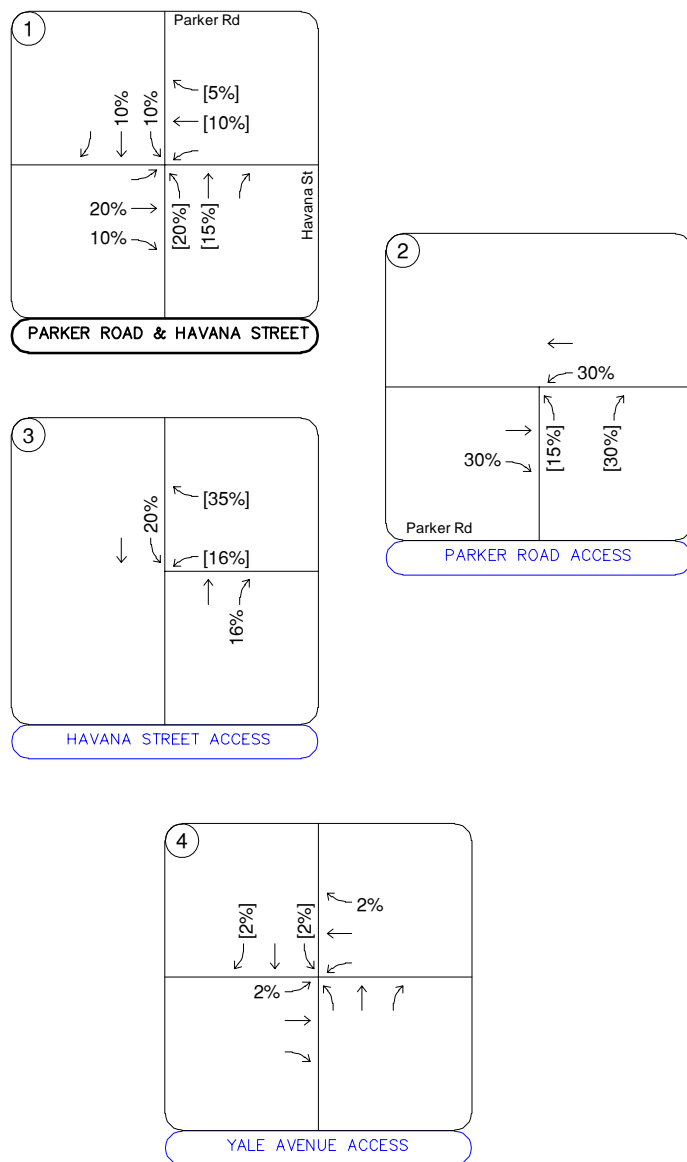


FIGURE 6  
QUIKTRIP 4263  
AURORA, COLORADO  
NON PASS-BY PROJECT TRIP DISTRIBUTION

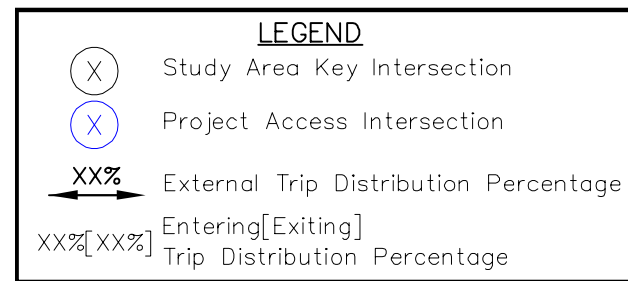
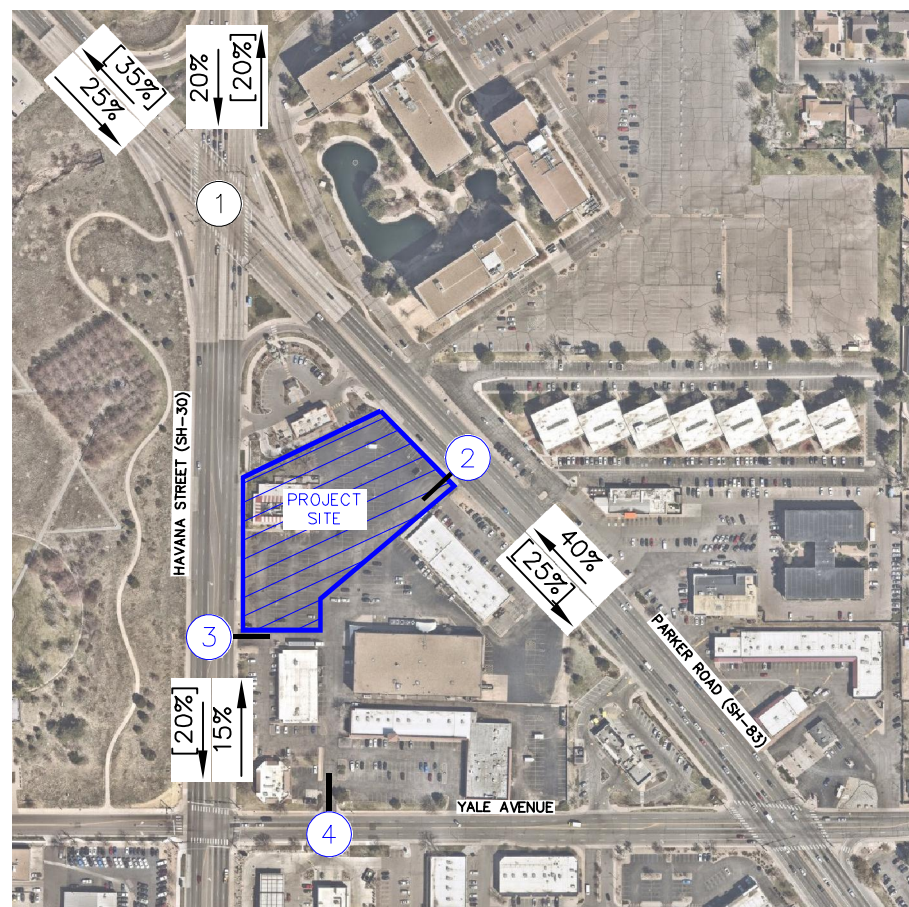
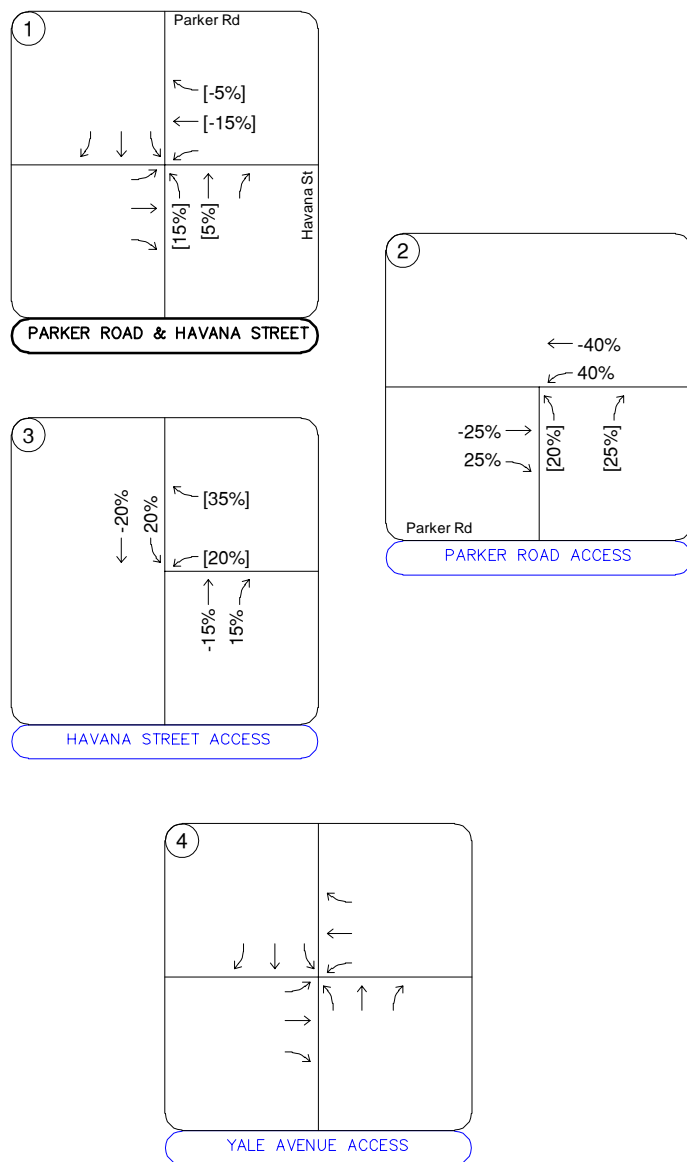


FIGURE 7  
QUIKTRIP 4263  
AURORA, COLORADO  
AM PASS-BY PROJECT TRIP DISTRIBUTION



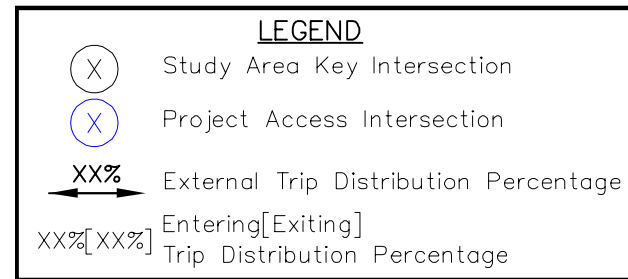
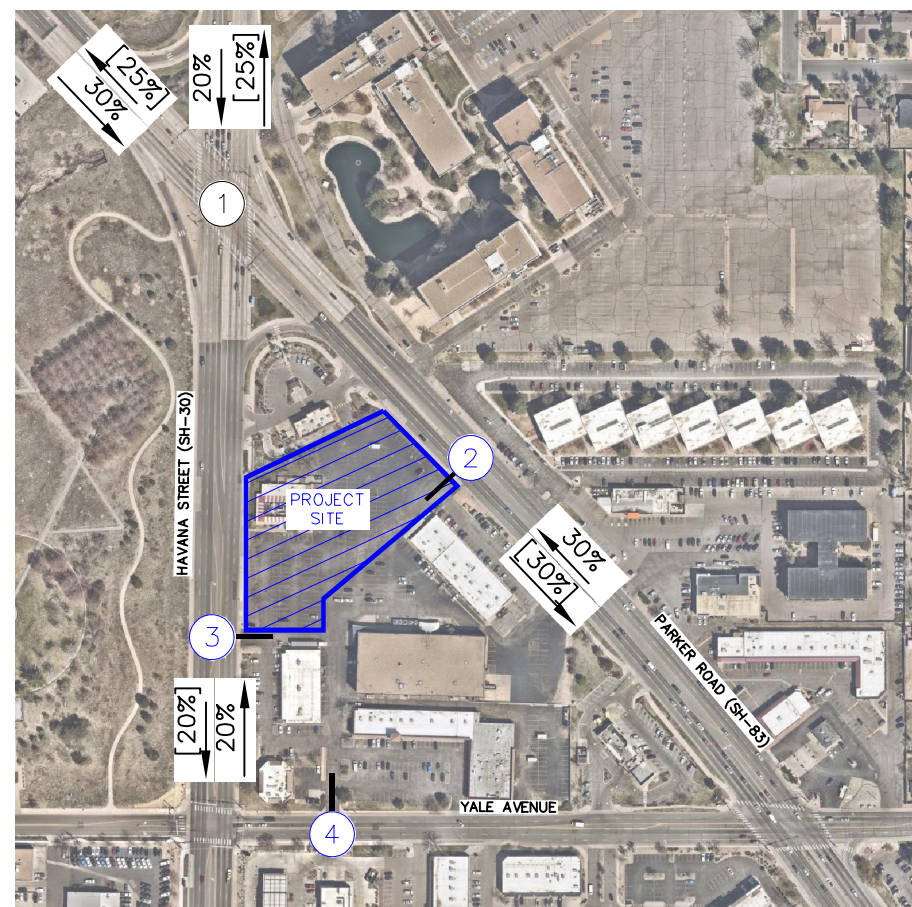
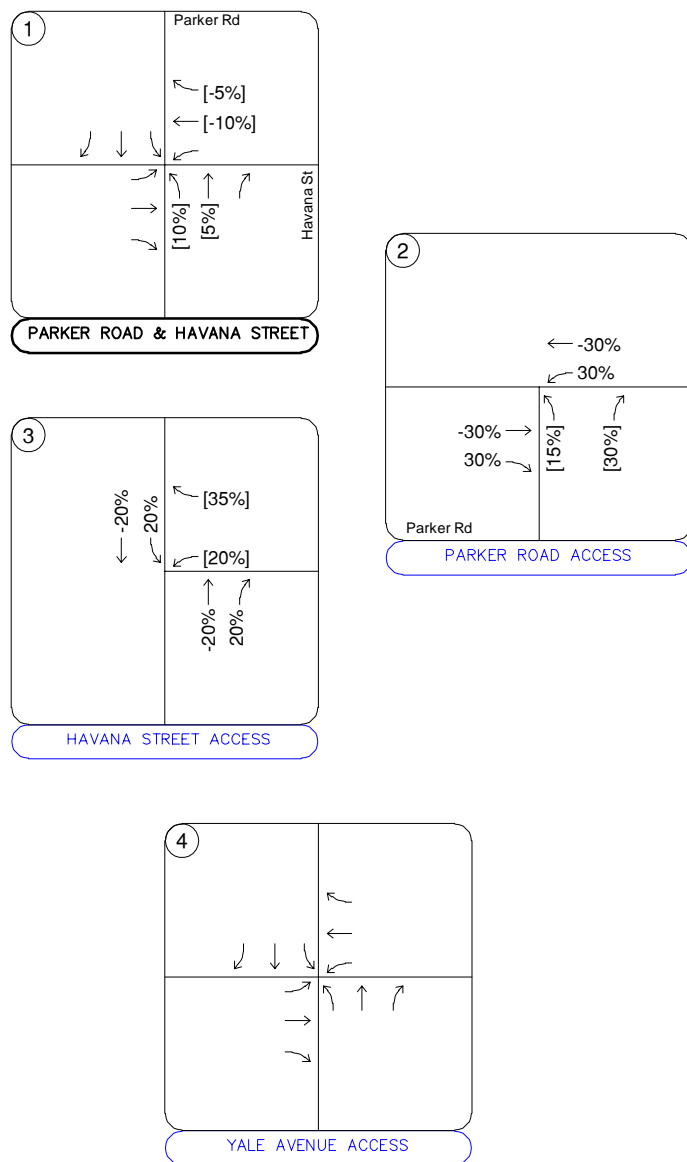
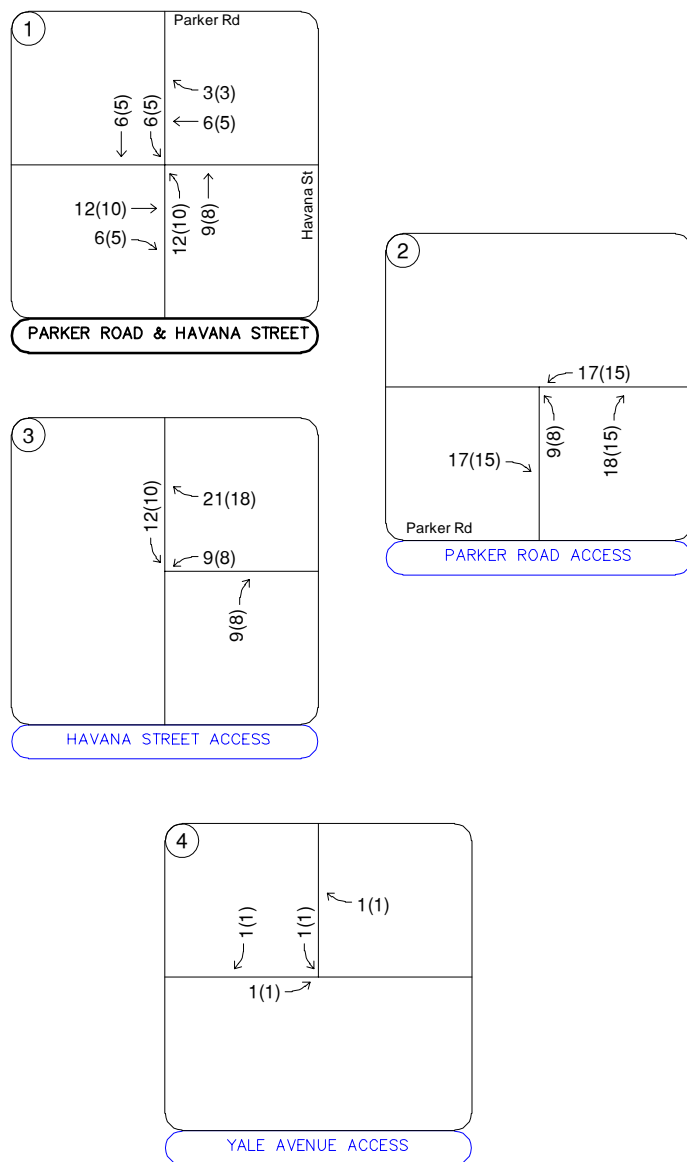


FIGURE 8  
QUIKTRIP 4263  
AURORA, COLORADO  
PM PASS-BY PROJECT TRIP DISTRIBUTION

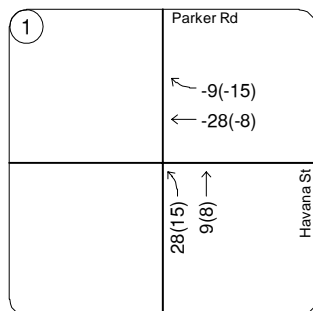




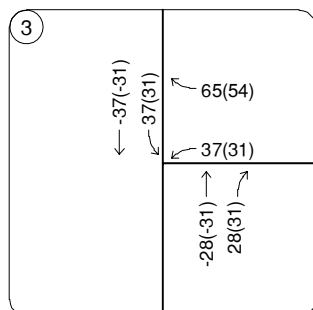
# LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)
- Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

