



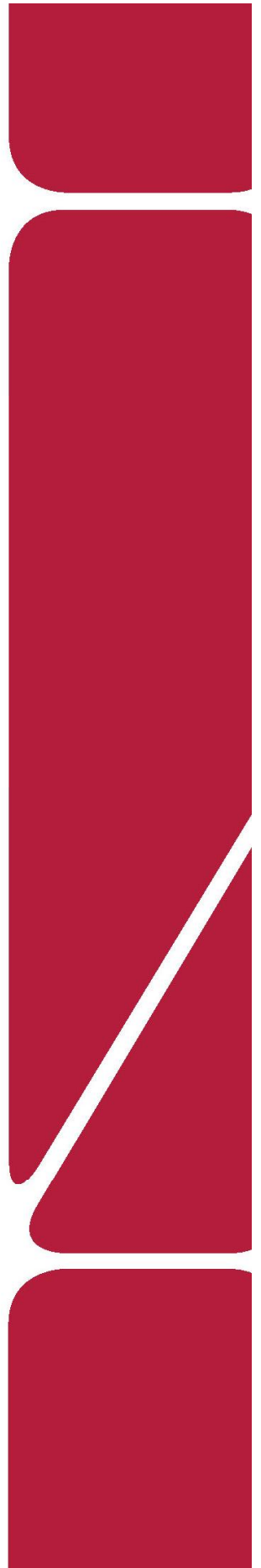
Traffic Impact Study

# Buckley Yard

## Aurora, Colorado

Prepared for:  
Evergreen Devco, Inc.

**Kimley»Horn**



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

## **Buckley Yard**

Aurora, Colorado

**Prepared for**  
**Evergreen Devco, Inc.**  
2390 East Camelback Road  
Suite 410  
Phoenix, AZ 85016

**Prepared by**  
**Kimley-Horn and Associates, Inc.**  
4582 South Ulster Street  
Suite 1500  
Denver, Colorado 80237  
(303) 228-2300

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## 1.0 EXECUTIVE SUMMARY

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Buckley Yard, a new mixed-use development, is proposed to be located on the northeast corner of the Alameda Parkway and Airport Boulevard intersection in Aurora, Colorado. The project includes commercial lots along Airport Boulevard and residential homes within the eastern portion of the project. Analysis was completed for build out of the development in 2022 as well as the 2040 long-term horizon to determine intersection and roadway configurations needed at both planning horizons. For purposes of this traffic study, Buckley Yard was assumed to include the following:

- Lot 1: 4,000 SF Drive-in Bank
- Lot 2: 1,000 SF Coffee Shop with Drive-Thru
- Lot 3: 5,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 4: 4,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 5: 16 Fueling Position Gasoline Station with Convenience Market
- West Residential: 52 Paired Homes and 113 Townhomes
- East Residential: 49 Single Family Detached Housing Units and 94 Paired Homes

The purpose of this study is to identify project traffic generation characteristics, to identify potential project traffic related impacts on the local street system, and to develop mitigation measures required for the identified impacts. The following key intersections were included for evaluation within this study:

- Alameda Drive and Airport Boulevard
- Alameda Parkway and Airport Boulevard
- Alameda Drive/Richfield Street and Alameda Parkway
- Alameda Drive and Quintero Way (existing T-intersection, future four-leg intersection)
- Alameda Parkway and Quintero Way (future)

Likewise, three (3) additional project access streets along Alameda Drive, three (3) project access streets along Quintero Way, two (2) right-in/right-out project accesses along Airport Boulevard, and one (1) right-in/right-out project access along Alameda Parkway were included.

Regional access to the project will be provided by Interstate 70, Interstate 225, and E-470. Primary access to the proposed development will be provided by Alameda Parkway, Airport

Boulevard, 6<sup>th</sup> Avenue, and Mississippi Avenue. Direct access to the site will be provided from 10 proposed accesses along Alameda Drive, Quintero Way, Airport Boulevard, and Alameda Parkway. Four (4) accesses are to be located along Alameda Drive with one access in alignment with Quintero Way. Three (3) access to be located along the south and west side of Quintero Way. Two (2) right-in/right-out accesses are proposed to be located along the east side of Airport Boulevard, with the southern right-in/right-out access being Quintero Way, and one (1) right-in/right-out access is to be located along the north side of Alameda Parkway. The accesses on Alameda Drive will operate with full turning movements. All three accesses on Quintero Way will operate with full turning movements. Both accesses on Airport Boulevard and the access on Alameda Parkway are proposed to be restricted to right-in/right-out movements only.

The Buckley Yard mixed use development is expected to generate approximately 9,588 daily weekday trips. Of these, 835 trips are expected to occur during the AM peak hour, while 678 trips are expected during the PM peak hour.

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, demographic information, anticipated surrounding development areas, and the proposed access and future roadway system for the project. Assignment of project traffic was based upon the trip generation described previously and the distributions developed. The traffic assignment was added to the background traffic volumes to determine future traffic with the project.

Based on the analysis presented in this report, Kimley-Horn believes Buckley Yard 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 recommendations:

#### 2022 Recommendations

- Based on the City of Aurora using CDOT requirements as a guide to determine turn lane thresholds, a continuous northbound right turn auxiliary lane will need to be constructed along Airport Boulevard from Alameda Parkway to Alameda Drive to accommodate an acceleration lane from the intersection of Alameda Parkway and Airport Boulevard (intersection #2), deceleration lanes to and acceleration lanes from both project accesses

(intersections #8 and #9 (Quintero Way)), and a deceleration lane for traffic entering the Alameda Drive and Airport Boulevard (intersection #1).