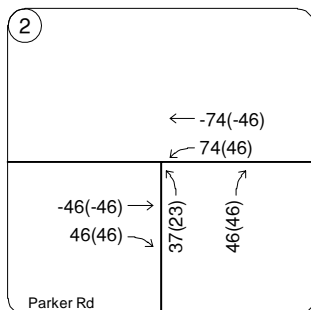
FIGURE 9  
QUIKTRIP 4263  
AURORA, COLORADO  
NON PASS-BY PROJECT TRAFFIC ASSIGNMENT



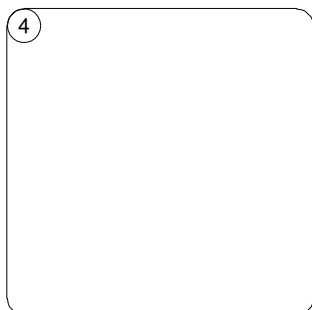
PARKER ROAD & HAVANA STREET



HAVANA STREET ACCESS



PARKER ROAD ACCESS



YALE AVENUE ACCESS

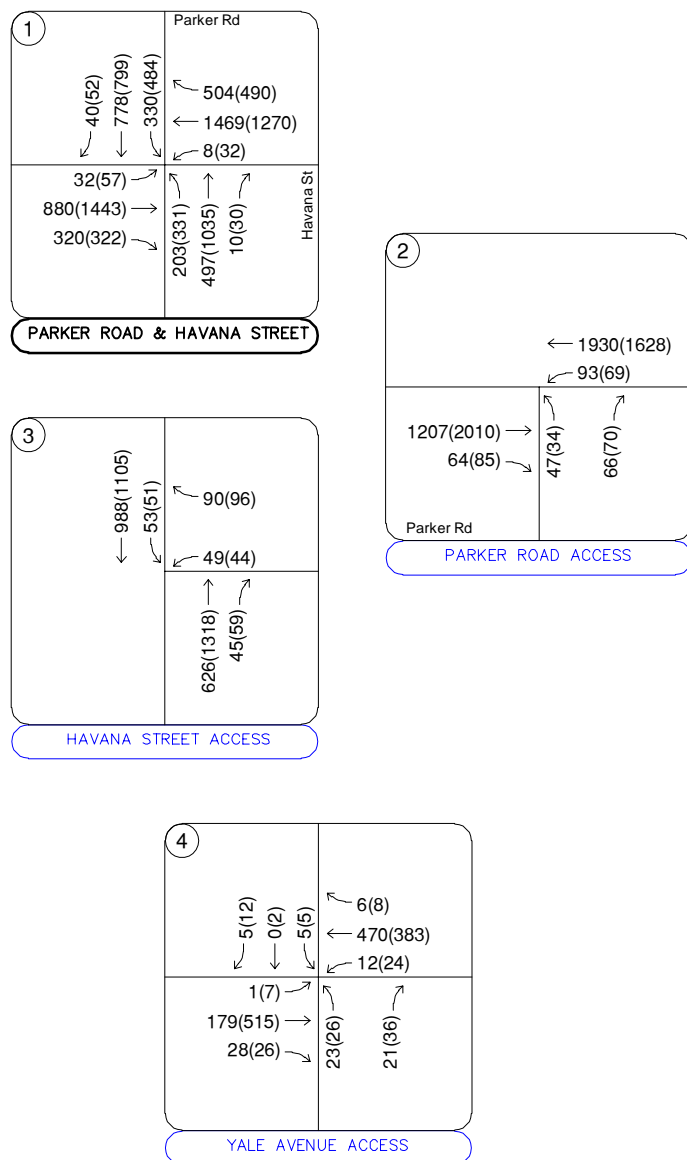


# LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- [xx,x00] Estimated Daily Traffic Volume

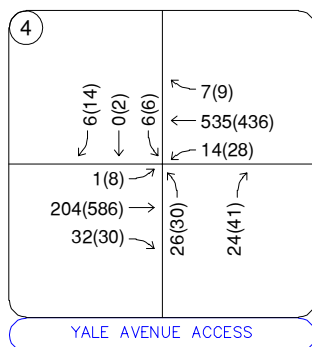
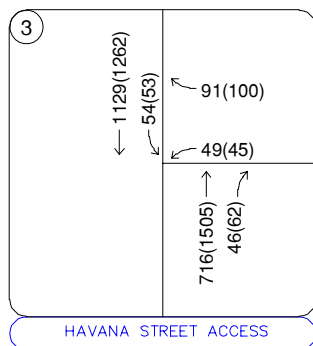
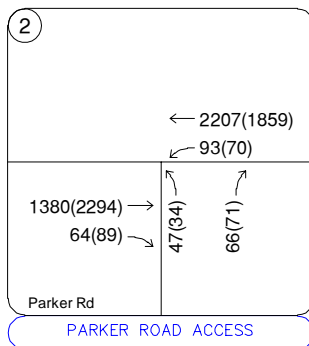
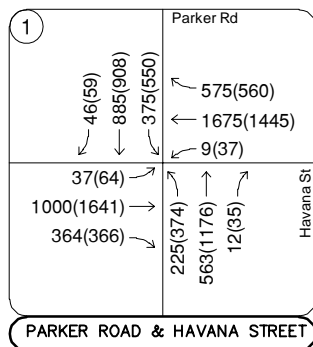
FIGURE 10  
QUIKTRIP 4263  
AURORA, COLORADO  
PASS-BY PROJECT TRAFFIC ASSIGNMENT





LEGEND	
(X)	Study Area Key Intersection
(X)	Project Access Intersection
xxx(xxx)	Weekday AM(PM)
	Peak Hour Traffic Volumes
xx.x00	Estimated Daily Traffic Volume

FIGURE 11  
QUIKTRIP 4263  
AURORA, COLORADO  
2026 TOTAL TRAFFIC VOLUMES



### LEGEND

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

FIGURE 12  
QUIKTRIP 4263  
AURORA, COLORADO  
2050 TOTAL TRAFFIC VOLUMES

## 5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2026 and 2050 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual (HCM)*<sup>2</sup>.

### 5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). According to City of Aurora guidelines for signalized intersections, individual movements may be allowed to fall to LOS E, but in most cases the overall intersection must operate (or be projected to operate) at a LOS D or better during morning and afternoon peak periods. If the existing LOS for an intersection is less than LOS D, potential alternatives to improve the intersection to achieve LOS D or to maintain the existing critical lane volume with the addition of site generated traffic are provided. Minor movements at unsignalized intersections, such as left turns onto a major arterial from a side street, may be allowed to fall below LOS D pending the specific conditions. Movements which have a light traffic demand as well as a viable travel alternative may be allowed to fall below LOS D. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

**Table 2 – Level of Service Definitions**

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

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

<sup>2</sup> Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.



Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

## 5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix E**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2**. Existing peak hour factors were utilized in the analysis. The existing heavy vehicle percentages obtained from the turning movement counts were also used in each horizon year. The signalized intersection analysis utilizes the observed cycle lengths with optimized phasing and timing. Based on increased national attention given to establishing appropriate yellow and all-red clearance intervals to improve intersection safety, these have been calculated and are applied for approaches at the signalized intersections. The increase in yellow and all red time sacrifices intersection capacity for improved safety. Synchro traffic analysis software was used to analyze the signalized and unsignalized key intersections for HCM level of service.

### **Parker Road (SH-83) & Havana Street (SH-30)**

The signalized intersection of Parker Road (SH-83) and Havana Street (SH-30) operates with protected permissive left turn phasing on the east/west Parker Road (SH-83) legs and protected-only left turn phasing on the north/south Havana Street (SH-30) legs. Of note, the southbound and northbound right turn movements occur prior to the intersection. Therefore, these volumes are not included in the intersection analysis. The intersection currently operates at LOS D during the morning and afternoon peak hours based on the existing intersection configuration and control. With project traffic, the intersection is expected to continue operating acceptably at LOS D during both peak hours. However, if 2050 volumes are realized, the second northbound left turn lane that is currently striped out is recommended to be striped to provide dual left turn lanes. The dual left turn lanes are recommended to operate with protected-only left turn phasing. Additionally, the third westbound through lane may need to be implemented within the existing pavement shoulder. Therefore, the westbound right turn lane will convert to a shared through/right turn lane

and the southbound to westbound acceleration will become the third receiving through lane. With these recommendations, the intersection is anticipated to operate acceptably. **Table 3** provides the results of the LOS analysis conducted at this intersection.

**Table 3 – Parker Road (SH-83) & Havana Street (SH-30) LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2024 Existing</b>	<b>37.1</b>	<b>D</b>	<b>44.0</b>	<b>D</b>
Eastbound Approach	13.1	B	25.1	C
Eastbound Left	25.1	C	29.5	C
Eastbound Through	17.0	B	30.3	C
Eastbound Right	1.0	A	1.0	A
Westbound Approach	30.8	C	40.7	D
Westbound Left	14.8	B	23.6	C
Westbound Through	41.4	D	57.2	E
Westbound Right	0.0	A	0.0	A
Northbound Approach	60.5	E	57.5	E
Northbound Left	82.6	F	68.4	E
Northbound Through	53.0	D	54.2	D
Northbound Right	1.0	A	1.0	A
Southbound Approach	61.7	E	61.7	E
Southbound Left	67.1	F	69.4	E
Southbound Through	59.4	E	57.0	E
Southbound Right	0.0	A	0.0	A
<b>2026 Background</b>	<b>37.8</b>	<b>D</b>	<b>44.7</b>	<b>D</b>
Eastbound Approach	13.1	B	25.3	C
Eastbound Left	25.4	C	30.0	C
Eastbound Through	17.0	B	30.5	C
Eastbound Right	1.0	A	1.0	A
Westbound Approach	31.2	C	41.6	D
Westbound Left	14.8	B	23.8	C
Westbound Through	41.9	D	58.4	E
Westbound Right	0.0	A	0.0	A
Northbound Approach	61.7	E	58.5	E
Northbound Left	86.2	F	70.2	E
Northbound Through	53.4	D	55.0	E
Northbound Right	1.0	A	1.0	A
Southbound Approach	63.5	E	62.5	E
Southbound Left	66.9	E	71.0	E
Southbound Through	62.0	E	57.4	E
Southbound Right	0.0	A	0.0	A

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2026 Background Plus Project</b>	<b>39.9</b>	<b>D</b>	<b>45.7</b>	<b>D</b>
Eastbound Approach	13.8	B	26.0	C
Eastbound Left	26.0	C	30.5	C
Eastbound Through	18.0	B	31.5	C
Eastbound Right	1.0	A	1.0	A
Westbound Approach	32.3	C	43.0	D
Westbound Left	15.6	B	24.5	C
Westbound Through	43.4	D	60.0	E
Westbound Right	0.0	A	0.0	A
Northbound Approach	58.0	E	58.1	E
Northbound Left	79.5	E	73.5	E
Northbound Through	49.3	D	53.1	D
Northbound Right	1.0	A	1.0	A
Southbound Approach	71.2	E	64.4	E
Southbound Left	61.3	E	70.6	E
Southbound Through	75.4	E	60.6	E
Southbound Right	0.0	A	0.0	A
<b>2050 Background</b>	<b>48.1</b>	<b>D</b>	<b>61.0</b>	<b>E</b>
Eastbound Approach	13.8	B	28.4	C
Eastbound Left	30.3	C	32.6	C
Eastbound Through	17.9	B	34.3	C
Eastbound Right	1.0	A	1.0	A
Westbound Approach	45.0	D	60.3	E
Westbound Left	15.2	B	26.5	C
Westbound Through	60.6	E	85.0	F
Westbound Right	0.0	A	0.0	A
Northbound Approach	73.8	E	89.0	F
Northbound Left	125.0	F	108.0	F
Northbound Through	56.4	E	83.3	F
Northbound Right	1.0	A	1.0	A
Southbound Approach	76.7	E	79.1	E
Southbound Left	70.4	E	96.3	F
Southbound Through	79.3	F	68.7	E
Southbound Right	0.00	A	0.0	A



Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2050 Background Plus Project #</b>	<b>38.1</b>	<b>D</b>	<b>45.3</b>	<b>D</b>
Eastbound Approach	13.3	B	33.4	C
Eastbound Left	21.1	C	29.5	C
Eastbound Through	17.4	B	40.8	D
Eastbound Right	1.0	A	1.0	A
Westbound Approach	31.3	C	37.0	D
Westbound Left	14.9	B	30.1	C
Westbound Through	42.2	D	51.4	D
Westbound Right	0.0	A	0.0	A
Northbound Approach	64.5	E	60.6	E
Northbound Left	78.2	E	46.2	D
Northbound Through	59.0	E	65.2	E
Northbound Right	1.0	A	1.0	A
Southbound Approach	61.3	E	57.3	E
Southbound Left	69.8	E	74.5	E
Southbound Through	57.7	E	47.0	D
Southbound Right	0.0	A	0.0	A

# = Dual Northbound Lefts, Three WB Through Lanes

## Project Accesses

A project access analysis has been provided for the three existing full movement accesses along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue that currently serve the existing overall shopping center. The project access intersections currently provide stop control on the approaches exiting the existing development. Of note, a R1-1 "STOP" sign is recommended to be placed on the southbound approach, exiting the site onto Yale Avenue. **Table 4** provides the results of the level of service analysis for the project access intersections. As shown in the table, the three project access intersections are anticipated to have all movements operating with acceptable LOS D or better during the peak hours in the long-term horizon with the planned configuration.

**Table 4 – Project Access Level of Service Results**

Intersection	2026 Total				2050 Total			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>Parker Road Access</b>								
Northbound Approach	15.5	C	19.8	C	17.9	C	24.1	C
Westbound Left	14.9	B	21.1	C	16.8	C	26.5	D
<b>Havana Street Access</b>								
Westbound Approach	12.0	B	14.5	B	11.2	B	14.2	B
Southbound Left	9.6	A	12.0	B	9.5	A	12.7	B
<b>Yale Avenue Access</b>								
Northbound Approach	10.7	B	12.1	B	11.4	B	13.4	B
Eastbound Left	8.4	A	8.2	A	8.6	A	8.3	A
Westbound Left	7.6	A	8.1	A	7.7	A	8.3	A
Southbound Approach	12.1	B	11.7	B	13.1	B	12.5	B

### 5.3 CDOT Access Permit Determination

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of the Parker Road (SH-83) and east leg of the Havana Street (SH-30) project accesses are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections accesses as development occurs.

However, the addition of project traffic on the all four legs of Parker Road (SH-83) and Havana Street (SH-30) intersection is not anticipated to increase existing access traffic volumes by more than 20 percent. Therefore, a CDOT access permit is not anticipated to be required in association with this project at the Parker Road (SH-83) and Havana Street (SH-30) intersection.

### 5.4 Auxiliary Turn Lane Warrant & Length Analysis

Auxiliary turn lanes along CDOT controlled highways are to be implemented based on volume threshold requirements set forth in the State Highway Access Code. Further, turn lane lengths should be designed based on the State Highway Access Code. Parker Road (SH-83) is classified as a Regional Highway (R-A) with a posted speed limit of 45 miles per hour. Whereas Havana Street (SH-30) is classified as a Non-Rural Arterial (NR-B) with a posted speed limit of 45 miles per hour. Additionally, the City of Aurora defaults to the Colorado Department of Transportation (CDOT) State Highway Access Code guidelines to determine if turn lanes are warranted at studied intersections. CDOT classifies their state highways based on roadway types. It is believed that Yale Avenue matches the characteristics of a CDOT Non-Rural Arterial (NR-C) roadway.

Of note, since Parker Road (SH-83) and Havana Street (SH-30) both provide three through lanes in each direction near the project accesses, the auxiliary right turn lane can be absorbed within the third through lane per CDOT guidelines. Additionally, southbound left turn lanes are already provided along Parker Road (SH-83) and Havana Street (SH-30) at the project access intersections within the existing two-way left turn center lane.

However, the Yale Avenue access intersection turn lane guidelines will follow the State Highway Access Code for category NR-C roadways. The following threshold applies for determining the need for a turn lane:

- A left turn lane with storage length plus taper length is required for any access with a projected peak hour left ingress turning volume greater than 25 vehicles per hour (vph). If the posted speed is greater than 40 mph, a deceleration lane and taper is required for any access with a projected peak hour left ingress turning volume greater than 10 vph.
- A right turn lane with storage length plus taper is required for any access with a projected peak hour right ingress turning volume greater than 50 vehicles per hour. If the posted speed limit is greater than 40 miles per hour, a right turn lane deceleration lane and taper is required for any access with a project peak hour right ingress turning volume greater than 25 vehicles per hour.

Based on the 2050 traffic volume projections, turn lane requirements at the project access intersection along Yale Avenue are as follows:

- An eastbound left turn lane **is not** warranted along Yale Avenue at the existing access based on projected 2050 background plus project traffic volumes being eight (8) eastbound left turns during the peak hour and the threshold being 25 vph.
- A westbound right turn lane **is not** warranted along Yale Avenue at the existing access based on projected 2050 background plus project traffic volumes being nine (9) westbound right turns during the peak hour and the threshold being 50 vph.


### 5.5 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95<sup>th</sup> percentile queue lengths. Results are shown in the following **Table 5** with calculations provided within the level of service operational sheets of **Appendix E** for unsignalized intersections and **Appendix F** for signalized intersections.