- At the Alameda Drive and Airport Boulevard intersection (#1), it is recommended that the southbound left turn operate with protected/permitted left turn phasing. This will require a traffic signal modification to install four-section flashing yellow signal heads on the southbound indication mast arm and pole on the southeast corner of the intersection. Also, a 150-foot with 100-foot taper westbound right turn lane is recommended to be constructed and designated. This right turn lane may require a new traffic signal pole and mast arm to be installed on the northeast corner of the intersection. The existing 75-foot eastbound left turn lane was found to require 125 feet of storage length today and 150 feet in 2022 with background traffic and the development occurring on the west side of Airport Boulevard. With total traffic volumes in 2022, this eastbound left turn lane was found to require a length of 175 feet. However, the eastbound left turn queue length at this intersection is constructed to its maximum length due to the narrowing of Alameda Drive to the west.
- At the Alameda Parkway and Airport Boulevard intersection (#2) it is recommended that the existing 400-foot southbound dual left turn lanes be extended by 100 feet to a length of 500 feet. Likewise, it is recommended that the westbound right turn lane operate with free movements with the construction of a channelized island on the northeast corner of the intersection and a continuous acceleration lane (based on CDOT standards for a 40-mph roadway) along northbound Airport Boulevard.
- Signalization is recommended at the Alameda Parkway and Alameda Drive/Richfield Street intersection (#3). When this occurs, separate northbound and southbound left turn lanes are recommended to be designated. The existing roadway width of Richfield Street will allow for striping the recommended 100-foot northbound left turn lane. The southbound left turn lane will require roadway widening of Alameda Drive to designate this left turn lane to 275 feet.
- For the project access to align as the west leg of the Alameda Drive and Quintero Way intersection (#4), the eastbound approach exiting the residential area is recommended to have a R1-1 "STOP" sign installed. All access approaches are anticipated to operate acceptably with a single approach lane to the intersection.

- For the Alameda Parkway and Quintero Way intersection (#5) it is recommended that this intersection operate with a three-quarter movement restriction by reconfiguring the center median along Alameda Parkway to restrict the southbound approach to right turn movements only. With construction of the center median it is recommended that a R3-1 No Left Turn sign be installed underneath the existing stop sign.
- At the new project access approaches along Alameda Drive and Quintero Way (#4, #6, #7, #10, #12, #13, and #14) R1-1 “STOP” signs are recommended to be installed for the exiting approaches. Single lane approaches are anticipated to be sufficient for all approaches to these access intersections.
- For the two Airport Boulevard Right-In/Right-Out Access intersections (#8 and Quintero Way #9), it is recommended that R1-1 “STOP” signs be installed for the westbound project access approaches. To identify the proposed accesses to right turn movements only, it is recommended that a R3-2 No Left Turn signs be placed underneath the “STOP” signs and R6-1(R) ONE WAY signs be installed within the center raised median along Airport Boulevard.
- The exiting southbound access drive approach at the Alameda Parkway Access (#11) is recommended to operate with stop-control with the installation of a R1-1 “STOP” sign. With this access operating with right-in/right-out movement control, it is recommended that a R6-1(R) ONE WAY sign be installed within the existing center raised median along Alameda Parkway and a R3-2 No Left Turn sign be placed underneath the STOP sign.

#### 2040 Recommendations

The recommendations outlined as follows are based on a conservative two percent annual growth rate, which equates to about a 50 percent increase in traffic volumes over twenty years. Therefore, these recommendations should continue to be evaluated by the City in the future to determine what, if any of these, will be needed.

- At the Alameda Drive and Airport Boulevard intersection (#1) additional turn lane lengthening may be required if future traffic volume projections are realized. These include extension of the existing 75-foot eastbound right turn lane to 175 feet, extension of the



northbound left turn lane from 250 feet to 300 feet, and extension of the southbound left turn lane from 250 feet to 350 feet.

- The dual southbound left turn lanes at the Alameda Parkway and Airport Boulevard intersection (#2) may need to be further extended to 900 feet or triple left turn lanes may be needed. In addition, the eastbound left turn lanes may need to be extended from 400 feet to 450 feet and the eastbound right turn lane may need to be extended from 325 feet to 400 feet.
- The southbound left turn lane recommended to be designated at the Alameda Parkway and Alameda Drive intersection (#3) may need to be further extended to 500 feet if future traffic volume projections are realized.

#### General Recommendations

- Any on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to City of Aurora standards as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).

## 2.0 INTRODUCTION

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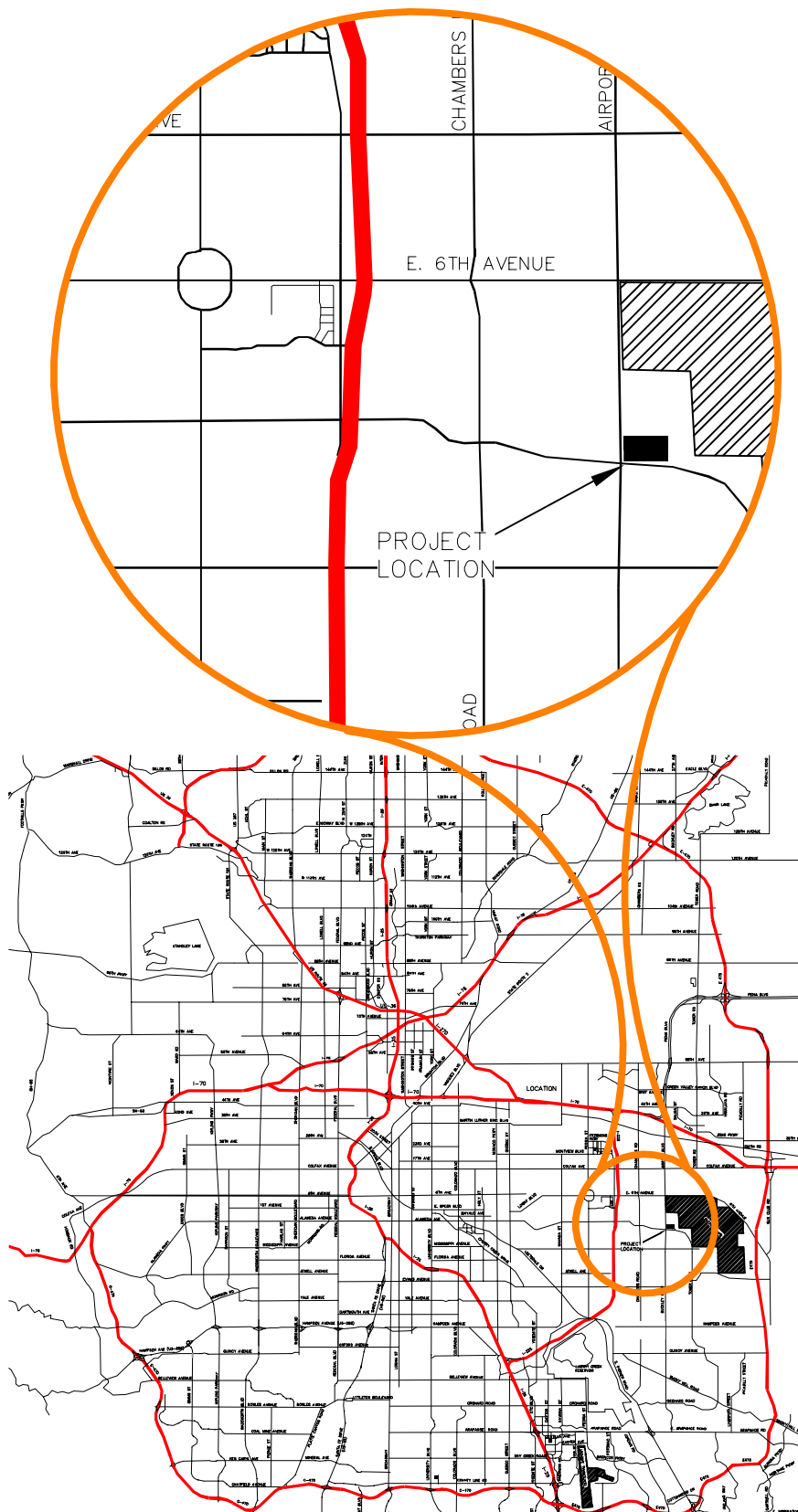
Kimley-Horn has prepared this report to document the results of a Traffic Impact Study of future traffic conditions associated with the proposed Buckley Yard development to be located on the northeast corner of the Alameda Parkway and Airport Boulevard intersection in Aurora, Colorado. A vicinity map illustrating the project location with respect to the surrounding area is shown in **Figure 1**. The project includes commercial lots along Airport Boulevard and residential homes within the eastern portion of the project. A site plan for the proposed development is provided in **Appendix F**. Analysis was completed for build out of the development in 2022 as well as the 2040 long-term horizon to determine intersection and roadway configurations needed at both planning horizons. For purposes of this traffic study, Buckley Yard was assumed to include the following:

- Lot 1: 4,000 SF Drive-in Bank
- Lot 2: 1,000 SF Coffee Shop with Drive-Thru
- Lot 3: 5,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 4: 4,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 5: 16 Fueling Position Gasoline Station with Convenience Market
- West Residential: 52 Paired Homes and 113 Townhomes
- East Residential: 49 Single Family Detached Housing Units and 94 Paired Homes

The purpose of this study is to identify project traffic generation characteristics, to identify potential project traffic related impacts on the local street system, and to develop mitigation measures required for the identified impacts. The following key intersections were included for evaluation within this study:

- Alameda Drive and Airport Boulevard
- Alameda Parkway and Airport Boulevard
- Alameda Drive/Richfield Street and Alameda Parkway
- Alameda Drive and Quintero Way (existing T-intersection, future four-leg intersection)
- Alameda Parkway and Quintero Way (future)

Likewise, three (3) additional project access streets along Alameda Drive, three (3) project access streets along Quintero Way, two (2) right-in/right-out project accesses along Airport Boulevard, and one (1) right-in/right-out project access along Alameda Parkway were included.



BUCKLEY YARD  
AURORA, CO  
VICINITY MAP

FIGURE 1

## 3.0 EXISTING CONDITIONS

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### 3.1 Existing Study Area

The existing project site consists of vacant, undeveloped land. To the east and north of the project site, a drainage way exists. Buckley Air Force Base is located further to the north and east, just beyond this drainage way. Directly to the west a residential development is under construction. South of the project development area, another residential project is under construction and there is also an office building. More vacant land and residential uses exist in all directions further surrounding the project site area. The land uses and roadway network surrounding the site are shown within the aerial of **Figure 2**.

### 3.2 Existing Roadway Network

Regional access to the project will be provided by Interstate 70, Interstate 225, and E-470. Primary access to the proposed development will be provided by Alameda Parkway, Airport Boulevard, 6<sup>th</sup> Avenue, and Mississippi Avenue.

Direct access to the site will be provided from 10 proposed accesses along Alameda Drive, Quintero Way, Airport Boulevard, and Alameda Parkway. Four (4) accesses are to be located along Alameda Drive with one access in alignment with Quintero Way. Three (3) access to be located along the south and west side of Quintero Way. Two (2) right-in/right-out accesses are proposed to be located along the east side of Airport Boulevard, with the southern right-in/right-out access being Quintero Way, and one (1) right-in/right-out access is to be located along the north side of Alameda Parkway. The accesses on Alameda Drive will operate with full turning movements. All three accesses on Quintero Way will operate with full turning movements. Both accesses on Airport Boulevard and the access on Alameda Parkway are proposed to be restricted to right-in/right-out movements only.

#### Airport Boulevard

Airport Boulevard is a six-lane divided roadway providing three through lanes of travel, northbound and southbound, with a posted speed limit of 40 miles per hour through the study area. By the 2040 long term horizon, if future traffic volume projections are realized based on a 2 percent annual growth rate (almost a 50 percent increase in traffic), the roadway may need to be improved to be an eight-lane roadway providing four through lanes of travel in each direction.



BUCKLEY YARD  
AURORA, CO  
SITE AREA

FIGURE 2

### Alameda Parkway

Alameda Parkway is a six-lane divided roadway providing three through lanes of travel, eastbound and westbound, with a posted speed limit of 40 miles per hour through the study area. By the 2040 long term horizon, the roadway may also need to be improved to be an eight-lane roadway providing four through lanes of travel in each direction if future traffic volume projections are realized.

### Alameda Drive

Alameda Drive is a two-lane undivided roadway providing one through lane of travel, north westbound and south eastbound, with a posted speed limit of 25 miles per hour. Alameda Drive is an unstriped roadway, approximately 35 feet wide.

### Quintero Way

Quintero Way is a two-lane undivided roadway providing one through lane of travel with a posted speed limit of 25 miles per hour. Quintero Way is an unstriped roadway, also approximately 35 feet wide.

### Intersections

The intersection of Alameda Drive and Airport Boulevard is signalized that operates with protected/permissive left turn phasing on the northbound and eastbound approaches and permissive-only left turn phasing on the southbound and westbound approaches. The eastbound approach provides a left turn lane, one through lane, and an exclusive right turn lane. The westbound approach provides a left turn lane and one shared through/right turn lane. The southbound and northbound approaches provide single left turn lanes and three through lanes.

The intersection of Alameda Parkway and Airport Boulevard is signalized and operates with protected-only left turn phasing on the eastbound, northbound, and southbound approaches and protected/permitted left turn phasing on the westbound approach. The eastbound, northbound, and southbound approaches provide dual left turn lanes and three through lanes. The westbound approach provides a single left turn lane, three through lanes, and an exclusive right turn lane.