**Table 5 – Turn Lane Queuing Analysis Results**

Intersection Turn Lane	Existing Turn Lane Length	2026 Calculated Queue	2026 Recommended Length	2050 Calculated Queue	2050 Recommended Length
<b>Parker Rd &amp; Havana St</b>					
Eastbound Left	475'	48'	475'	56'	475'
Westbound Left	550'	25'	550'	25'	550'
Westbound Right	425'	25'	425'	-	-
Northbound Left	500'	425'	500'	192' DL	500'/ <b>375'</b>
Southbound Left	325' DL	296' DL	325' DL	335' DL	325' DL
<b>Parker Road Access</b>					
Westbound Left	TWLTL	TWLTL	TWLTL	TWLTL	TWLTL
<b>Havana Street Access</b>					
Southbound Left	200'	25'	25'	25'	25'

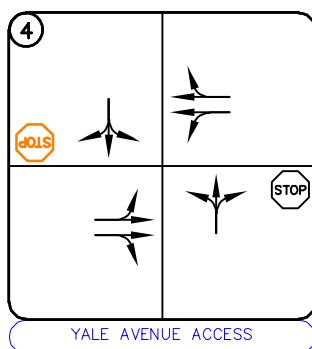
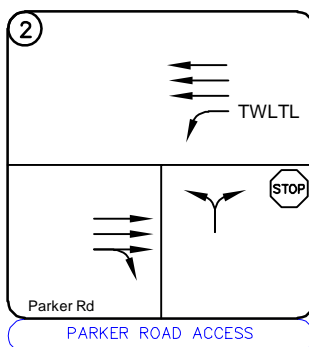
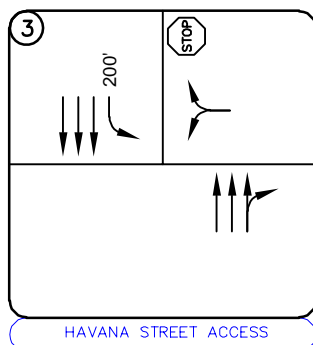
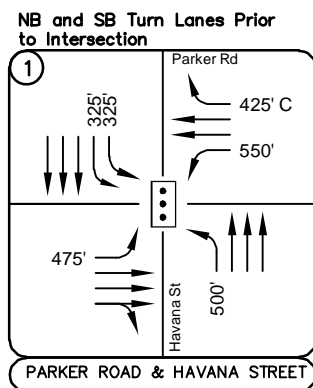
DL = Dual Left Turn Lane; **Blue** Text = Recommendation, TWLTL= Two-Way Left Turn Lane



The vehicle queues are all anticipated to remain within the existing turn lane lengths though the short-term 2026 horizon. However, if 2050 volumes are realized, then the second northbound left turn lanes is recommended to be striped to provide a length of 375 feet at the intersection of Parker Road (SH-83) and Havana Street (SH-30).

### 5.6 Improvement Summary

Based on the results of the intersection operational and vehicle queuing analysis, the key intersection recommended improvements and control are shown in **Figure 13** for the 2026 horizon and **Figure 14** for the 2050 horizon.

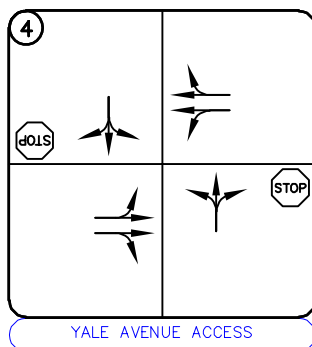
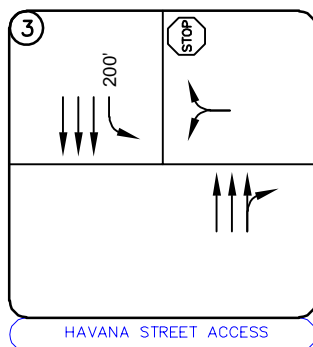
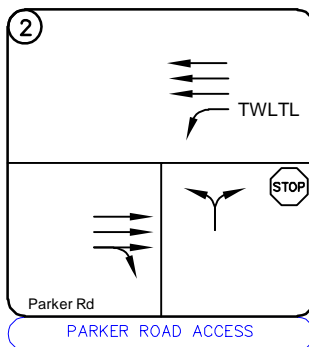
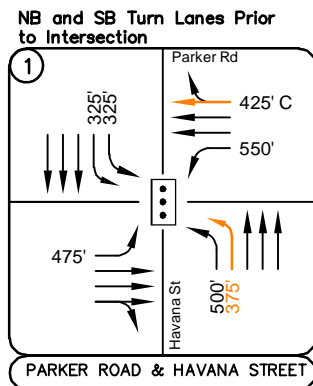


**LEGEND**

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- STOP Stop Controlled Approach
- Improvement
- 100' Turn Lane Length (feet)

FIGURE 13  
QUIKTRIP 4263  
AURORA, COLORADO  
2026 RECOMMENDED GEOMETRY AND CONTROL





**LEGEND**

- (X) Study Area Key Intersection
- (X) Project Access Intersection
- Signalized Intersection
- Stop Controlled Approach
- Improvement
- 100' Turn Lane Length (feet)

FIGURE 14  
QUIKTRIP 4263  
AURORA, COLORADO  
2050 RECOMMENDED GEOMETRY AND CONTROL

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

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Based on the analysis presented in this report, Kimley-Horn believes QuikTrip 4263 will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following conclusions and recommendations:

- The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the south leg of the Parker Road (SH-83) and east leg of the Havana Street (SH-30) project accesses are anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at these two intersections accesses as development occurs.
- Direct access to the site will utilize the three existing full movement accesses along Parker Road (SH-83), Havana Street (SH-30), and Yale Avenue that currently serve the overall shopping center. The project access intersections along Havana Street and Parker Road currently provide stop control on the approaches exiting the existing development; therefore, a R1-1 “STOP” sign is recommended to be placed on the southbound approach, exiting the site onto Yale Avenue.
- If 2050 volumes are realized, the second northbound left turn lane that is currently striped out at the Parker Road (SH-83) and Havana Street (SH-30) is recommended to be striped to provide dual left turn lanes. The dual left turn lanes are recommended to operate with protected-only left turn phasing. Additionally, the third westbound through lane may need to be implemented within the existing pavement shoulder. Therefore, the westbound right turn lane will convert to a shared through/right turn lane and the southbound to westbound acceleration will become the third receiving through lane.
- Any onsite or offsite improvements should be incorporated into the Civil Drawings and conform to standards of the City of Aurora, Colorado Department of Transportation, and the Manual on Uniform Traffic Control Devices (MUTCD) – 11th Edition, 2023.



# APPENDICES

# APPENDIX A

## Conceptual Site Plan

PRELIMINARY

FOR REVIEW ONLY  
NOT FOR  
CONSTRUCTION

**Kimley»Horn**  
Kimley-Horn and Associates, Inc.

PROJECT NO.: 096888046

**Kimley»Horn**

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QuikTrip No. 4263

PARKER RD & HAVANA  
AURORA, CO



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PROTOTYPE: P-116

DIVISION:

VERSION: 001

DESIGNED BY:

DRAWN BY:

REVIEWED BY:

REV DATE DESCRIPTION

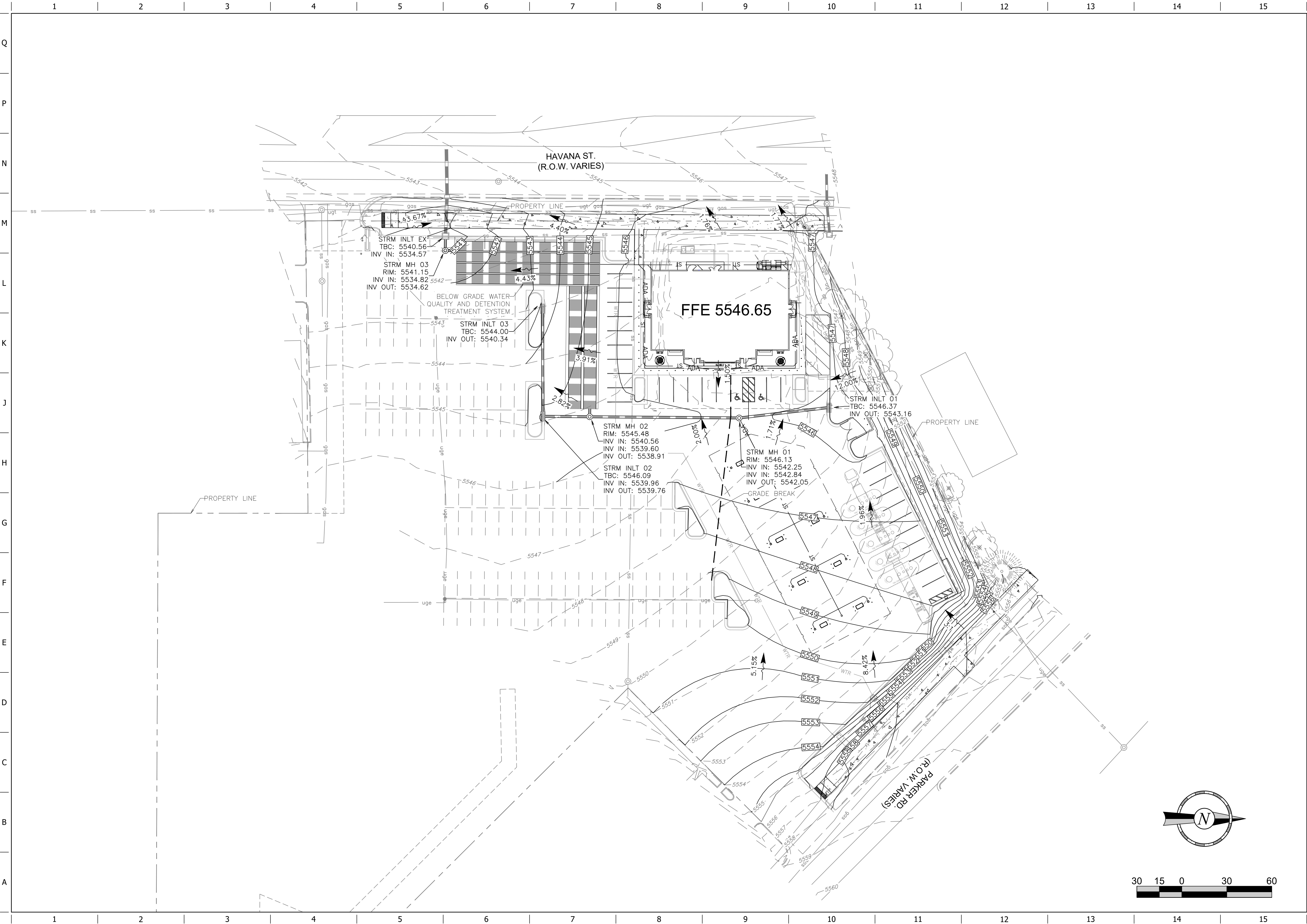
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SHEET TITLE:

GRADING PLAN

SHEET NUMBER:

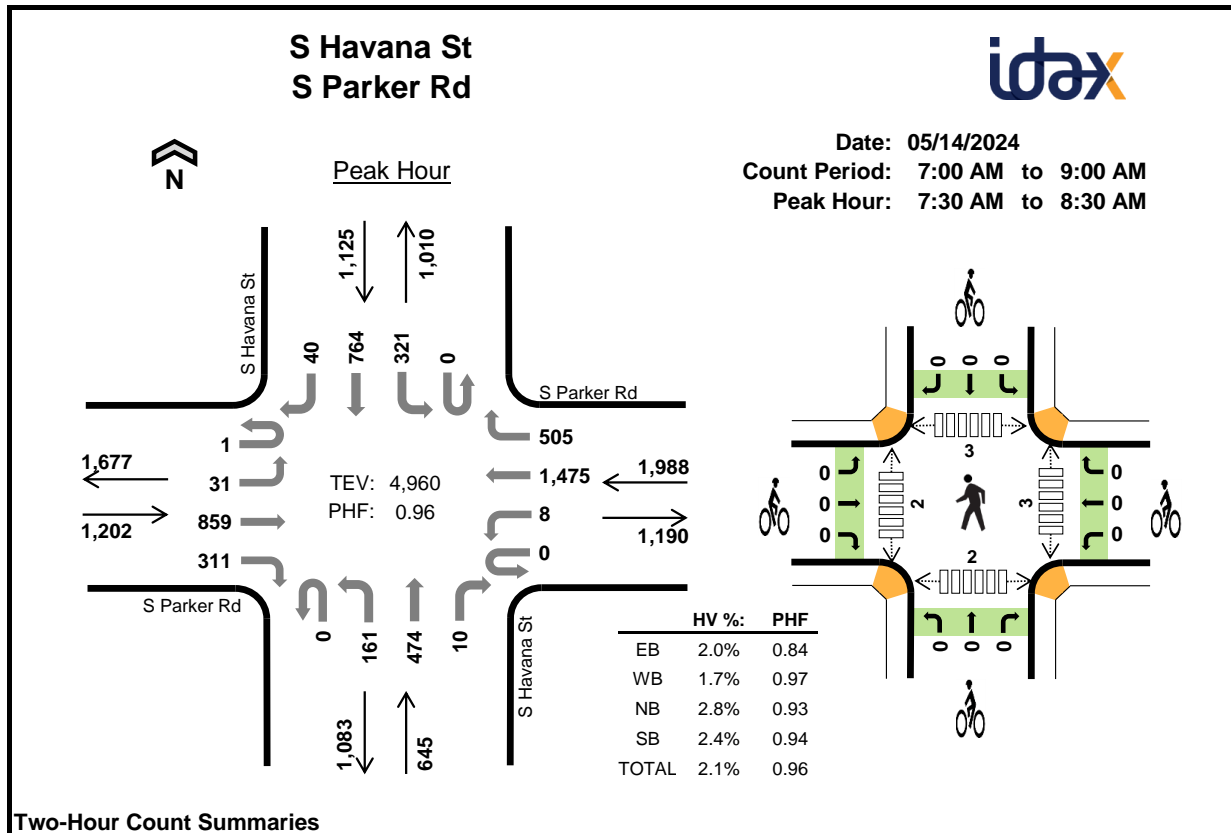
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# APPENDIX B

## Intersection Count Sheets



**Two-Hour Count Summaries**

Interval Start		S Parker Rd				S Parker Rd				S Havana St				S Havana St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	3	127	54	0	2	281	64	0	26	97	1	0	53	158	3	869	0
7:15 AM		0	11	219	71	0	4	347	78	0	27	106	0	0	76	167	6	1,112	0
7:30 AM		0	7	207	79	0	1	332	152	0	40	131	1	0	80	202	7	1,239	0
7:45 AM		0	10	249	98	0	4	352	147	0	43	116	5	0	85	178	10	1,297	4,517
8:00 AM		1	9	218	82	0	1	400	113	0	39	94	3	0	86	202	10	1,258	4,906
8:15 AM		0	5	185	52	0	2	391	93	0	39	133	1	0	70	182	13	1,166	4,960
8:30 AM		1	6	197	65	0	3	384	92	0	45	121	4	0	68	177	7	1,170	4,891
8:45 AM		1	5	182	51	0	2	356	110	0	52	114	5	0	66	168	11	1,123	4,717
Count Total		3	56	1,584	552	0	19	2,843	849	0	311	912	20	0	584	1,434	67	9,234	0
Peak Hour	All	1	31	859	311	0	8	1,475	505	0	161	474	10	0	321	764	40	4,960	0
	HV	0	0	18	6	0	0	22	12	0	5	13	0	0	9	17	1	103	0
	HV%	0%	0%	2%	2%	-	0%	1%	2%	-	3%	3%	0%	-	3%	2%	3%	2%	0

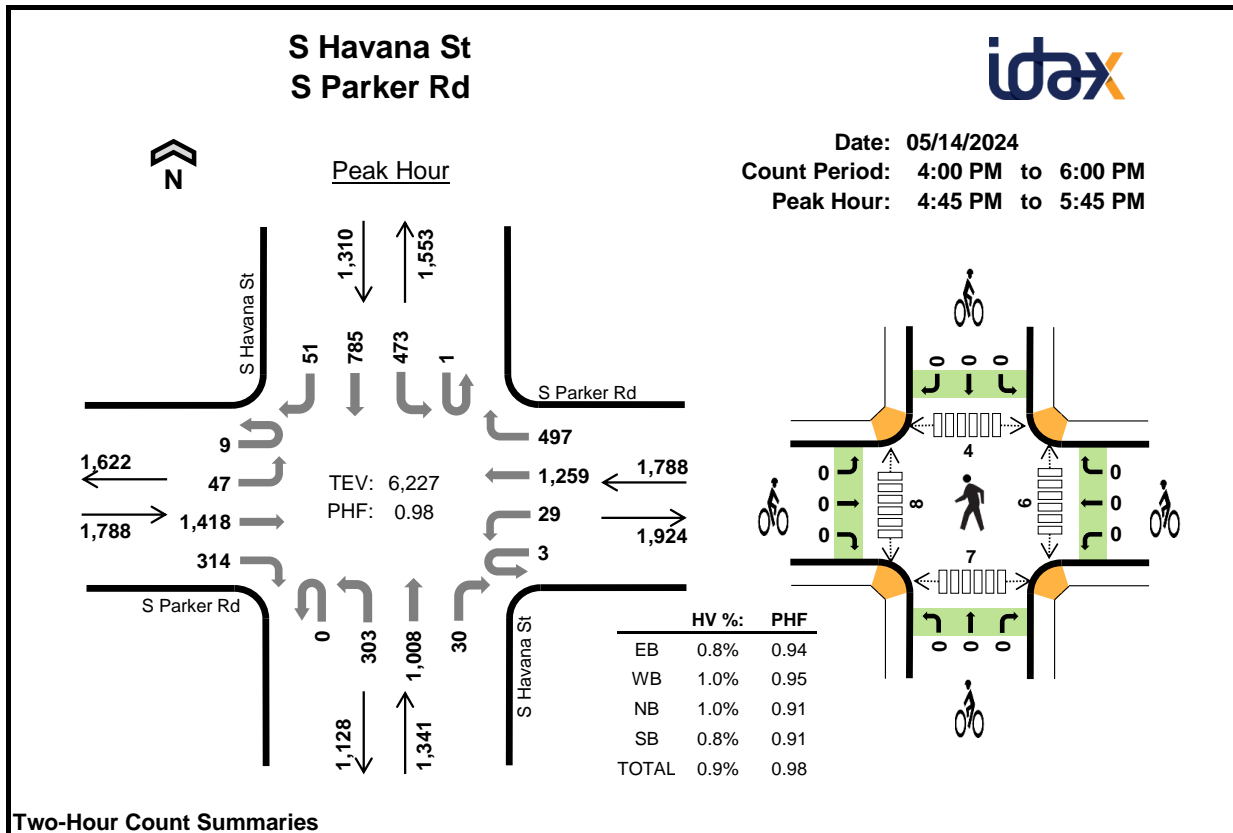
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	4	9	4	7	24	0	0	0	0	0	0	0	1	0	1
7:15 AM	6	8	4	8	26	0	0	0	0	0	0	3	0	0	3
7:30 AM	10	7	3	8	28	0	0	0	0	0	1	0	0	0	1
7:45 AM	3	5	7	6	21	0	0	0	0	0	2	2	0	1	5
8:00 AM	7	11	3	7	28	0	0	0	0	0	0	0	0	1	1
8:15 AM	4	11	5	6	26	0	0	0	0	0	0	0	3	0	3
8:30 AM	8	13	3	7	31	0	0	0	0	0	0	0	0	3	3
8:45 AM	8	10	5	10	33	0	0	0	0	0	0	3	1	0	4
Count Total	50	74	34	59	217	0	0	0	0	0	3	8	5	5	21
Peak Hour	24	34	18	27	103	0	0	0	0	0	3	2	3	2	10