The intersection of Alameda Parkway and Alameda Drive/Richfield Street is two-way stop controlled with stop signs on the northbound Richfield Street and southbound Alameda Drive

approaches. The eastbound and westbound approaches provide a left turn lane and three through lanes. The northbound and southbound approaches are undesignated and assumed to provide one approach lane for all movements, although these approaches are wide enough to be striped with separate left turn lanes.

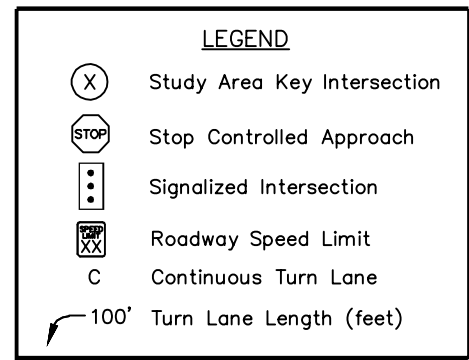
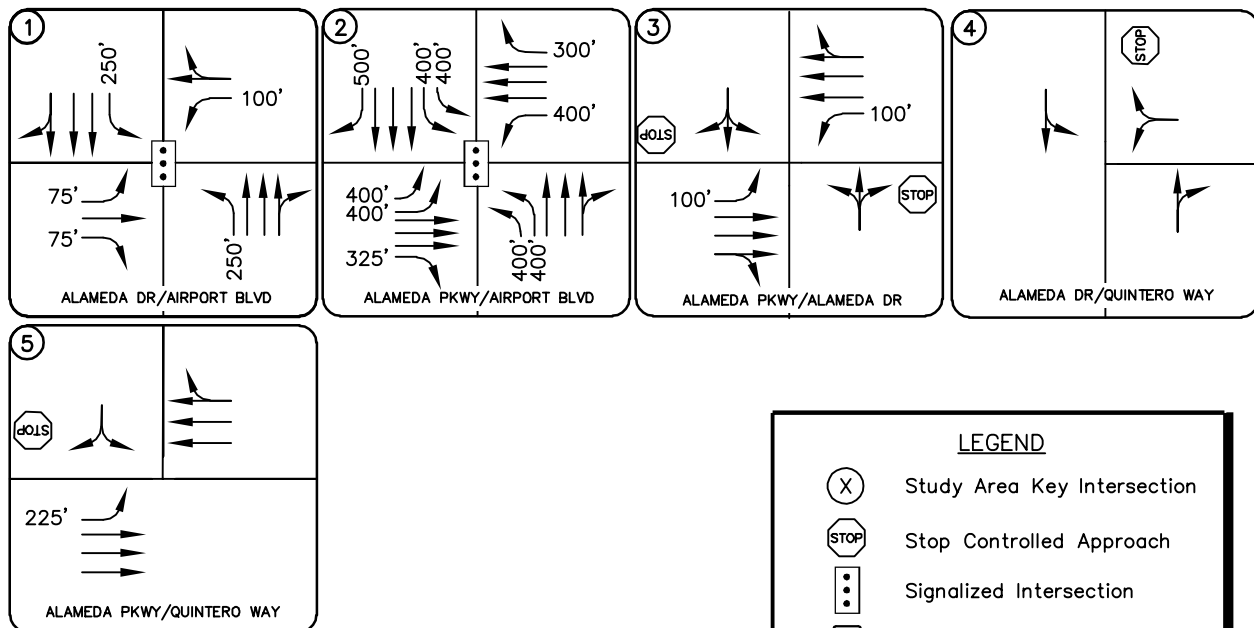
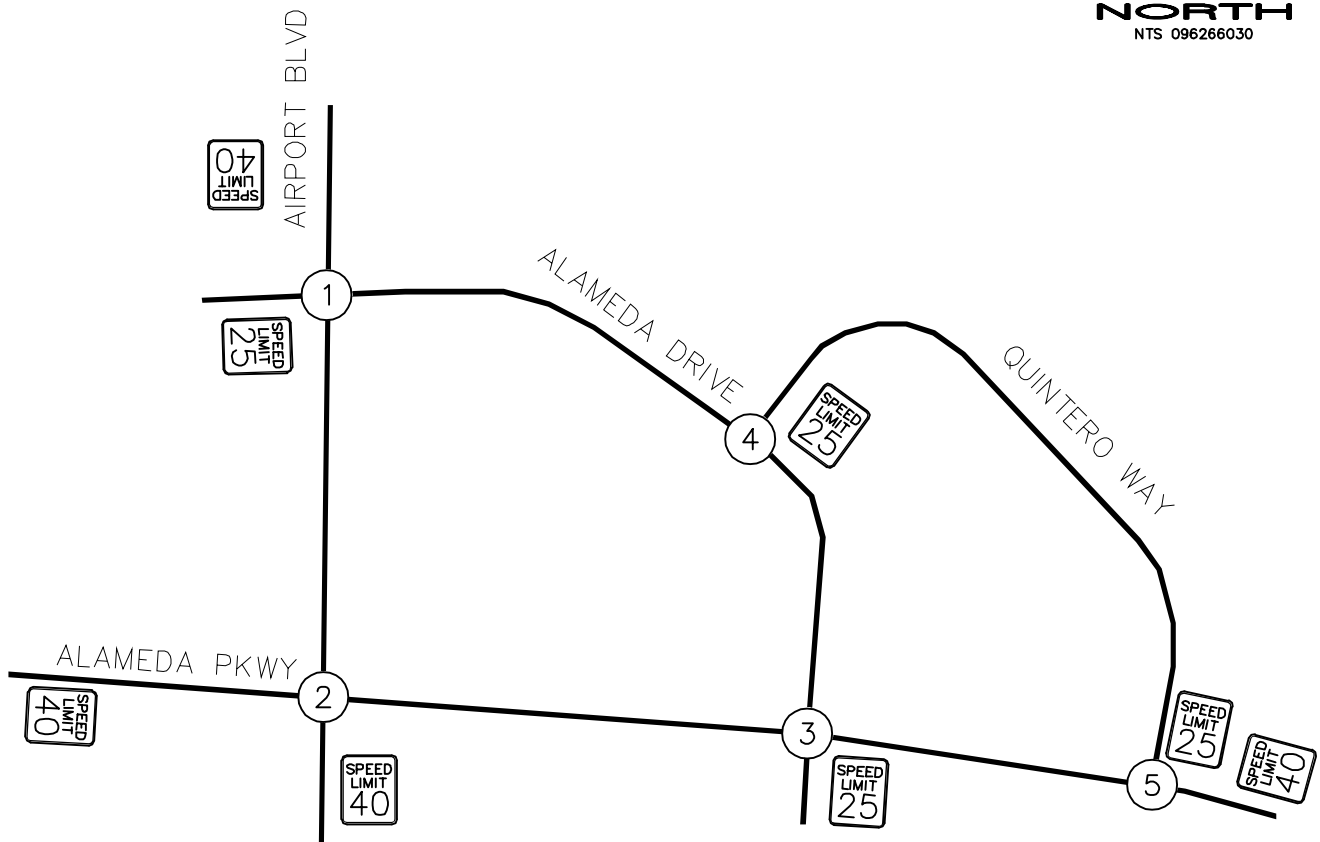
The intersection of Quintero Way and Alameda Drive is unsignalized with stop control on the westbound Quintero Way approach. All three approaches to the intersection provide a single lane for all movements.

The intersection of Alameda Parkway and Quintero Way is stop controlled with a stop sign on the southbound Quintero Way approach. The eastbound approach provides a left turn lane and three through lanes. The westbound approach provides three through lanes. The southbound approach provides one lane for all movements, although wide enough to be striped with separate left turn and right turn lanes.

Existing intersection lane configurations are shown in **Figure 3**.

### **3.3 Existing Traffic Volumes**

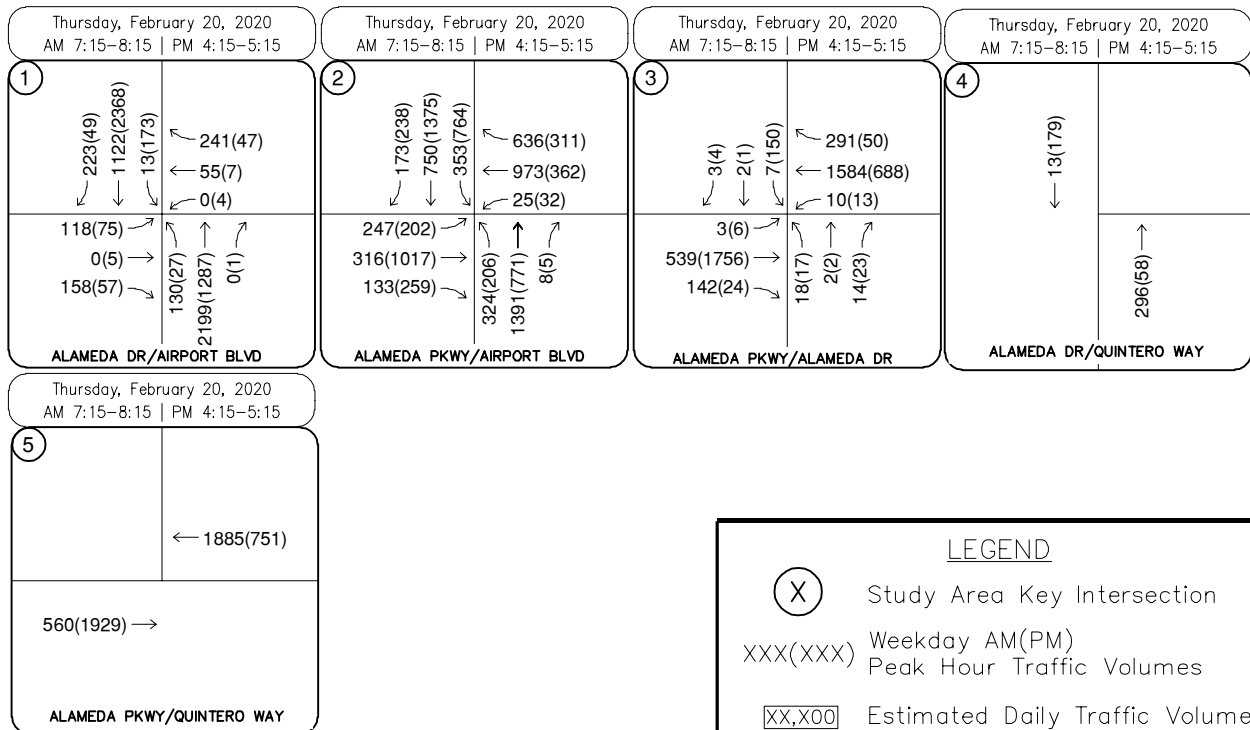
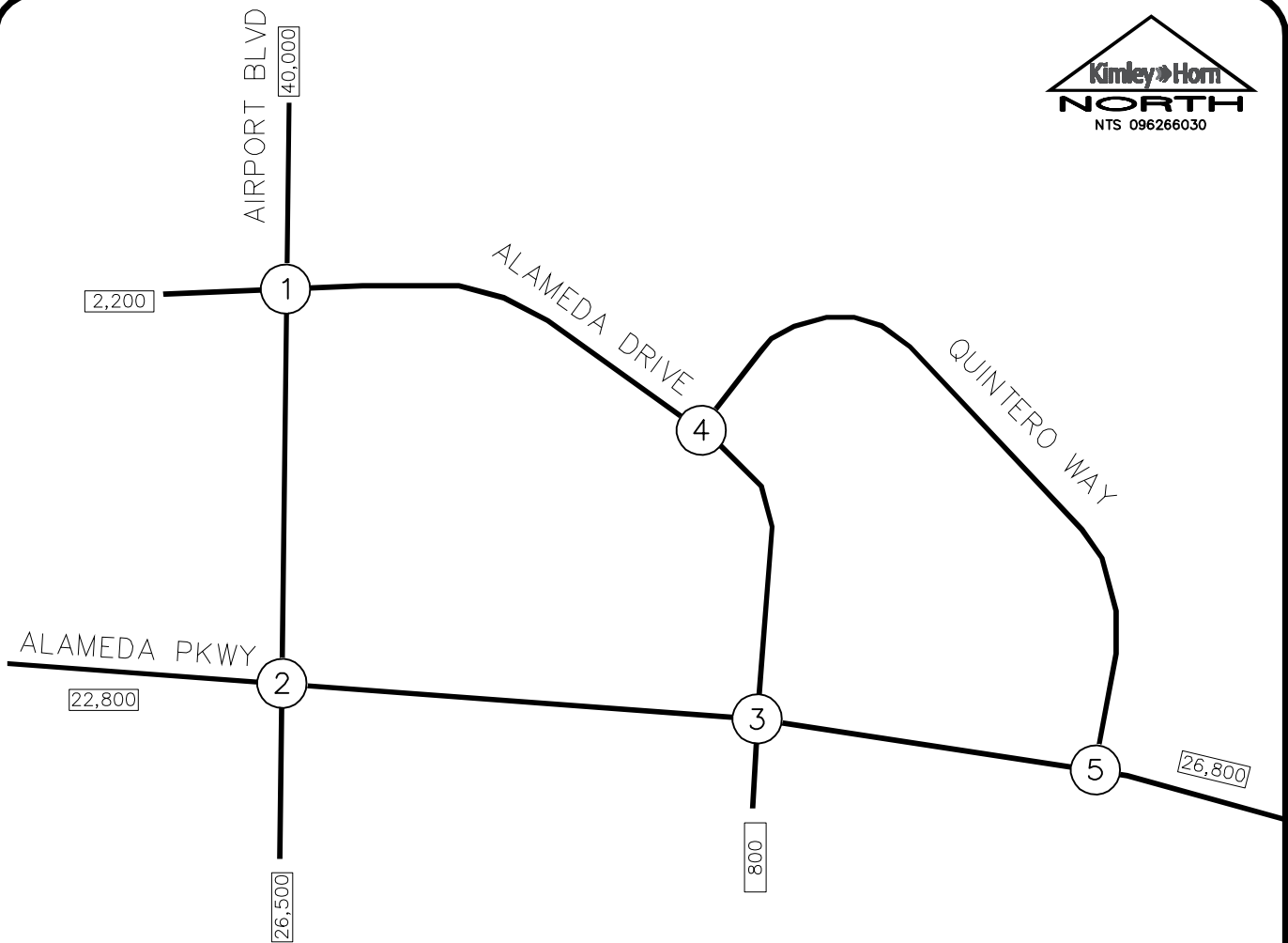
Existing peak hour turning movement counts were conducted at the key intersections on Thursday, February 20, 2020. The counts were conducted in 15-minute intervals during the morning and afternoon peak hours of adjacent street traffic from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. Existing turning movement counts are shown in **Figure 4** with count sheets provided in **Appendix A**.