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S Parker Rd				S Parker Rd				S Havana St				S Havana St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	2	2	0	0	4	5	0	1	2	1	0	2	5	0	24	0
7:15 AM	0	0	5	1	0	0	5	3	0	1	3	0	0	5	3	0	26	0
7:30 AM	0	0	8	2	0	0	3	4	0	0	3	0	0	3	5	0	28	0
7:45 AM	0	0	2	1	0	0	3	2	0	2	5	0	0	2	4	0	21	99
8:00 AM	0	0	4	3	0	0	8	3	0	2	1	0	0	1	5	1	28	103
8:15 AM	0	0	4	0	0	0	8	3	0	1	4	0	0	3	3	0	26	103
8:30 AM	0	0	7	1	0	1	8	4	0	0	3	0	0	3	4	0	31	106
8:45 AM	0	1	5	2	0	0	7	3	0	1	2	2	0	4	6	0	33	118
Count Total	0	1	37	12	0	1	46	27	0	8	23	3	0	23	35	1	217	0
Peak Hour	0	0	18	6	0	0	22	12	0	5	13	0	0	9	17	1	103	0

Two-Hour Count Summaries - Bikes																		
Interval Start	S Parker Rd			S Parker Rd			S Havana St			S Havana St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		S Parker Rd				S Parker Rd				S Havana St				S Havana St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		3	10	365	80	0	2	317	135	0	73	244	4	0	117	173	16	1,539	0
4:15 PM		1	6	341	79	0	12	313	121	0	70	228	8	0	127	175	7	1,488	0
4:30 PM		4	6	342	71	0	7	310	107	0	75	223	2	0	106	177	11	1,441	0
4:45 PM		2	13	349	79	0	11	312	124	0	85	275	7	0	114	205	11	1,587	6,055
5:00 PM		1	15	337	86	2	8	330	131	0	66	244	10	0	144	200	15	1,589	6,105
5:15 PM		1	10	383	82	0	8	320	107	0	70	237	1	1	109	188	12	1,529	6,146
5:30 PM		5	9	349	67	1	2	297	135	0	82	252	12	0	106	192	13	1,522	6,227
5:45 PM		2	11	322	65	3	9	237	142	0	80	274	7	0	102	182	18	1,454	6,094
Count Total		19	80	2,788	609	6	59	2,436	1,002	0	601	1,977	51	1	925	1,492	103	12,149	0
Peak Hour	All	9	47	1,418	314	3	29	1,259	497	0	303	1,008	30	1	473	785	51	6,227	0
	HV	0	0	12	3	0	0	14	4	0	1	12	0	0	3	8	0	57	0
	HV%	0%	0%	1%	1%	0%	0%	1%	1%	-	0%	1%	0%	0%	1%	1%	0%	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	9	5	4	3	21	0	0	0	0	0	2	0	1	0	3
4:15 PM	7	4	6	8	25	0	0	0	0	0	0	2	1	2	5
4:30 PM	6	6	2	5	19	1	0	0	0	1	1	0	1	0	2
4:45 PM	6	7	6	3	22	0	0	0	0	0	3	3	1	1	8
5:00 PM	3	5	3	3	14	0	0	0	0	0	2	2	2	1	7
5:15 PM	4	3	1	1	9	0	0	0	0	0	1	1	0	3	5
5:30 PM	2	3	3	4	12	0	0	0	0	0	0	2	1	2	5
5:45 PM	2	3	5	2	12	0	0	0	0	0	3	3	1	1	8
Count Total	39	36	30	29	134	1	0	0	0	1	12	13	8	10	43
Peak Hour	15	18	13	11	57	0	0	0	0	0	6	8	4	7	25

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	S Parker Rd				S Parker Rd				S Havana St				S Havana St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	8	1	0	0	3	2	0	1	3	0	0	0	3	0	21	0
4:15 PM	0	0	6	1	0	0	3	1	0	0	6	0	0	2	6	0	25	0
4:30 PM	0	0	4	2	0	2	3	1	0	2	0	0	0	0	4	1	19	0
4:45 PM	0	0	4	2	0	0	6	1	0	0	6	0	0	1	2	0	22	87
5:00 PM	0	0	3	0	0	0	3	2	0	1	2	0	0	0	3	0	14	80
5:15 PM	0	0	3	1	0	0	2	1	0	0	1	0	0	1	0	0	9	64
5:30 PM	0	0	2	0	0	0	3	0	0	0	3	0	0	1	3	0	12	57
5:45 PM	0	0	2	0	0	0	2	1	0	3	2	0	0	0	2	0	12	47
Count Total	0	0	32	7	0	2	25	9	0	7	23	0	0	5	23	1	134	0
Peak Hour	0	0	12	3	0	0	14	4	0	1	12	0	0	3	8	0	57	0

Two-Hour Count Summaries - Bikes																	
Interval Start	S Parker Rd			S Parker Rd			S Havana St			S Havana St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0			
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Count Total	0	0	1	0	0	0	0	0	0	0	0	0	1	0			
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



## Parker Rd Access S Parker Rd

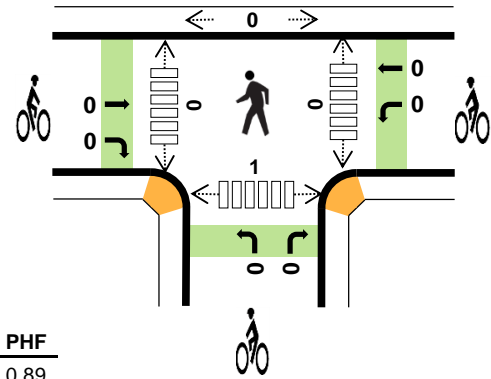
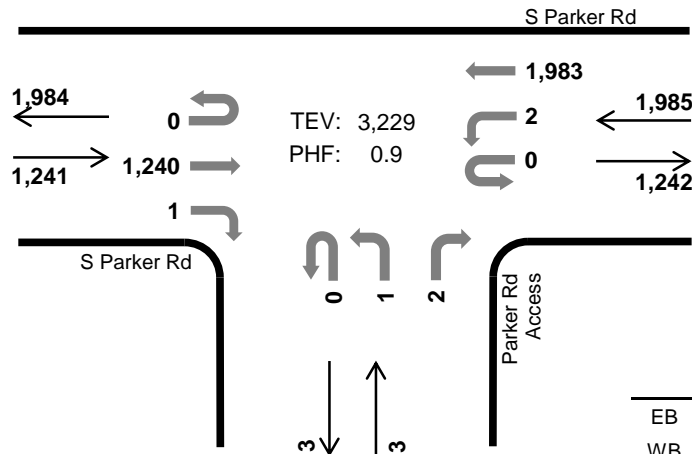


Peak Hour

Date: 05/14/2024

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	2.0%	0.89
WB	1.9%	0.91
NB	0.0%	0.38
SB	-	-
TOTAL	2.0%	0.90

### Two-Hour Count Summaries

Interval Start		S Parker Rd				S Parker Rd				Parker Rd Access				n/a				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	200	1	0	1	392	0	0	0	0	1	0	0	0	0	595	0
7:15 AM		0	0	301	0	0	0	405	0	0	0	0	0	0	0	0	0	706	0
7:30 AM		0	0	310	0	0	0	513	0	0	0	0	2	0	0	0	0	825	0
7:45 AM		0	0	349	1	0	0	544	0	0	0	0	0	0	0	0	0	894	3,020
8:00 AM		0	0	305	0	0	1	453	0	0	0	0	0	0	0	0	0	759	3,184
8:15 AM		0	0	276	0	0	1	473	0	0	1	0	0	0	0	0	0	751	3,229
8:30 AM		0	0	256	3	0	0	430	0	0	0	0	0	0	0	0	0	689	3,093
8:45 AM		0	0	275	2	0	1	481	0	0	0	0	0	0	0	0	0	759	2,958
Count Total		0	0	2,272	7	0	4	3,691	0	0	1	0	3	0	0	0	0	5,978	0
Peak Hour	All	0	0	1,240	1	0	2	1,983	0	0	1	0	2	0	0	0	0	3,229	0
	HV	0	0	25	0	0	0	38	0	0	0	0	0	0	0	0	0	63	0
	HV%	-	-	2%	0%	-	0%	2%	-	-	0%	-	0%	-	-	-	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	10	1	0	16	0	0	0	0	0	0	0	0	0	0
7:15 AM	10	8	0	0	18	0	0	0	0	0	0	0	0	0	0
7:30 AM	9	5	0	0	14	0	0	0	0	0	0	0	0	0	0
7:45 AM	4	9	0	0	13	0	0	0	0	0	0	0	0	0	0
8:00 AM	5	12	0	0	17	0	0	0	0	0	0	0	0	0	0
8:15 AM	7	12	0	0	19	0	0	0	0	0	0	0	0	1	1
8:30 AM	9	12	0	0	21	0	0	0	0	0	0	0	0	0	0
8:45 AM	14	14	0	0	28	0	0	0	0	0	0	0	0	0	0
Count Total	63	82	1	0	146	0	0	0	0	0	0	0	0	1	1
Peak Hr	25	38	0	0	63	0	0	0	0	0	0	0	0	1	1

**Two-Hour Count Summaries - Heavy Vehicles**

Interval Start	S Parker Rd				S Parker Rd				Parker Rd Access				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	1	9	0	0	0	0	1	0	0	0	0	16	0
7:15 AM	0	0	10	0	0	0	8	0	0	0	0	0	0	0	0	0	18	0
7:30 AM	0	0	9	0	0	0	5	0	0	0	0	0	0	0	0	0	14	0
7:45 AM	0	0	4	0	0	0	9	0	0	0	0	0	0	0	0	0	13	61
8:00 AM	0	0	5	0	0	0	12	0	0	0	0	0	0	0	0	0	17	62
8:15 AM	0	0	7	0	0	0	12	0	0	0	0	0	0	0	0	0	19	63
8:30 AM	0	0	9	0	0	0	12	0	0	0	0	0	0	0	0	0	21	70
8:45 AM	0	0	12	2	0	0	14	0	0	0	0	0	0	0	0	0	28	85
Count Total	0	0	61	2	0	1	81	0	0	0	0	1	0	0	0	0	146	0
Peak Hour	0	0	25	0	0	0	38	0	0	0	0	0	0	0	0	0	63	0

**Two-Hour Count Summaries - Bikes**

Interval Start	S Parker Rd			S Parker Rd			Parker Rd Access			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

## Parker Rd Access S Parker Rd

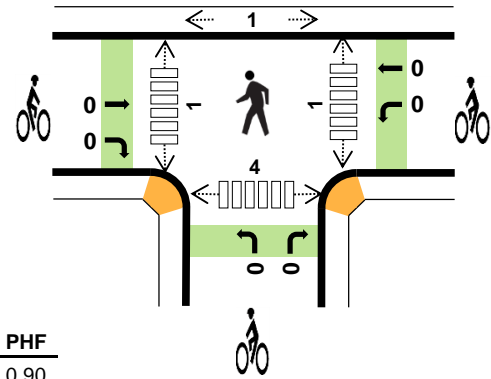
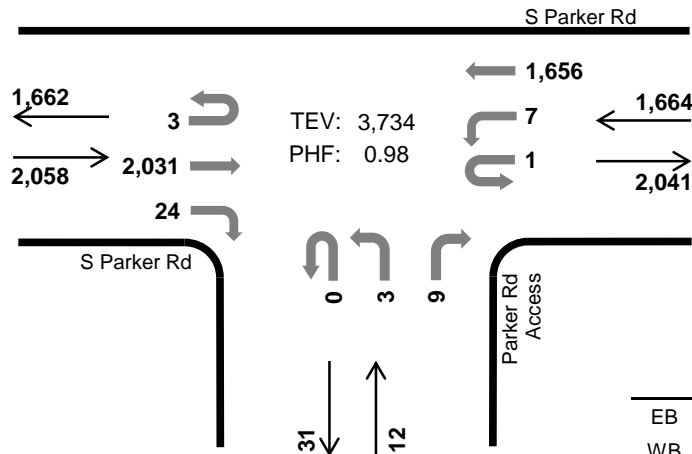


Peak Hour

Date: 05/15/2024

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.9%	0.90
WB	1.5%	0.93
NB	0.0%	0.50
SB	-	-
TOTAL	1.2%	0.98

### Two-Hour Count Summaries

Interval Start		S Parker Rd				S Parker Rd				Parker Rd Access				n/a				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	491	3	0	3	407	0	0	0	0	3	0	0	0	0	907	0
4:15 PM		1	0	482	4	1	2	413	0	0	1	0	1	0	0	0	0	905	0
4:30 PM		0	0	451	6	0	1	447	0	0	1	0	2	0	0	0	0	908	0
4:45 PM		0	0	519	5	0	1	399	0	0	0	0	1	0	0	0	0	925	3,645
5:00 PM		3	0	498	7	1	3	431	0	0	2	0	4	0	0	0	0	949	3,687
5:15 PM		0	0	563	6	0	2	379	0	0	0	0	2	0	0	0	0	952	3,734
5:30 PM		2	0	468	4	0	4	395	0	0	4	0	3	0	0	0	0	880	3,706
5:45 PM		0	0	480	4	0	0	343	0	0	0	0	5	0	0	0	0	832	3,613
Count Total		6	0	3,952	39	2	16	3,214	0	0	8	0	21	0	0	0	0	7,258	0
Peak Hour	All	3	0	2,031	24	1	7	1,656	0	0	3	0	9	0	0	0	0	3,734	0
	HV	0	0	18	0	0	0	25	0	0	0	0	0	0	0	0	0	43	0
	HV%	0%	-	1%	0%	0%	0%	2%	-	-	0%	-	0%	-	-	-	-	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	8	0	0	16	0	0	0	0	0	0	0	0	0	0
4:15 PM	9	2	0	0	11	0	0	0	0	0	0	0	0	0	0
4:30 PM	2	4	0	0	6	0	0	0	0	0	1	0	0	2	3
4:45 PM	5	10	0	0	15	0	0	0	0	0	0	0	0	1	1
5:00 PM	6	7	0	0	13	0	0	0	0	0	0	0	0	1	1
5:15 PM	5	4	0	0	9	0	0	0	0	0	0	1	1	0	2
5:30 PM	1	4	0	0	5	0	0	0	0	0	0	0	1	0	1
5:45 PM	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0
Count Total	37	44	0	0	81	0	0	0	0	0	1	1	2	4	8
Peak Hr	18	25	0	0	43	0	0	0	0	0	1	1	1	4	7

**Two-Hour Count Summaries - Heavy Vehicles**

Interval Start	S Parker Rd				S Parker Rd				Parker Rd Access				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	16	0
4:15 PM	0	0	9	0	0	0	2	0	0	0	0	0	0	0	0	0	11	0
4:30 PM	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	6	0
4:45 PM	0	0	5	0	0	0	10	0	0	0	0	0	0	0	0	0	15	48
5:00 PM	0	0	6	0	0	0	7	0	0	0	0	0	0	0	0	0	13	45
5:15 PM	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	9	43
5:30 PM	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	5	42
5:45 PM	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	6	33
Count Total	0	0	37	0	0	0	44	0	0	0	0	0	0	0	0	0	81	0
Peak Hour	0	0	18	0	0	0	25	0	0	0	0	0	0	0	0	0	43	0

**Two-Hour Count Summaries - Bikes**

Interval Start	S Parker Rd			S Parker Rd			Parker Rd Access			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

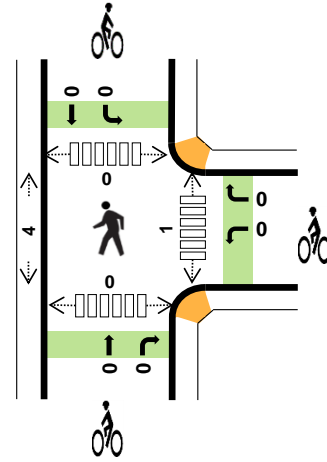
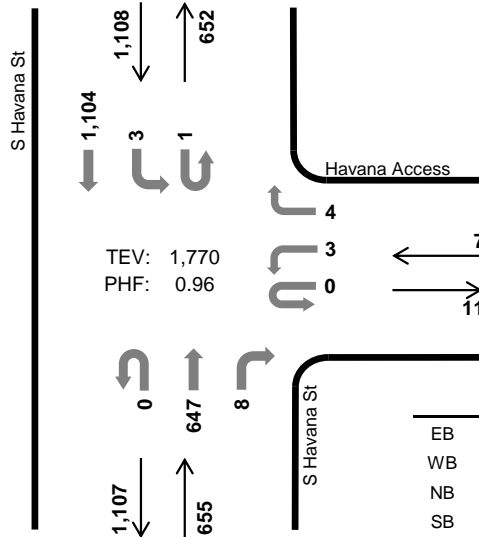


## S Havana St Havana Access



Peak Hour

Date: 05/14/2024  
Count Period: 7:00 AM to 9:00 AM  
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	-	-
WB	0.0%	0.88
NB	2.4%	0.94
SB	2.1%	0.95
TOTAL	2.2%	0.96

### Two-Hour Count Summaries

Interval Start		N/A				Havana Access				S Havana St				S Havana St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	0	0	1	0	0	118	0	1	1	208	0	329	0
7:15 AM		0	0	0	0	0	0	0	1	0	0	156	0	0	0	250	0	407	0
7:30 AM		0	0	0	0	0	2	0	0	0	0	170	5	0	0	282	0	459	0
7:45 AM		0	0	0	0	0	0	0	2	0	0	173	0	0	1	282	0	458	1,653
8:00 AM		0	0	0	0	0	1	0	1	0	0	148	3	1	2	290	0	446	
8:15 AM		0	0	0	0	0	1	0	4	0	0	156	2	1	1	234	0	399	1,762
8:30 AM		0	0	0	0	0	1	0	2	0	0	187	1	0	2	244	0	437	1,740
8:45 AM		0	0	0	0	0	0	0	2	0	0	179	0	0	2	214	0	397	1,679
Count Total		0	0	0	0	0	5	0	13	0	0	1,287	11	3	9	2,004	0	3,332	0
Peak Hour	All	0	0	0	0	0	3	0	4	0	0	647	8	1	3	1,104	0	1,770	0
	HV	0	0	0	0	0	0	0	0	0	0	16	0	1	0	22	0	39	0
	HV%	-	-	-	-	-	0%	-	0%	-	-	2%	0%	100%	0%	2%	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	4	7	11	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	5	3	8	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	4	6	10	0	0	0	0	0	1	2	0	0	3
7:45 AM	0	0	5	6	11	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	2	8	10	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	5	5	10	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	3	7	10	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	5	4	10	0	0	0	0	0	0	0	0	1	1
Count Total	0	1	33	46	80	0	0	0	0	0	1	4	0	1	6
Peak Hr	0	0	16	23	39	0	0	0	0	0	1	4	0	0	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N/A				Havana Access				S Havana St				S Havana St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	11	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0	8	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	10	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	11	40
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	7	0	10	39
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	10	41
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	7	0	10	41
8:45 AM	0	0	0	0	0	0	0	1	0	0	5	0	0	1	3	0	10	40
Count Total	0	0	0	0	0	0	0	1	0	0	33	0	1	1	44	0	80	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	16	0	1	0	22	0	39	0

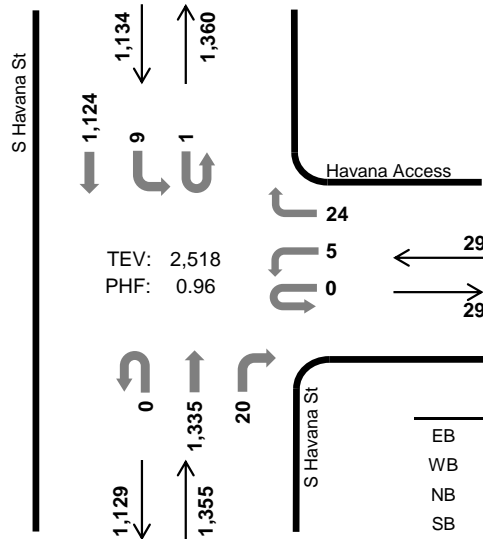
Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			Havana Access			S Havana St			S Havana St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

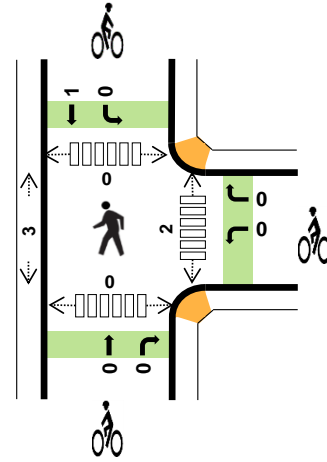
## S Havana St Havana Access



### Peak Hour



Date: 05/14/2024  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.81
NB	0.9%	0.96
SB	1.3%	0.96
TOTAL	1.1%	0.96

### Two-Hour Count Summaries

Interval Start		N/A				Havana Access				S Havana St				S Havana St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	0	0	0	1	0	6	0	0	278	2	0	4	249	0	540	0
4:15 PM		0	0	0	0	0	2	0	3	0	0	331	5	0	3	272	0	616	0
4:30 PM		0	0	0	0	0	1	0	7	0	0	346	6	1	1	265	0	627	0
4:45 PM		0	0	0	0	0	2	0	7	0	0	312	6	0	4	281	0	612	2,395
5:00 PM		0	0	0	0	0	1	0	6	0	0	346	6	0	2	294	0	655	2,510
5:15 PM		0	0	0	0	0	1	0	4	0	0	331	2	0	2	284	0	624	2,518
5:30 PM		0	0	0	0	0	0	0	8	0	0	320	4	3	4	248	0	587	2,478
5:45 PM		0	0	0	0	0	1	0	2	0	0	359	2	0	4	256	0	624	2,490
Count Total		0	0	0	0	0	9	0	43	0	0	2,623	33	4	24	2,149	0	4,885	0
Peak Hour	All	0	0	0	0	0	5	0	24	0	0	1,335	20	1	9	1,124	0	2,518	0
	HV	0	0	0	0	0	0	0	0	0	0	12	0	1	0	14	0	27	0
	HV%	-	-	-	-	-	0%	-	0%	-	-	1%	0%	100%	0%	1%	-	1%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

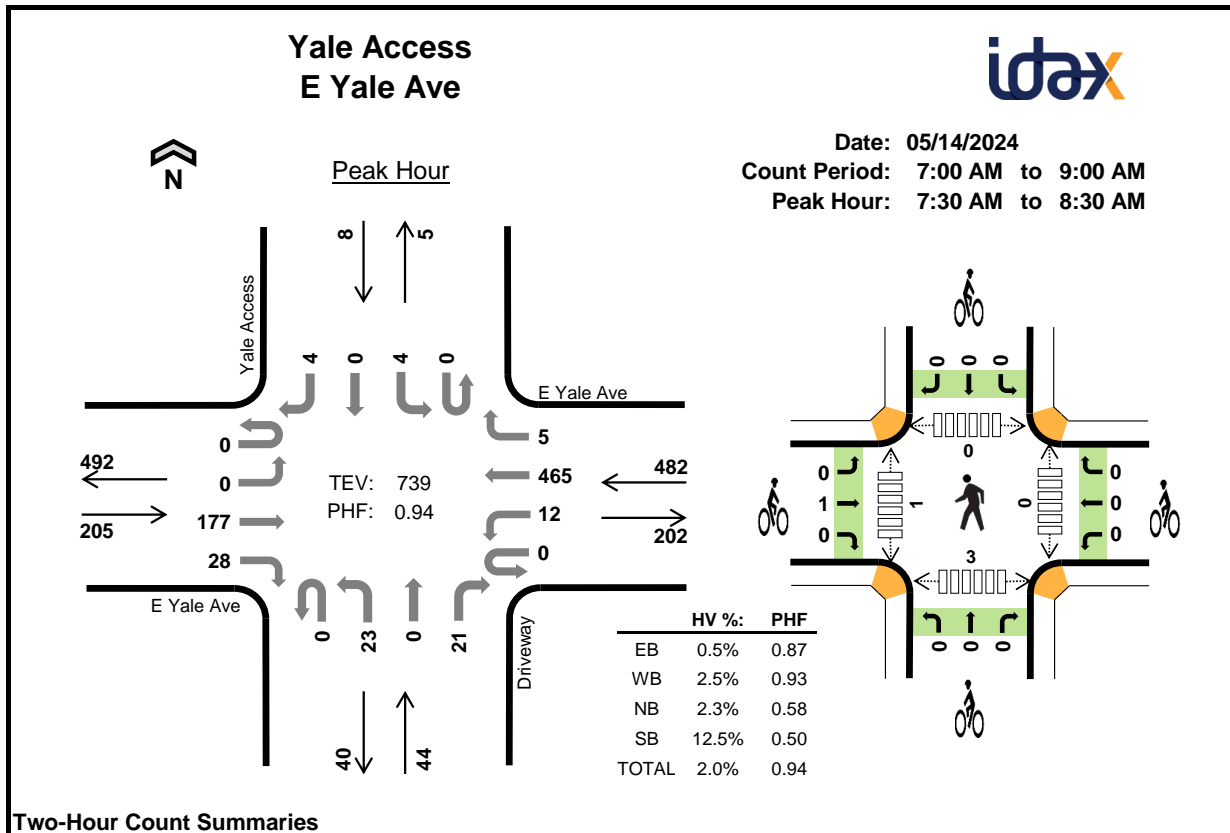
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	4	4	8	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	5	9	14	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	3	7	10	0	0	0	1	1	0	2	0	0	2
4:45 PM	0	0	3	4	7	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	3	3	6	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	3	1	4	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	3	3	6	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	4	2	6	0	0	0	0	0	1	0	0	0	1
Count Total	0	0	28	33	61	0	0	0	1	1	3	3	0	0	6
Peak Hr	0	0	12	15	27	0	0	0	1	1	2	3	0	0	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N/A				Havana Access				S Havana St				S Havana St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	8	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	9	0	14	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	1	0	6	0	10	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	7	39
5:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6	37
5:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	27
5:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	6	23
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	6	22
Count Total	0	0	0	0	0	0	0	0	0	0	28	0	1	0	32	0	61	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	12	0	1	0	14	0	27	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N/A			Havana Access			S Havana St			S Havana St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



**Two-Hour Count Summaries**

Interval Start		E Yale Ave				E Yale Ave				Driveway				Yale Access				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	28	3	0	6	118	0	0	4	0	4	0	0	0	0	163	0
7:15 AM		0	0	40	5	0	4	104	3	0	6	0	6	0	0	0	0	168	0
7:30 AM		0	0	47	6	0	2	125	2	0	4	0	6	0	3	0	1	196	0
7:45 AM		0	0	34	9	0	2	115	1	0	4	0	4	0	0	0	1	170	697
8:00 AM		0	0	48	11	0	2	112	2	0	3	0	4	0	1	0	1	184	718
8:15 AM		0	0	48	2	0	6	113	0	0	12	0	7	0	0	0	1	189	739
8:30 AM		0	0	34	5	0	4	128	2	0	4	0	7	0	1	0	1	186	729
8:45 AM		0	0	58	4	0	2	101	2	0	6	0	5	0	2	0	0	180	739
Count Total		0	0	337	45	0	28	916	12	0	43	0	43	0	7	0	5	1,436	0
Peak Hour	All	0	0	177	28	0	12	465	5	0	23	0	21	0	4	0	4	739	0
	HV	0	0	1	0	0	0	12	0	0	1	0	0	0	0	0	1	15	0
	HV%	-	-	1%	0%	-	0%	3%	0%	-	4%	-	0%	-	0%	-	25%	2%	0

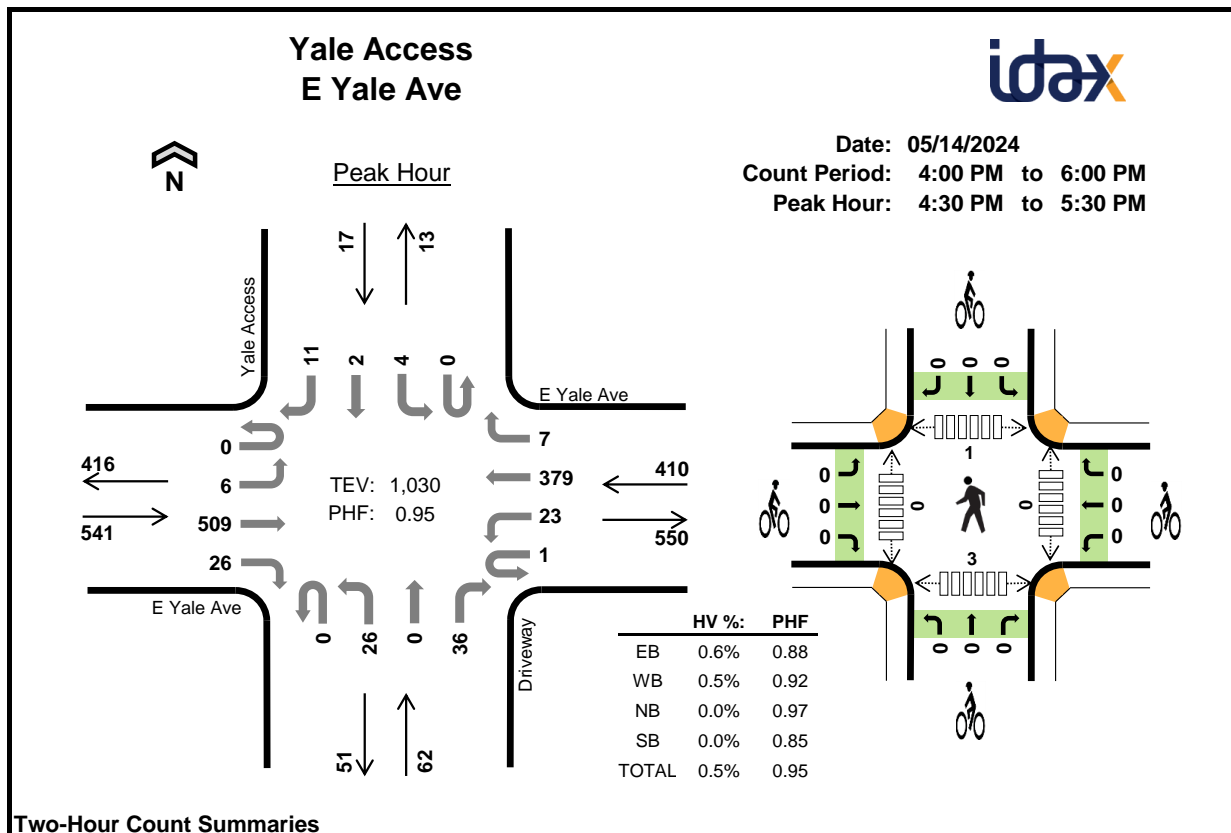
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	2	0	0	2	1	0	0	0	1	0	0	0	1	1
8:00 AM	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	3	1	1	5	0	0	0	0	0	0	1	0	2	3
8:30 AM	0	5	0	0	5	1	0	0	0	1	0	0	0	0	0
8:45 AM	0	2	0	0	2	0	0	0	0	0	1	1	1	2	5
Count Total	2	21	1	1	25	2	0	0	0	2	1	2	2	5	10
Peak Hour	1	12	1	1	15	1	0	0	0	1	0	1	0	3	4

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E Yale Ave				E Yale Ave				Driveway				Yale Access				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	9
8:00 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	13
8:15 AM	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	1	5	15
8:30 AM	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	5	16
8:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	16
Count Total	0	0	2	0	0	1	20	0	0	1	0	0	0	0	0	1	25	0
Peak Hour	0	0	1	0	0	0	12	0	0	1	0	0	0	0	0	1	15	0

Two-Hour Count Summaries - Bikes																		
Interval Start	E Yale Ave			E Yale Ave			Driveway			Yale Access			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	1				
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	2				
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
Count Total	0	2	0	0	0	0	0	0	0	0	0	0	2	0				
Peak Hour	0	1	0	0	0	0	0	0	0	0	0	0	1	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		E Yale Ave				E Yale Ave				Driveway				Yale Access				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	2	76	6	0	7	95	1	0	5	0	13	0	2	0	3	210	0
4:15 PM		0	0	85	10	0	5	95	1	0	9	1	6	0	2	0	6	220	0
4:30 PM		0	2	99	8	1	10	88	2	0	9	0	7	0	2	0	3	231	0
4:45 PM		0	0	123	5	0	4	106	1	0	3	0	13	0	0	1	4	260	921
5:00 PM		0	3	137	10	0	4	96	1	0	6	0	10	0	1	0	2	270	981
5:15 PM		0	1	150	3	0	5	89	3	0	8	0	6	0	1	1	2	269	1,030
5:30 PM		0	1	110	2	0	3	92	4	0	5	0	6	0	3	0	3	229	1,028
5:45 PM		0	1	90	5	0	2	87	4	0	4	0	8	0	4	0	2	207	975
Count Total		0	10	870	49	1	40	748	17	0	49	1	69	0	15	2	25	1,896	0
Peak Hour	All	0	6	509	26	1	23	379	7	0	26	0	36	0	4	2	11	1,030	0
	HV	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0
	HV%	-	0%	1%	0%	0%	0%	1%	0%	-	0%	-	0%	-	0%	0%	0%	0%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	0	0	2	0	0	0	0	0	1	0	1	1	3
4:15 PM	2	2	0	0	4	0	0	0	0	0	1	0	1	1	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	1	0	0	3	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
5:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	4	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
Count Total	7	4	0	0	11	0	0	0	0	0	2	0	6	11	19
Peak Hour	3	2	0	0	5	0	0	0	0	0	0	0	1	3	4

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	E Yale Ave				E Yale Ave				Driveway				Yale Access				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	9
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	6	1	0	0	4	0	0	0	0	0	0	0	0	0	11	0
Peak Hour	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0

Two-Hour Count Summaries - Bikes																		
Interval Start	E Yale Ave			E Yale Ave			Driveway			Yale Access			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.