BUCKLEY YARD  
AURORA, CO  
EXISTING LANE CONFIGURATIONS  
AND CONTROL

FIGURE 3





**LEGEND**

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

BUCKLEY YARD  
AURORA, CO  
EXISTING TRAFFIC VOLUMES

FIGURE 4

## 4.0 FUTURE CONDITIONS

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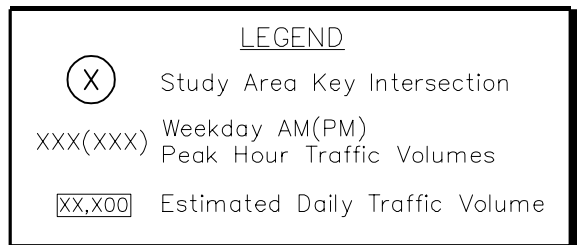
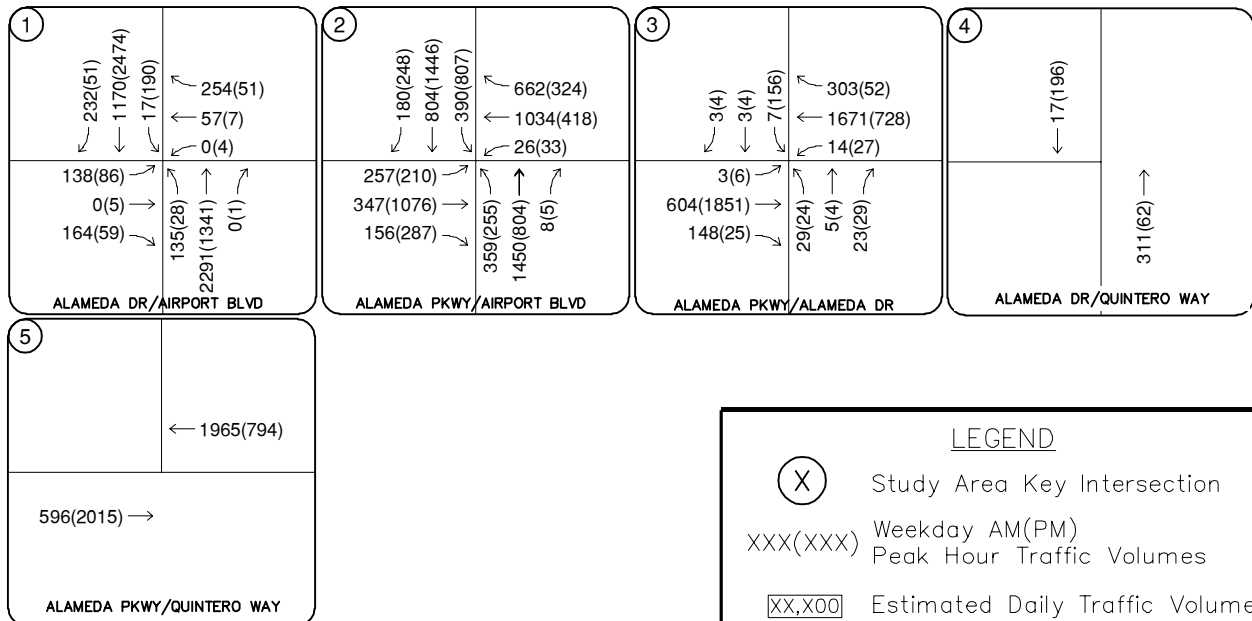
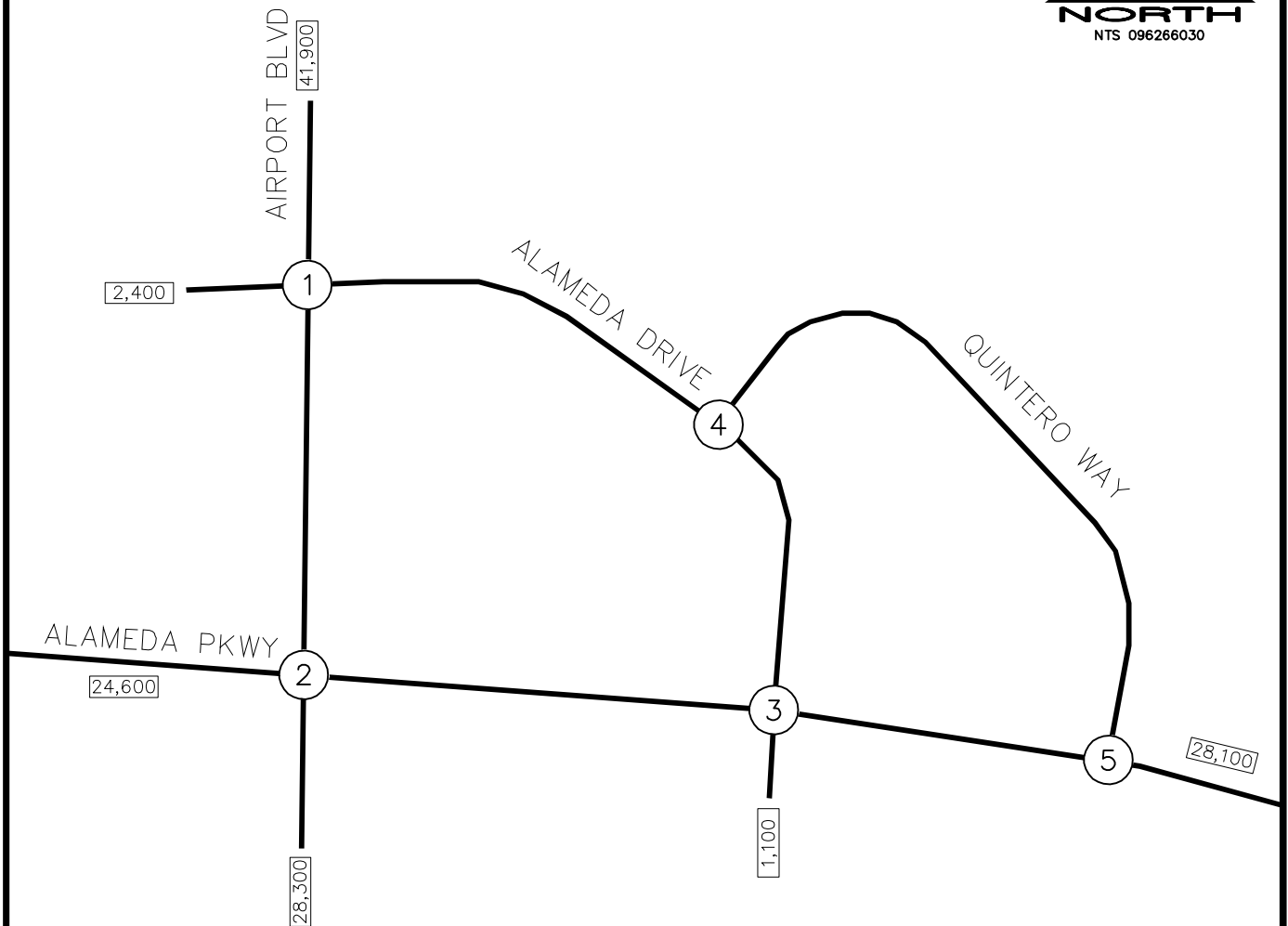
### 4.1 Proposed Project Access

Direct access to the retail area is proposed at two accesses along the east side of Airport Boulevard, one access along the south side of Alameda Drive, and one access along the north side of Alameda Parkway. The Quintero Way and Airport Boulevard intersection, which is the southern access along Airport Boulevard is approximately 550 feet from the intersection of Alameda Parkway and Airport Boulevard (measured center to center) this access is proposed as a right-in/right out restricted access. The north access along Airport Boulevard is approximately 800 feet from the intersection of Alameda Parkway and Airport Boulevard (measured center to center) this access is also proposed as a right-in/right out restricted access. The access along Alameda Drive is proposed as a full movement access that will be located approximately 300 feet east of Airport Boulevard (measured center to center). The access along Alameda Parkway is proposed as a right-in/right-out restricted access that will be located approximately 350 feet east of Airport Boulevard (measured center to center).

Direct access to the west residential development area is proposed at three additional accesses along Alameda Drive, while cross access will be shared and available through the retail area access as described previously. One access along Alameda Drive is proposed to align with Quintero Way. Direct access to the eastern residential development area is proposed at three access along Quintero Way and one access along Alameda Drive to align with an access for the western residential area. The north access along Quintero Way is approximately 300 feet from the intersection of Quintero Way and Alameda Drive. The south access along Quintero Way is approximately 350 feet from the intersection of Quintero Way and Alameda Parkway (measured center to center). All accesses are shown in the conceptual site plan in **Appendix F**.