# APPENDIX C

## Future Traffic Projections

CDOT OTIS: QT 4263 Aurora (Parker Road)

ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	YR20FACTOR	ANNUAL GROWTH RATE	DHV	DD	LOCATION
083A	71.228	71.811	0.583	2022	37000	1.14	0.66%	9.5	55	ON SH 83 PARKER RD NW/O CORNELL ST & DARTMOUTH AVE AURORA
083A	71.811	72.133	0.312	2022	36000	1.09	0.43%	9	52	ON SH 83 PARKER RD NW/O YALE AVE AURORA
083A	72.133	72.491	0.366	2022	32000	1.11	0.52%	10	54	ON SH 83 PARKER RD NW/O SH 30 HAVANA ST AURORA
Averages:						1.11	0.54%			

CDOT OTIS: QT 4263 Aurora (Havana Street)

ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	YR20FACTOR	ANNUAL GROWTH RATE	DHV	DD	LOCATION
030A	3.093	3.831	0.73	2022	26000	1.09	0.43%	9.5	57	ON SH 30 HAVANA ST S/O SH 83 PARKER RD DENVER
030A	3.831	4.276	0.269	2022	33000	1.10	0.48%	10	52	ON SH 30 HAVANA ST N/O SH 83 PARKER RD AURORA
Averages:						1.10	0.45%			

**DRCOG Traffic Projections:**      QuikTrip 4263

Location	2020	2050	Growth Factor	Annual Growth
Havana St South of Parker Rd	34,000	44,000	1.29	0.86%
Havana St North of Parker Rd	45,000	56,000	1.24	0.73%
Parker Rd West of Havana St	53,000	59,000	1.11	0.36%
Parker Rd East of Havana St	59,000	65,000	1.10	0.32%
Yale Ave West of Parker Rd	9,000	13,000	1.44	1.23%
Yale Ave East of Parker Rd	21,000	27,000	1.29	0.84%
<b>Total</b>	191,000	224,000	1.17	<b>0.53%</b>

# APPENDIX D

## Trip Generation Worksheets



Project QuikTrip 4263  
 Subject Trip Generation for Gasoline/Service Station with Convenience Market  
 Designed by CMF Date 15/15/2024 Job No. 096888046  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. 1 of 1

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Convenience Store/Gas Station - GFA (4-5.5K) (945)

Independent Variable - Vehicle Fueling Positions (X)

Vehicle Fueling Positions= 18 Positions

X = 18

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Page 873)**

Average Weekday	Directional Distribution:	50% ent.	50% exit.
T = 27.04 (X)	T = 487	Average Vehicle Trip Ends	
T = 27.04 * 18	243 entering	244 exiting	
	243 + 244 = 487		

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Page 874)**

Average Weekday	Directional Distribution:	50% ent.	50% exit.
T = 22.76 (X)	T = 410	Average Vehicle Trip Ends	
T = 22.76 * 18.000	205 entering	205 exiting	
	205 + 205 = 410		

### **Weekday (Page 872)**

Average Weekday	Directional Distribution:	50% entering, 50% exiting
T = 257.13 (X)	T = 4628	Average Vehicle Trip Ends
T = 257.13 * 18.000	2314 entering	2314 exiting
	2314 + 2314 = 4628	

### **Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)**

PM Peak Hour = 25% Non-Pass By	AM Peak Hour = 24% Non-Pass By
IN Out Total	
AM Peak 58 59 117	
PM Peak 51 51 102	
Daily 579 579 1158	PM Peak Hour Rate Applied to Daily

### **Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)**

PM Peak Hour = 75% Pass By	AM Peak Hour = 76% Pass By
IN Out Total	
AM Peak 185 185 370	
PM Peak 154 154 308	
Daily 1735 1735 3470	PM Peak Hour Rate Applied to Daily

# APPENDIX E

## Intersection Analysis Worksheets

# Timings

2024 Existing AM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	32	859	8	1475	505	161	474	321	764
Future Volume (vph)	32	859	8	1475	505	161	474	321	764
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	62.5	10.5	62.5	62.5	20.0	26.8	20.2	27.0
Total Split (%)	8.8%	52.1%	8.8%	52.1%	52.1%	16.7%	22.3%	16.8%	22.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 57 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)






























	Ø1		Ø2 (R)		Ø3		Ø4
10.5 s		62.5 s		20.2 s		26.8 s	
	Ø5		Ø6 (R)		Ø8		Ø7
10.5 s		62.5 s		27 s		20 s	

# HCM 7th Signalized Intersection Summary

2024 Existing AM

1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  		 	  	
Traffic Volume (veh/h)	32	859	311	8	1475	505	161	474	0	321	764	0
Future Volume (veh/h)	32	859	311	8	1475	505	161	474	0	321	764	0
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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	33	895	0	8	1536	0	168	494	0	334	796	0
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	3	3	3	2	2	2
Cap, veh/h	143	2661		338	1788		197	875		391	891	
Arrive On Green	0.03	0.52	0.00	0.01	0.34	0.00	0.04	0.06	0.00	0.11	0.17	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1767	5233	0	3456	5274	0
Grp Volume(v), veh/h	33	895	0	8	1536	0	168	494	0	334	796	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1767	1689	0	1728	1702	0
Q Serve(g_s), s	1.1	12.2	0.0	0.3	48.4	0.0	11.3	11.4	0.0	11.4	18.3	0.0
Cycle Q Clear(g_c), s	1.1	12.2	0.0	0.3	48.4	0.0	11.3	11.4	0.0	11.4	18.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	143	2661		338	1788		197	875		391	891	
V/C Ratio(X)	0.23	0.34		0.02	0.86		0.85	0.56		0.86	0.89	
Avail Cap(c_a), veh/h	168	2661		395	1788		214	899		423	915	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.3	16.7	0.0	14.8	35.8	0.0	56.8	52.2	0.0	52.3	48.4	0.0
Incr Delay (d2), s/veh	0.8	0.3	0.0	0.0	5.6	0.0	25.7	0.8	0.0	14.8	10.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.8	0.0	0.1	23.2	0.0	6.8	5.2	0.0	5.7	8.6	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	25.1	17.0	1.0	14.8	41.4	0.0	82.6	53.0	1.0	67.1	59.4	0.0
LnGrp LOS	C	B	A	B	D	A	F	D	A	E	E	A
Approach Vol, veh/h	1252			2070			662			1130		
Approach Delay, s/veh	13.1			30.8			60.5			61.7		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	68.0	19.1	26.2	8.8	65.9	18.8	26.4				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.0	57.0	14.7	21.3	5.0	57.0	14.5	21.5				
Max Q Clear Time (g_c+I1), s	2.3	14.2	13.4	13.4	3.1	50.4	13.3	20.3				
Green Ext Time (p_c), s	0.0	7.8	0.2	2.0	0.0	5.0	0.1	0.7				

## Intersection Summary

HCM 7th Control Delay, s/veh	37.1
HCM 7th LOS	D

## Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2024 Existing PM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	56	1418	32	1259	497	303	1008	474	785
Future Volume (vph)	56	1418	32	1259	497	303	1008	474	785
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	53.0	11.0	53.5	53.5	28.0	32.0	24.0	28.0
Total Split (%)	8.8%	44.2%	9.2%	44.6%	44.6%	23.3%	26.7%	20.0%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 61 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)











	Ø1		Ø2 (R)		Ø3		Ø4
11 s		53 s		24 s		32 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		53.5 s		28 s		28 s	



HCM 7th Signalized Intersection Summary  
1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

2024 Existing PM

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1418	314	32	1259	497	303	1008	0	474	785	0
Future Volume (veh/h)	56	1418	314	32	1259	497	303	1008	0	474	785	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	1447	0	33	1285	0	309	1029	0	484	801	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	2128		178	1454		344	1113		533	913	
Arrive On Green	0.04	0.42	0.00	0.01	0.14	0.00	0.26	0.29	0.00	0.15	0.18	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1781	5274	0	3456	5274	0
Grp Volume(v), veh/h	57	1447	0	33	1285	0	309	1029	0	484	801	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1781	1702	0	1728	1702	0
Q Serve(g_s), s	2.2	27.7	0.0	1.3	42.6	0.0	20.1	23.5	0.0	16.5	18.3	0.0
Cycle Q Clear(g_c), s	2.2	27.7	0.0	1.3	42.6	0.0	20.1	23.5	0.0	16.5	18.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	146	2128		178	1454		344	1113		533	913	
V/C Ratio(X)	0.39	0.68		0.19	0.88		0.90	0.92		0.91	0.88	
Avail Cap(c_a), veh/h	157	2128		210	1454		344	1128		533	957	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	28.5	0.0	23.1	49.1	0.0	43.4	41.7	0.0	49.9	48.0	0.0
Incr Delay (d2), s/veh	1.7	1.8	0.0	0.5	8.1	0.0	25.0	12.5	0.0	19.5	9.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.5	0.0	0.6	22.0	0.0	10.8	10.6	0.0	8.6	8.5	0.0
Unsig. Movement Delay, s/veh	1.00			0.00			1.00			0.00		
LnGrp Delay(d), s/veh	29.5	30.3	1.0	23.6	57.2	0.0	68.4	54.2	1.0	69.4	57.0	0.0
LnGrp LOS	C	C	A	C	E	A	E	D	A	E	E	A
Approach Vol, veh/h	1824			1825			1338			1285		
Approach Delay, s/veh	25.1			40.7			57.5			61.7		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	55.5	24.0	31.7	9.8	54.6	28.7	27.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.5	47.5	18.5	26.5	5.0	48.0	22.5	22.5				
Max Q Clear Time (g_c+I1), s	3.3	29.7	18.5	25.5	4.2	44.6	22.1	20.3				
Green Ext Time (p_c), s	0.0	10.0	0.0	0.7	0.0	2.5	0.0	1.1				

Intersection Summary

HCM 7th Control Delay, s/veh	44.0
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2026 Background AM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	32	868	8	1491	510	163	479	324	772
Future Volume (vph)	32	868	8	1491	510	163	479	324	772
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	64.1	10.5	64.1	64.1	19.0	25.0	20.4	26.4
Total Split (%)	8.8%	53.4%	8.8%	53.4%	53.4%	15.8%	20.8%	17.0%	22.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 57 (48%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated






















### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

	Ø1		Ø2 (R)		Ø3		Ø4
10.5 s		64.1 s		20.4 s		25 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		64.1 s		26.4 s		19 s	

HCM 7th Signalized Intersection Summary  
1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

2026 Background AM

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	868	314	8	1491	510	163	479	0	324	772	0
Future Volume (veh/h)	32	868	314	8	1491	510	163	479	0	324	772	0
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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	33	904	0	8	1553	0	170	499	0	338	804	0
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	3	3	3	2	2	2
Cap, veh/h	141	2666		336	1791		198	864		395	883	
Arrive On Green	0.03	0.52	0.00	0.01	0.34	0.00	0.04	0.06	0.00	0.11	0.17	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1767	5233	0	3456	5274	0
Grp Volume(v), veh/h	33	904	0	8	1553	0	170	499	0	338	804	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1767	1689	0	1728	1702	0
Q Serve(g_s), s	1.1	12.3	0.0	0.3	49.1	0.0	11.5	11.5	0.0	11.5	18.5	0.0
Cycle Q Clear(g_c), s	1.1	12.3	0.0	0.3	49.1	0.0	11.5	11.5	0.0	11.5	18.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	141	2666		336	1791		198	864		395	883	
V/C Ratio(X)	0.23	0.34		0.02	0.87		0.86	0.58		0.86	0.91	
Avail Cap(c_a), veh/h	166	2666		393	1791		199	864		429	889	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.6	16.7	0.0	14.7	36.0	0.0	56.8	52.4	0.0	52.2	48.7	0.0
Incr Delay (d2), s/veh	0.8	0.3	0.0	0.0	6.0	0.0	29.3	1.0	0.0	14.7	13.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.9	0.0	0.1	23.6	0.0	7.1	5.3	0.0	5.8	8.9	0.0
Unsig. Movement Delay, s/veh	1.00			0.00			1.00			0.00		
LnGrp Delay(d), s/veh	25.4	17.0	1.0	14.8	41.9	0.0	86.2	53.4	1.0	66.9	62.0	0.0
LnGrp LOS	C	B	A	B	D	A	F	D	A	E	E	A
Approach Vol, veh/h	1264			2092			669			1142		
Approach Delay, s/veh	13.1			31.2			61.7			63.5		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	68.1	19.2	26.0	8.8	66.0	18.9	26.2				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.0	58.6	14.9	19.5	5.0	58.6	13.5	20.9				
Max Q Clear Time (g_c+I1), s	2.3	14.3	13.5	13.5	3.1	51.1	13.5	20.5				
Green Ext Time (p_c), s	0.0	7.9	0.2	1.7	0.0	5.7	0.0	0.2				

Intersection Summary

HCM 7th Control Delay, s/veh	37.8
HCM 7th LOS	D

Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2026 Background PM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	57	1433	32	1273	502	306	1019	479	794
Future Volume (vph)	57	1433	32	1273	502	306	1019	479	794
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	53.0	11.0	53.5	53.5	28.0	32.0	24.0	28.0
Total Split (%)	8.8%	44.2%	9.2%	44.6%	44.6%	23.3%	26.7%	20.0%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 61 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)






















	Ø1		Ø2 (R)		Ø3		Ø4
11 s		53 s		24 s		32 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		53.5 s		28 s		28 s	

# HCM 7th Signalized Intersection Summary

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

2026 Background PM

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	1433	317	32	1273	502	306	1019	0	479	794	0
Future Volume (veh/h)	57	1433	317	32	1273	502	306	1019	0	479	794	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	1462	0	33	1299	0	312	1040	0	489	810	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	2123		175	1450		344	1118		533	919	
Arrive On Green	0.04	0.42	0.00	0.01	0.13	0.00	0.26	0.29	0.00	0.15	0.18	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1781	5274	0	3456	5274	0
Grp Volume(v), veh/h	58	1462	0	33	1299	0	312	1040	0	489	810	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1781	1702	0	1728	1702	0
Q Serve(g_s), s	2.2	28.1	0.0	1.3	43.2	0.0	20.4	23.8	0.0	16.7	18.6	0.0
Cycle Q Clear(g_c), s	2.2	28.1	0.0	1.3	43.2	0.0	20.4	23.8	0.0	16.7	18.6	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	144	2123		175	1450		344	1118		533	919	
V/C Ratio(X)	0.40	0.69		0.19	0.90		0.91	0.93		0.92	0.88	
Avail Cap(c_a), veh/h	155	2123		208	1450		344	1128		533	957	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	28.7	0.0	23.3	49.4	0.0	43.5	41.6	0.0	50.0	48.0	0.0
Incr Delay (d2), s/veh	1.8	1.8	0.0	0.5	9.0	0.0	26.7	13.3	0.0	21.0	9.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.7	0.0	0.6	22.4	0.0	11.1	10.8	0.0	8.8	8.7	0.0
Unsig. Movement Delay, s/veh	1.00			0.00			1.00			0.00		
LnGrp Delay(d), s/veh	30.0	30.5	1.0	23.8	58.4	0.0	70.2	55.0	1.0	71.0	57.4	0.0
LnGrp LOS	C	C	A	C	E	A	E	D	A	E	E	A
Approach Vol, veh/h	1843			1844			1352			1299		
Approach Delay, s/veh	25.3			41.6			58.5			62.5		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	55.4	24.0	31.8	9.8	54.5	28.7	27.1				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.5	47.5	18.5	26.5	5.0	48.0	22.5	22.5				
Max Q Clear Time (g_c+I1), s	3.3	30.1	18.7	25.8	4.2	45.2	22.4	20.6				
Green Ext Time (p_c), s	0.0	10.0	0.0	0.5	0.0	2.1	0.0	1.0				

### Intersection Summary

HCM 7th Control Delay, s/veh	44.7
HCM 7th LOS	D

### Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.



# Timings

2026 Total AM

06/02/2024

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	32	880	8	1469	504	203	497	330	778
Future Volume (vph)	32	880	8	1469	504	203	497	330	778
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	61.1	10.5	61.1	61.1	23.4	24.8	23.6	25.0
Total Split (%)	8.8%	50.9%	8.8%	50.9%	50.9%	19.5%	20.7%	19.7%	20.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 56 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)






























	Ø1		Ø2 (R)		Ø3		Ø4
10.5 s		61.1 s		23.6 s		24.8 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		61.1 s		25 s		23.4 s	

# HCM 7th Signalized Intersection Summary

2026 Total AM

1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			  		 	  	
Traffic Volume (veh/h)	32	880	320	8	1469	504	203	497	0	330	778	0
Future Volume (veh/h)	32	880	320	8	1469	504	203	497	0	330	778	0
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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	33	917	0	8	1530	0	211	518	0	344	810	0
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	3	3	3	2	2	2
Cap, veh/h	138	2599		322	1745		239	909		409	830	
Arrive On Green	0.03	0.51	0.00	0.01	0.33	0.00	0.09	0.12	0.00	0.12	0.16	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1767	5233	0	3456	5274	0
Grp Volume(v), veh/h	33	917	0	8	1530	0	211	518	0	344	810	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1767	1689	0	1728	1702	0
Q Serve(g_s), s	1.1	12.9	0.0	0.3	48.7	0.0	14.2	11.6	0.0	11.7	18.9	0.0
Cycle Q Clear(g_c), s	1.1	12.9	0.0	0.3	48.7	0.0	14.2	11.6	0.0	11.7	18.9	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	138	2599		322	1745		239	909		409	830	
V/C Ratio(X)	0.24	0.35		0.02	0.88		0.88	0.57		0.84	0.98	
Avail Cap(c_a), veh/h	163	2599		379	1745		264	909		521	830	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.1	17.6	0.0	15.6	36.8	0.0	53.6	48.4	0.0	51.8	50.0	0.0
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	6.6	0.0	25.9	0.8	0.0	9.6	25.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.1	0.0	0.1	23.6	0.0	8.2	5.1	0.0	5.6	10.0	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	26.0	18.0	1.0	15.6	43.4	0.0	79.5	49.3	1.0	61.3	75.4	0.0
LnGrp LOS	C	B	A	B	D	A	E	D	A	E	E	A
Approach Vol, veh/h	1283			2063			729			1154		
Approach Delay, s/veh	13.8			32.3			58.0			71.2		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	66.6	19.7	27.0	8.8	64.4	21.8	25.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.0	55.6	18.1	19.3	5.0	55.6	17.9	19.5				
Max Q Clear Time (g_c+I1), s	2.3	14.9	13.7	13.6	3.1	50.7	16.2	20.9				
Green Ext Time (p_c), s	0.0	8.0	0.5	1.7	0.0	3.8	0.1	0.0				

## Intersection Summary

HCM 7th Control Delay, s/veh	39.9
HCM 7th LOS	D

## Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2026 Total PM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	57	1443	32	1270	490	331	1035	484	799
Future Volume (vph)	57	1443	32	1270	490	331	1035	484	799
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	52.4	10.6	52.5	52.5	30.0	32.8	24.2	27.0
Total Split (%)	8.8%	43.7%	8.8%	43.8%	43.8%	25.0%	27.3%	20.2%	22.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 61 (51%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)











	Ø1		Ø2 (R)		Ø3		Ø4
10.6 s		52.4 s		24.2 s		32.8 s	
	Ø5		Ø6 (R)		Ø8		Ø7
10.5 s		52.5 s		27 s		30 s	

# HCM 7th Signalized Intersection Summary

2026 Total PM

1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	1443	322	32	1270	490	331	1035	0	484	799	0
Future Volume (veh/h)	57	1443	322	32	1270	490	331	1035	0	484	799	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	1472	0	33	1296	0	338	1056	0	494	815	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	2088		170	1426		362	1144		539	901	
Arrive On Green	0.04	0.41	0.00	0.01	0.13	0.00	0.27	0.30	0.00	0.16	0.18	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1781	5274	0	3456	5274	0
Grp Volume(v), veh/h	58	1472	0	33	1296	0	338	1056	0	494	815	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1781	1702	0	1728	1702	0
Q Serve(g_s), s	2.3	28.7	0.0	1.3	43.2	0.0	22.2	24.0	0.0	16.9	18.8	0.0
Cycle Q Clear(g_c), s	2.3	28.7	0.0	1.3	43.2	0.0	22.2	24.0	0.0	16.9	18.8	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	141	2088		170	1426		362	1144		539	901	
V/C Ratio(X)	0.41	0.70		0.19	0.91		0.93	0.92		0.92	0.90	
Avail Cap(c_a), veh/h	152	2088		197	1426		364	1162		539	915	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	29.4	0.0	23.9	49.9	0.0	43.0	41.1	0.0	49.9	48.4	0.0
Incr Delay (d2), s/veh	1.9	2.0	0.0	0.5	10.1	0.0	30.6	12.0	0.0	20.7	12.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	12.0	0.0	0.6	22.6	0.0	12.3	10.8	0.0	8.8	9.0	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	30.5	31.5	1.0	24.5	60.0	0.0	73.5	53.1	1.0	70.6	60.6	0.0
LnGrp LOS	C	C	A	C	E	A	E	D	A	E	E	A
Approach Vol, veh/h	1859			1829			1394			1309		
Approach Delay, s/veh	26.0			43.0			58.1			64.4		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	54.6	24.2	32.4	9.8	53.6	29.9	26.7				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.1	46.9	18.7	27.3	5.0	47.0	24.5	21.5				
Max Q Clear Time (g_c+I1), s	3.3	30.7	18.9	26.0	4.3	45.2	24.2	20.8				
Green Ext Time (p_c), s	0.0	9.6	0.0	0.9	0.0	1.4	0.0	0.4				

## Intersection Summary

HCM 7th Control Delay, s/veh	45.7
HCM 7th LOS	D

## Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2050 Background AM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	37	988	9	1697	581	185	545	369	879
Future Volume (vph)	37	988	9	1697	581	185	545	369	879
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	64.0	10.5	64.0	64.0	18.5	24.9	20.6	27.0
Total Split (%)	8.8%	53.3%	8.8%	53.3%	53.3%	15.4%	20.8%	17.2%	22.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 56 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

	Ø1		Ø2 (R)		Ø3		Ø4
10.5 s		64 s		20.6 s		24.9 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		64 s		27 s		18.5 s	
























# HCM 7th Signalized Intersection Summary

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

2050 Background AM

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	988	358	9	1697	581	185	545	0	369	879	0
Future Volume (veh/h)	37	988	358	9	1697	581	185	545	0	369	879	0
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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	39	1029	0	9	1768	0	193	568	0	384	916	0
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	3	3	3	2	2	2
Cap, veh/h	115	2647		297	1773		191	819		435	915	
Arrive On Green	0.03	0.52	0.00	0.01	0.33	0.00	0.04	0.05	0.00	0.13	0.18	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1767	5233	0	3456	5274	0
Grp Volume(v), veh/h	39	1029	0	9	1768	0	193	568	0	384	916	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1767	1689	0	1728	1702	0
Q Serve(g_s), s	1.3	14.6	0.0	0.3	59.6	0.0	13.0	13.2	0.0	13.1	21.5	0.0
Cycle Q Clear(g_c), s	1.3	14.6	0.0	0.3	59.6	0.0	13.0	13.2	0.0	13.1	21.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	115	2647		297	1773		191	819		435	915	
V/C Ratio(X)	0.34	0.39		0.03	1.00		1.01	0.69		0.88	1.00	
Avail Cap(c_a), veh/h	135	2647		352	1773		191	819		435	915	
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.5	17.4	0.0	15.2	39.9	0.0	57.9	53.9	0.0	51.6	49.3	0.0
Incr Delay (d2), s/veh	1.7	0.4	0.0	0.0	20.7	0.0	67.2	2.5	0.0	18.8	30.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.8	0.0	0.1	32.0	0.0	9.8	6.2	0.0	6.8	11.6	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	30.3	17.9	1.0	15.2	60.6	0.0	125.0	56.4	1.0	70.4	79.3	0.0
LnGrp LOS	C	B	A	B	E	A	F	E	A	E	F	A
Approach Vol, veh/h	1441				2382			761			1300	
Approach Delay, s/veh	13.8				45.0			73.8			76.7	
Approach LOS	B				D			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	67.7	20.6	24.9	9.1	65.4	18.5	27.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.0	58.5	15.1	19.4	5.0	58.5	13.0	21.5				
Max Q Clear Time (g_c+I1), s	2.3	16.6	15.1	15.2	3.3	61.6	15.0	23.5				
Green Ext Time (p_c), s	0.0	9.3	0.0	1.4	0.0	0.0	0.0	0.0				

### Intersection Summary

HCM 7th Control Delay, s/veh	48.1
HCM 7th LOS	D

### Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2050 Background PM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	1631	37	1448	572	349	1160	545	903
Future Volume (vph)	64	1631	37	1448	572	349	1160	545	903
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Prot	NA	Prot	NA
Protected Phases	5	2	1	6		7	4	3	8
Permitted Phases	2		6		6				
Detector Phase	5	2	1	6	6	7	4	3	8
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.5	53.1	10.6	53.2	53.2	28.3	32.0	24.3	28.0
Total Split (%)	8.8%	44.3%	8.8%	44.3%	44.3%	23.6%	26.7%	20.3%	23.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 60 (50%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)






















	Ø1		Ø2 (R)		Ø3		Ø4
10.6 s		53.1 s		24.3 s		32 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.5 s		53.2 s		28 s		28.3 s	

# HCM 7th Signalized Intersection Summary

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

2050 Background PM

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1631	361	37	1448	572	349	1160	0	545	903	0
Future Volume (veh/h)	64	1631	361	37	1448	572	349	1160	0	545	903	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1664	0	38	1478	0	356	1184	0	556	921	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	2090		150	1430		338	1128		541	957	
Arrive On Green	0.04	0.41	0.00	0.01	0.13	0.00	0.25	0.29	0.00	0.16	0.19	0.00
Sat Flow, veh/h	1781	5274	0	1781	3554	1585	1781	5274	0	3456	5274	0
Grp Volume(v), veh/h	65	1664	0	38	1478	0	356	1184	0	556	921	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1777	1585	1781	1702	0	1728	1702	0
Q Serve(g_s), s	2.5	34.3	0.0	1.5	48.3	0.0	22.8	26.5	0.0	18.8	21.5	0.0
Cycle Q Clear(g_c), s	2.5	34.3	0.0	1.5	48.3	0.0	22.8	26.5	0.0	18.8	21.5	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	126	2090		150	1430		338	1128		541	957	
V/C Ratio(X)	0.52	0.80		0.25	1.03		1.05	1.05		1.03	0.96	
Avail Cap(c_a), veh/h	134	2090		173	1430		338	1128		541	957	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.3	31.1	0.0	25.6	52.0	0.0	44.8	42.4	0.0	50.6	48.3	0.0
Incr Delay (d2), s/veh	3.3	3.3	0.0	0.9	33.0	0.0	63.2	40.9	0.0	45.7	20.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	14.4	0.0	0.7	29.6	0.0	15.5	14.7	0.0	11.5	10.9	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	32.6	34.3	1.0	26.5	85.0	0.0	108.0	83.3	1.0	96.3	68.7	0.0
LnGrp LOS	C	C	A	C	F	A	F	F	A	F	E	A
Approach Vol, veh/h	2097				2100			1540			1477	
Approach Delay, s/veh	28.4				60.3			89.0			79.1	
Approach LOS	C				E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	54.6	24.3	32.0	9.9	53.8	28.3	28.0				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.1	47.6	18.8	26.5	5.0	47.7	22.8	22.5				
Max Q Clear Time (g_c+I1), s	3.5	36.3	20.8	28.5	4.5	50.3	24.8	23.5				
Green Ext Time (p_c), s	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0				

### Intersection Summary

HCM 7th Control Delay, s/veh	61.0
HCM 7th LOS	E

### Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2050 Total AM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	37	1000	9	1675	225	563	375	885
Future Volume (vph)	37	1000	9	1675	225	563	375	885
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6					
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.6	64.2	10.6	64.2	15.2	24.2	21.0	30.0
Total Split (%)	8.8%	53.5%	8.8%	53.5%	12.7%	20.2%	17.5%	25.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

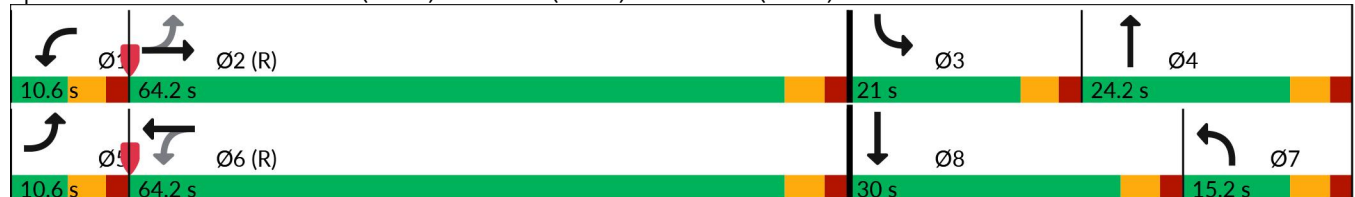
Actuated Cycle Length: 120

Offset: 50 (42%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)
























# HCM 7th Signalized Intersection Summary

2050 Total AM

1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1000	364	9	1675	575	225	563	0	375	885	0
Future Volume (veh/h)	37	1000	364	9	1675	575	225	563	0	375	885	0
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	1870	1870	1870	1870	1870	1870	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	39	1042	0	9	1745	0	234	586	0	391	922	0
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	3	3	3	2	2	2
Cap, veh/h	165	2682		298	2582		277	772		443	1020	
Arrive On Green	0.03	0.53	0.00	0.00	0.17	0.00	0.03	0.05	0.00	0.13	0.20	0.00
Sat Flow, veh/h	1781	5274	0	1781	5274	0	3428	5233	0	3456	5274	0
Grp Volume(v), veh/h	39	1042	0	9	1745	0	234	586	0	391	922	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	0	1714	1689	0	1728	1702	0
Q Serve(g_s), s	1.2	14.6	0.0	0.3	38.5	0.0	8.2	13.7	0.0	13.3	21.2	0.0
Cycle Q Clear(g_c), s	1.2	14.6	0.0	0.3	38.5	0.0	8.2	13.7	0.0	13.3	21.2	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	165	2682		298	2582		277	772		443	1020	
V/C Ratio(X)	0.24	0.39		0.03	0.68		0.84	0.76		0.88	0.90	
Avail Cap(c_a), veh/h	187	2682		354	2582		277	789		446	1042	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.4	17.0	0.0	14.8	40.7	0.0	57.6	54.8	0.0	51.4	46.9	0.0
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.0	1.4	0.0	20.6	4.2	0.0	18.3	10.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.7	0.0	0.1	17.9	0.0	4.5	6.5	0.0	6.9	9.9	0.0
Unsig. Movement Delay, s/veh			1.00			0.00			1.00			0.00
LnGrp Delay(d), s/veh	21.1	17.4	1.0	14.9	42.2	0.0	78.2	59.0	1.0	69.8	57.7	0.0
LnGrp LOS	C	B	A	B	D	A	E	E	A	E	E	A
Approach Vol, veh/h	1460			2353			820			1313		
Approach Delay, s/veh	13.3			31.3			64.5			61.3		
Approach LOS	B			C			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	68.5	20.9	23.8	9.1	66.2	15.2	29.5				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.1	58.7	15.5	18.7	5.1	58.7	9.7	24.5				
Max Q Clear Time (g_c+I1), s	2.3	16.6	15.3	15.7	3.2	40.5	10.2	23.2				
Green Ext Time (p_c), s	0.0	9.5	0.0	1.1	0.0	12.2	0.0	0.8				

## Intersection Summary

HCM 7th Control Delay, s/veh	38.1
HCM 7th LOS	D

## Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

# Timings

2050 Total PM

## 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	64	1641	37	1445	374	1176	550	908
Future Volume (vph)	64	1641	37	1445	374	1176	550	908
Turn Type	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA
Protected Phases	5	2	1	6	7	4	3	8
Permitted Phases	2		6					
Detector Phase	5	2	1	6	7	4	3	8
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	23.5	10.5	23.5	10.5	23.5	10.5	23.5
Total Split (s)	10.6	49.0	10.6	49.0	22.4	34.4	26.0	38.0
Total Split (%)	8.8%	40.8%	8.8%	40.8%	18.7%	28.7%	21.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	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
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 60 (50%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

### Splits and Phases: 1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

	Ø1		Ø2 (R)		Ø3		Ø4
10.6 s		49 s		26 s		34.4 s	
	Ø5		Ø6 (R)		Ø7		Ø8
10.6 s		49 s		38 s		22.4 s	



# HCM 7th Signalized Intersection Summary

2050 Total PM

1: Havana St (SH-30)/Havana St (SH-30) & Parker Rd (SH-83)

06/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑		↰	↑↑↑		↰	↑↑↑		↰	↑↑↑	
Traffic Volume (veh/h)	64	1641	366	37	1445	560	374	1176	0	550	908	0
Future Volume (veh/h)	64	1641	366	37	1445	560	374	1176	0	550	908	0
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	1674	0	38	1474	0	382	1200	0	561	927	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	157	1915		134	1880		643	1230		590	1152	
Arrive On Green	0.04	0.38	0.00	0.01	0.12	0.00	0.19	0.24	0.00	0.17	0.23	0.00
Sat Flow, veh/h	1781	5274	0	1781	5274	0	3456	5274	0	3456	5274	0
Grp Volume(v), veh/h	65	1674	0	38	1474	0	382	1200	0	561	927	0
Grp Sat Flow(s),veh/h/ln	1781	1702	0	1781	1702	0	1728	1702	0	1728	1702	0
Q Serve(g_s), s	2.7	36.6	0.0	1.6	33.6	0.0	12.1	28.0	0.0	19.3	20.6	0.0
Cycle Q Clear(g_c), s	2.7	36.6	0.0	1.6	33.6	0.0	12.1	28.0	0.0	19.3	20.6	0.0
Prop In Lane	1.00		0.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	157	1915		134	1880		643	1230		590	1152	
V/C Ratio(X)	0.41	0.87		0.28	0.78		0.59	0.98		0.95	0.80	
Avail Cap(c_a), veh/h	167	1915		156	1880		643	1230		590	1383	
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	34.9	0.0	28.9	48.1	0.0	44.7	45.2	0.0	49.2	44.0	0.0
Incr Delay (d2), s/veh	1.7	5.9	0.0	1.1	3.4	0.0	1.5	20.0	0.0	25.2	3.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	15.9	0.0	0.7	16.0	0.0	5.3	14.0	0.0	10.4	9.0	0.0
Unsig. Movement Delay, s/veh	1.00			0.00			1.00			0.00		
LnGrp Delay(d), s/veh	29.5	40.8	1.0	30.1	51.4	0.0	46.2	65.2	1.0	74.5	47.0	0.0
LnGrp LOS	C	D	A	C	D	A	D	E	A	E	D	A
Approach Vol, veh/h	2112			2083			1582			1488		
Approach Delay, s/veh	33.4			37.0			60.6			57.3		
Approach LOS	C			D			E			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	50.5	26.0	34.4	9.9	49.7	27.8	32.6				
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5				
Max Green Setting (Gmax), s	5.1	43.5	20.5	28.9	5.1	43.5	16.9	32.5				
Max Q Clear Time (g_c+I1), s	3.6	38.6	21.3	30.0	4.7	35.6	14.1	22.6				
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	5.6	0.4	4.5				

## Intersection Summary

HCM 7th Control Delay, s/veh	45.3
HCM 7th LOS	D

## Notes

Unsignalized Delay for [NBR, EBR, WBR, SBR] is included in calculations of the approach delay and intersection delay.

HCM 7th TWSC  
2: Parker Rd Access & Parker Rd (SH-83)

2026 Total AM  
05/23/2024

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↱	↑↑↑	↲	
Traffic Vol, veh/h	1207	64	93	1930	47	66
Future Vol, veh/h	1207	64	93	1930	47	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1341	71	103	2144	52	73
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1412	0	2441	706
Stage 1	-	-	-	-	1377	-
Stage 2	-	-	-	-	1064	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	468	-	*403	*733
Stage 1	-	-	-	-	*342	-
Stage 2	-	-	-	-	*629	-
Platoon blocked, %	-	-	0	-	1	0
Mov Cap-1 Maneuver	-	-	468	-	*314	*733
Mov Cap-2 Maneuver	-	-	-	-	*309	-
Stage 1	-	-	-	-	*342	-
Stage 2	-	-	-	-	*490	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.68		15.54	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	466	-	-	468	-	
HCM Lane V/C Ratio	0.269	-	-	0.221	-	
HCM Control Delay (s/veh)	15.5	-	-	14.9	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.8	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC  
2: Parker Rd Access & Parker Rd (SH-83)

2026 Total PM  
05/23/2024

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↱	↑↑↑	↲	
Traffic Vol, veh/h	2010	85	69	1628	34	70
Future Vol, veh/h	2010	85	69	1628	34	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2051	87	70	1661	35	71
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2138	0	2900	1069
Stage 1	-	-	-	-	2094	-
Stage 2	-	-	-	-	805	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	294	-	*297	*598
Stage 1	-	-	-	-	*207	-
Stage 2	-	-	-	-	*675	-
Platoon blocked, %	-	-	0	-	1	0
Mov Cap-1 Maneuver	-	-	294	-	*226	*598
Mov Cap-2 Maneuver	-	-	-	-	*188	-
Stage 1	-	-	-	-	*207	-
Stage 2	-	-	-	-	*514	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.86		19.78	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	349	-	-	294	-	
HCM Lane V/C Ratio	0.304	-	-	0.239	-	
HCM Control Delay (s/veh)	19.8	-	-	21.1	-	
HCM Lane LOS	C	-	-	C	-	
HCM 95th %tile Q(veh)	1.3	-	-	0.9	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC  
2: Parker Rd Access & Parker Rd (SH-83)

2050 Total AM  
05/23/2024

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↱	↑↑↑	↲	
Traffic Vol, veh/h	1380	64	93	2207	47	66
Future Vol, veh/h	1380	64	93	2207	47	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1533	71	103	2452	52	73
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1604	0	2756	802
Stage 1	-	-	-	-	1569	-
Stage 2	-	-	-	-	1188	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	409	-	*309	*703
Stage 1	-	-	-	-	*292	-
Stage 2	-	-	-	-	*567	-
Platoon blocked, %	-	-	0	-	1	0
Mov Cap-1 Maneuver	-	-	409	-	*231	*703
Mov Cap-2 Maneuver	-	-	-	-	*253	-
Stage 1	-	-	-	-	*292	-
Stage 2	-	-	-	-	*424	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.68		17.86	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	404	-	-	409	-	
HCM Lane V/C Ratio	0.31	-	-	0.253	-	
HCM Control Delay (s/veh)	17.9	-	-	16.8	-	
HCM Lane LOS	C	-	-	C	-	
HCM 95th %tile Q(veh)	1.3	-	-	1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC  
2: Parker Rd Access & Parker Rd (SH-83)

2050 Total PM  
05/23/2024

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↑	↑↑↑	↑	
Traffic Vol, veh/h	2294	89	70	1859	34	71
Future Vol, veh/h	2294	89	70	1859	34	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2341	91	71	1897	35	72
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	2432	0	3288	1216
Stage 1	-	-	-	-	2386	-
Stage 2	-	-	-	-	902	-
Critical Hdwy	-	-	5.34	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	3.12	-	3.82	3.92
Pot Cap-1 Maneuver	-	-	238	-	*238	*537
Stage 1	-	-	-	-	*166	-
Stage 2	-	-	-	-	*629	-
Platoon blocked, %	-	-	0	-	1	0
Mov Cap-1 Maneuver	-	-	238	-	*167	*537
Mov Cap-2 Maneuver	-	-	-	-	*151	-
Stage 1	-	-	-	-	*166	-
Stage 2	-	-	-	-	*440	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.96		24.1	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	294	-	-	238	-	
HCM Lane V/C Ratio	0.364	-	-	0.3	-	
HCM Control Delay (s/veh)	24.1	-	-	26.5	-	
HCM Lane LOS	C	-	-	D	-	
HCM 95th %tile Q(veh)	1.6	-	-	1.2	-	
Notes						
-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						

HCM 7th TWSC  
3: Havana St (SH-30) & Havana St Access

2050 Total AM  
05/23/2024

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		↑↑↑		W	↑↑↑
Traffic Vol, veh/h	3	4	647	8	4	1014
Future Vol, veh/h	3	4	647	8	4	1014
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	674	8	4	1056

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1109	341	0
Stage 1	678	-	-
Stage 2	431	-	-
Critical Hdwy	5.74	7.14	-
Critical Hdwy Stg 1	6.64	-	-
Critical Hdwy Stg 2	6.04	-	-
Follow-up Hdwy	3.82	3.92	-
Pot Cap-1 Maneuver	*686	*824	-
Stage 1	*616	-	-
Stage 2	*783	-	-
Platoon blocked, %	0	0	-
Mov Cap-1 Maneuver	*683	*824	-
Mov Cap-2 Maneuver	*429	-	-
Stage 1	*616	-	-
Stage 2	*779	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v11.17		0	0.04
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	591	800
HCM Lane V/C Ratio	-	-	0.012	0.005
HCM Control Delay (s/veh)	-	-	11.2	9.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

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



HCM 7th TWSC  
3: Havana St (SH-30) & Havana St Access

2026 Total PM  
05/23/2024

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵↵		↑↑↵		↵↑↑↑	
Traffic Vol, veh/h	44	96	1318	59	51	1105
Future Vol, veh/h	44	96	1318	59	51	1105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	100	1373	61	53	1151
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1970	717	0	0	1434	0
Stage 1	1404	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	*470	*703	-	-	521	-
Stage 1	*393	-	-	-	-	-
Stage 2	*768	-	-	-	-	-
Platoon blocked, %	0	0	-	-	0	-
Mov Cap-1 Maneuver	*422	*703	-	-	521	-
Mov Cap-2 Maneuver	*355	-	-	-	-	-
Stage 1	*393	-	-	-	-	-
Stage 2	*690	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v14.17			0		0.56	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT		NBRWBLn1		SBL	SBT
Capacity (veh/h)	-		-		538	521
HCM Lane V/C Ratio	-		-		0.271	0.102
HCM Control Delay (s/veh)	-		-		14.2	12.7
HCM Lane LOS	-		-		B	B
HCM 95th %tile Q(veh)	-		-		1.1	0.3
Notes						
~: Volume exceeds capacity     \$: Delay exceeds 300s     +: Computation Not Defined     *: All major volume in platoon						

HCM 7th TWSC  
3: Havana St (SH-30) & Havana St Access

2050 Total AM  
05/23/2024

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		↑↑↑		W	↑↑↑
Traffic Vol, veh/h	49	91	716	46	54	1129
Future Vol, veh/h	49	91	716	46	54	1129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	95	746	48	56	1176
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1353	397	0	0	794	0
Stage 1	770	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	*640	*809	-	-	747	-
Stage 1	*585	-	-	-	-	-
Stage 2	*752	-	-	-	-	-
Platoon blocked, %	0	0	-	-	0	-
Mov Cap-1 Maneuver	*592	*809	-	-	747	-
Mov Cap-2 Maneuver	*534	-	-	-	-	-
Stage 1	*585	-	-	-	-	-
Stage 2	*696	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s/v	11.67	0		0.47		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	685	747	-	
HCM Lane V/C Ratio	-	-	0.213	0.075	-	
HCM Control Delay (s/veh)	-	-	11.7	10.2	-	
HCM Lane LOS	-	-	B	B	-	
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 7th TWSC  
3: Havana St (SH-30) & Havana St Access

2050 Total PM  
05/23/2024

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		↑↑↑		W	↑↑↑
Traffic Vol, veh/h	45	100	1505	62	53	1262
Future Vol, veh/h	45	100	1505	62	53	1262
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	104	1568	65	55	1315
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2236	816	0	0	1632	0
Stage 1	1600	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Critical Hdwy	5.74	7.14	-	-	5.34	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	-	-	3.12	-
Pot Cap-1 Maneuver	*434	*673	-	-	452	-
Stage 1	*334	-	-	-	-	-
Stage 2	*737	-	-	-	-	-
Platoon blocked, %	0	0	-	-	0	-
Mov Cap-1 Maneuver	*381	*673	-	-	452	-
Mov Cap-2 Maneuver	*295	-	-	-	-	-
Stage 1	*334	-	-	-	-	-
Stage 2	*647	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s/v15.85			0		0.57	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT		NBRWBLn1		SBL	SBT
Capacity (veh/h)	-		-		482	452
HCM Lane V/C Ratio	-		-		0.314	0.122
HCM Control Delay (s/veh)	-		-		15.8	14.1
HCM Lane LOS	-		-		C	B
HCM 95th %tile Q(veh)	-		-		1.3	0.4
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕↕	
Traffic Vol, veh/h	1	179	28	13	470	5	23	0	21	5	0	5
Future Vol, veh/h	1	179	28	13	470	5	23	0	21	5	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	1	190	30	14	500	5	24	0	22	5	0	5
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	505	0	0	220	0	0	485	740	110	628	753	253
Stage 1	-	-	-	-	-	-	207	207	-	530	530	-
Stage 2	-	-	-	-	-	-	278	533	-	97	222	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1056	-	-	1409	-	-	522	369	1039	*409	363	747
Stage 1	-	-	-	-	-	-	858	779	-	*500	525	-
Stage 2	-	-	-	-	-	-	705	523	-	*987	767	-
Platoon blocked, %		-	-	0	-	-	0	0	0	0	0	
Mov Cap-1 Maneuver	1056	-	-	1409	-	-	511	365	1039	*395	359	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	365	-	*395	359	-
Stage 1	-	-	-	-	-	-	857	778	-	*494	519	-
Stage 2	-	-	-	-	-	-	692	517	-	*964	766	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.05			0.28			10.73			12.11		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	675	15	-	-	95	-	-	517				
HCM Lane V/C Ratio	0.069	0.001	-	-	0.01	-	-	0.021				
HCM Control Delay (s/veh)	10.7	8.4	0	-	7.6	0.1	-	12.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		TT			TT			T			T	
Traffic Vol, veh/h	7	515	26	25	383	7	26	0	36	5	2	12
Future Vol, veh/h	7	515	26	25	383	7	26	0	36	5	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	542	27	26	403	7	27	0	38	5	2	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	411	0	0	569	0	0	826	1034	285	745	1044	205
Stage 1	-	-	-	-	-	-	571	571	-	459	459	-
Stage 2	-	-	-	-	-	-	255	463	-	286	584	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1145	-	-	1180	-	-	390	296	*947	*454	292	801
Stage 1	-	-	-	-	-	-	668	630	-	*551	564	-
Stage 2	-	-	-	-	-	-	727	562	-	*893	620	-
Platoon blocked, %		-	-	0	-	-	0	0	0	0	0	
Mov Cap-1 Maneuver	1145	-	-	1180	-	-	369	287	*947	*421	282	801
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	287	-	*421	282	-
Stage 1	-	-	-	-	-	-	663	626	-	*537	550	-
Stage 2	-	-	-	-	-	-	695	548	-	*851	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.16	0.66	12.12	11.67
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	571	43	-	-	212	-	-	560
HCM Lane V/C Ratio	0.114	0.006	-	-	0.022	-	-	0.036
HCM Control Delay (s/veh)	12.1	8.2	0.1	-	8.1	0.2	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

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

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↕			↕	
Traffic Vol, veh/h	1	204	32	15	535	6	26	0	24	6	0	6
Future Vol, veh/h	1	204	32	15	535	6	26	0	24	6	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	2	2	2
Mvmt Flow	1	217	34	16	569	6	28	0	26	6	0	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	576	0	0	251	0	0	553	844	126	715	857	288
Stage 1	-	-	-	-	-	-	236	236	-	604	604	-
Stage 2	-	-	-	-	-	-	316	607	-	111	253	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	994	-	-	1371	-	-	465	320	1015	352	314	709
Stage 1	-	-	-	-	-	-	824	756	-	452	486	-
Stage 2	-	-	-	-	-	-	669	484	-	980	743	-
Platoon blocked, %		-	-	0	-	-	0	0	0	0	0	
Mov Cap-1 Maneuver	994	-	-	1371	-	-	454	315	1015	338	309	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	454	315	-	338	309	-
Stage 1	-	-	-	-	-	-	823	755	-	446	479	-
Stage 2	-	-	-	-	-	-	654	478	-	954	742	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.04			0.3			11.37			13.08		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	618	13	-	-	96	-	-	458				
HCM Lane V/C Ratio	0.086	0.001	-	-	0.012	-	-	0.028				
HCM Control Delay (s/veh)	11.4	8.6	0	-	7.7	0.1	-	13.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1				



Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		TT			TT			T			T	
Traffic Vol, veh/h	8	586	30	29	436	8	30	0	41	6	2	14
Future Vol, veh/h	8	586	30	29	436	8	30	0	41	6	2	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	617	32	31	459	8	32	0	43	6	2	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	467	0	0	648	0	0	941	1178	324	849	1189	234
Stage 1	-	-	-	-	-	-	649	649	-	524	524	-
Stage 2	-	-	-	-	-	-	292	528	-	325	665	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1090	-	-	1118	-	-	330	245	*930	*394	241	768
Stage 1	-	-	-	-	-	-	620	593	-	*504	528	-
Stage 2	-	-	-	-	-	-	692	526	-	*877	583	-
Platoon blocked, %	-	-	-	0	-	-	0	0	0	0	0	-
Mov Cap-1 Maneuver	1090	-	-	1118	-	-	308	235	*930	*360	231	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	235	-	*360	231	-
Stage 1	-	-	-	-	-	-	614	588	-	*489	511	-
Stage 2	-	-	-	-	-	-	655	509	-	*829	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.18	0.72	13.42	12.46
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	502	43	-	-	215	-	-	505
HCM Lane V/C Ratio	0.149	0.008	-	-	0.027	-	-	0.046
HCM Control Delay (s/veh)	13.4	8.3	0.1	-	8.3	0.2	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.1

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

# APPENDIX F

## Queue Analysis Worksheets

## Queues

2026 Total AM

## 1: Havana St (SH-30)/Havana St (SH-30) &amp; Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	1250	8	1530	525	211	518	344	810
v/c Ratio	0.24	0.46	0.03	0.85	0.52	0.84	0.61	0.73	0.98
Control Delay (s/veh)	16.7	16.6	4.8	12.8	1.4	66.2	36.9	59.6	77.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.7	16.6	4.8	12.8	1.4	66.2	36.9	59.6	77.1
Queue Length 50th (ft)	11	186	0	88	0	163	141	132	231
Queue Length 95th (ft)	27	271	m1	#724	0	#288	97	182	#322
Internal Link Dist (ft)		1670		675			873		710
Turn Bay Length (ft)	550		550			550		425	
Base Capacity (vph)	137	2684	224	1788	998	261	849	517	826
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.47	0.04	0.86	0.53	0.81	0.61	0.67	0.98

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2026 Total PM

## 1: Havana St (SH-30)/Havana St (SH-30) &amp; Parker Rd (SH-83)

06/02/2024



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	1801	33	1296	500	338	1056	494	815
v/c Ratio	0.42	0.84	0.24	0.89	0.56	0.93	0.91	0.92	0.89
Control Delay (s/veh)	26.8	35.3	11.9	23.9	2.8	61.8	40.0	74.4	61.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.8	35.3	11.9	23.9	2.8	61.8	40.0	74.4	61.8
Queue Length 50th (ft)	24	468	4	506	0	264	299	196	228
Queue Length 95th (ft)	48	#542	m7	#653	0	#425	#357	#296	#300
Internal Link Dist (ft)		1670		675			873		710
Turn Bay Length (ft)	550		550			550		425	
Base Capacity (vph)	136	2136	136	1448	883	362	1156	534	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.84	0.24	0.90	0.57	0.93	0.91	0.93	0.89

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2050 Total AM

06/02/2024

## 1: Havana St (SH-30)/Havana St (SH-30) &amp; Parker Rd (SH-83)



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	1421	9	2344	234	586	391	922
v/c Ratio	0.28	0.51	0.04	0.89	0.84	0.74	0.88	0.89
Control Delay (s/veh)	16.4	16.1	5.3	13.2	69.4	43.3	74.0	58.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.4	16.1	5.3	13.2	69.4	43.3	74.0	58.2
Queue Length 50th (ft)	12	208	1	112	94	163	155	256
Queue Length 95th (ft)	28	305	m2	#146	#150	122	#241	#328
Internal Link Dist (ft)		1670		675		873		710
Turn Bay Length (ft)	550		550		550		425	
Base Capacity (vph)	137	2780	198	2613	276	787	443	1038
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.51	0.05	0.90	0.85	0.74	0.88	0.89

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2050 Total PM

06/02/2024

## 1: Havana St (SH-30)/Havana St (SH-30) &amp; Parker Rd (SH-83)



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	65	2047	38	2045	382	1200	561	927
v/c Ratio	0.47	1.02	0.27	1.07	0.66	0.98	0.95	0.74
Control Delay (s/veh)	30.6	62.3	15.1	62.6	41.5	53.5	77.6	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	62.3	15.1	62.6	41.5	53.5	77.6	45.8
Queue Length 50th (ft)	28	~663	6	~654	115	278	224	241
Queue Length 95th (ft)	56	#761	m11	#753	#192	#424	#335	284
Internal Link Dist (ft)		1670		675		873		710
Turn Bay Length (ft)	550		550		550		425	
Base Capacity (vph)	137	1996	137	1908	575	1224	586	1377
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	1.03	0.28	1.07	0.66	0.98	0.96	0.67

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.