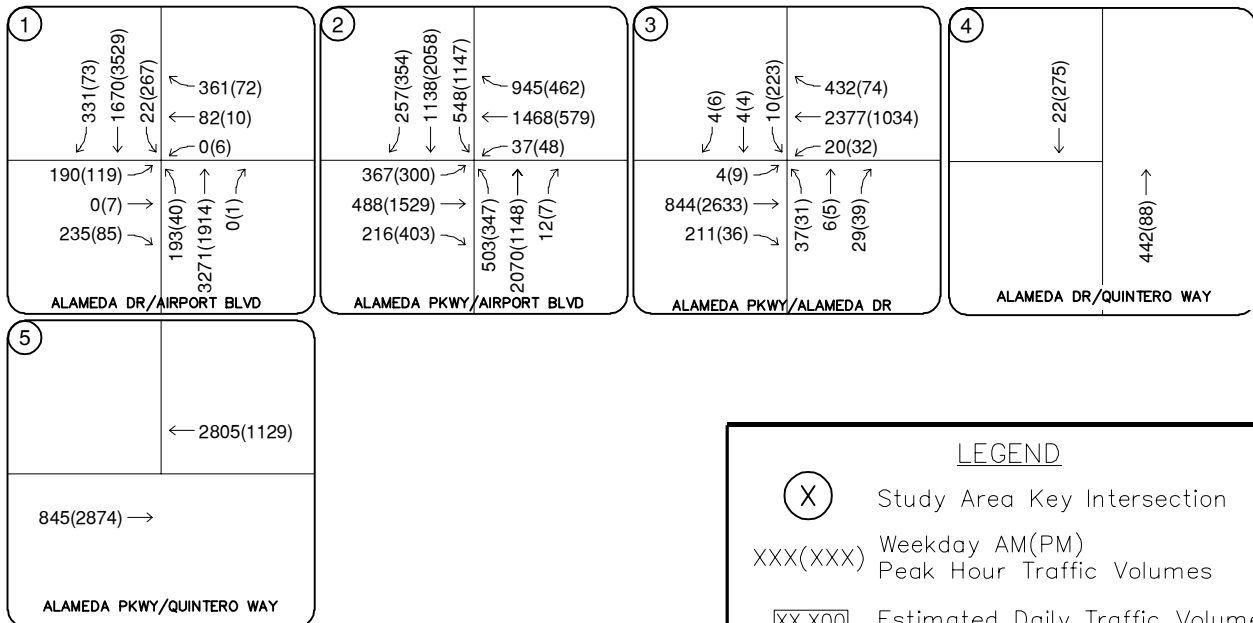
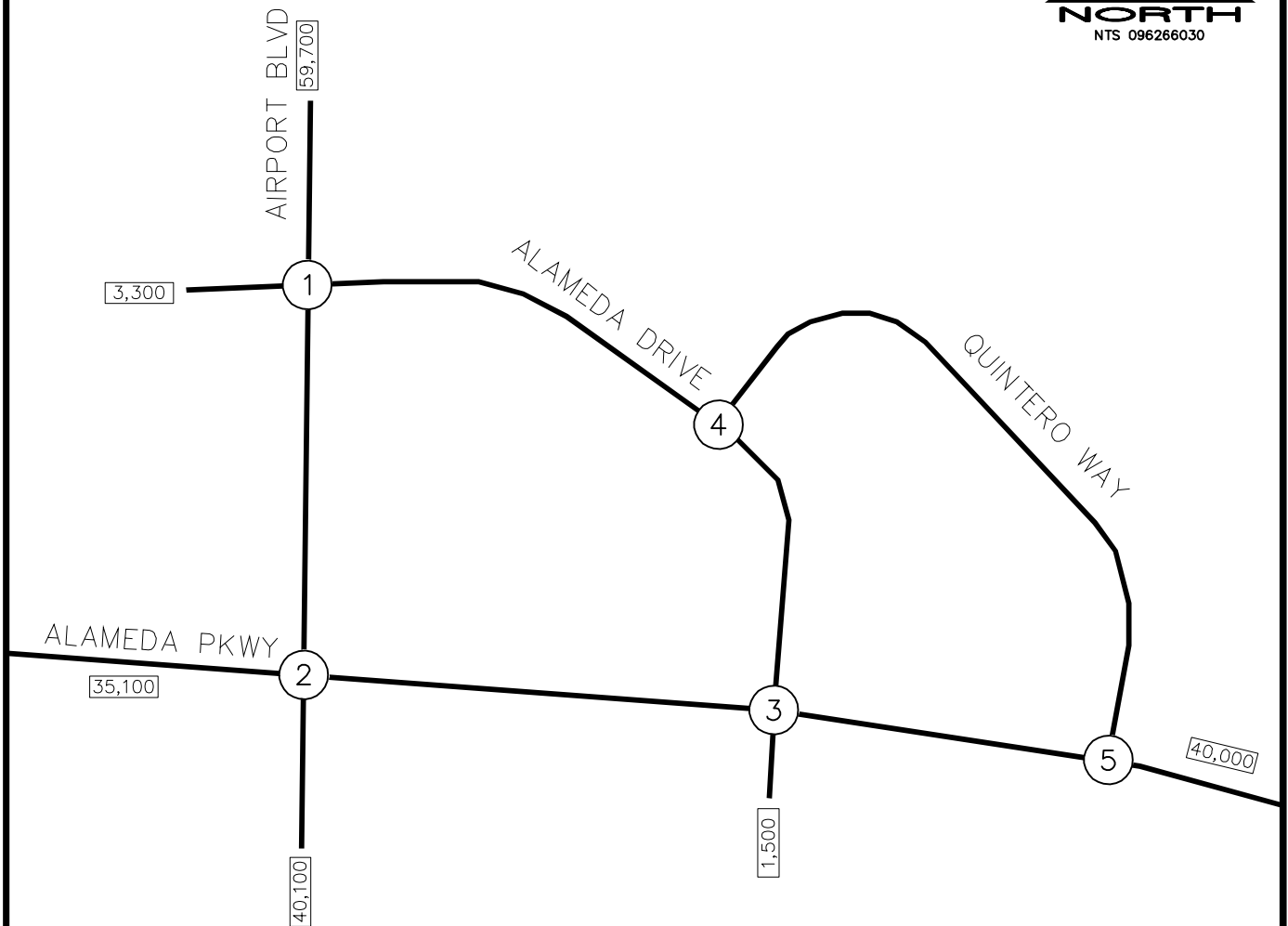
### 4.2 Unspecified Development Traffic Growth

Based on the standard growth rate given by the City of Aurora, an annual growth rate of two (2) percent per year was used to calculate 2022 and 2040 background traffic volumes at all key study area intersections. The calculated background traffic volumes for 2022 and 2040 are shown in **Figure 5** and **Figure 6**, respectively.



BUCKLEY YARD  
AURORA, CO  
2022 BACKGROUND TRAFFIC VOLUMES

FIGURE 5



**LEGEND**

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

BUCKLEY YARD  
AURORA, CO  
2040 BACKGROUND TRAFFIC VOLUMES

FIGURE 6

## 5.0 PROJECT TRAFFIC CHARACTERISTICS

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### 5.1 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.

Currently two different options are anticipated as being possible for the retail portion of Buckley Yard for purposes of this traffic study development. Option One includes a 12,000 square foot medical/dental office, a 1,000 square foot coffee shop, a 5,000 square foot fast food restaurant with drive thru, a 4,000 square foot drive thru car wash, and a 16 fueling position gas station with convenience market. Option Two includes a 4,000 square foot drive-in bank, a 1,000 square foot coffee shop, a 5,000 square foot fast food restaurant with drive thru, a 4,000 square fast food restaurant with drive thru, and a 16 fueling position gas station with convenience market. It was found that the second option of retail development generated more traffic and was therefore used in this study to provide a more conservative analysis.

As mentioned previously, the project is anticipated to include commercial lots along Airport Boulevard and residential homes within the eastern portion of the project. For purposes of this traffic study, Buckley Yard was assumed to include the following:

- Lot 1: 4,000 SF Drive-in Bank
- Lot 2: 1,000 SF Coffee Shop with Drive-Thru
- Lot 3: 5,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 4: 4,000 SF Fast Food Restaurant with Drive-Thru Window
- Lot 5: 16 Fueling Position Gasoline Station with Convenience Market
- West Residential: 52 Paired Homes and 113 Townhomes
- East Residential: 49 Single Family Detached Housing Units and 94 Paired Homes

For this study, Kimley-Horn used the ITE Trip Generation Report average rate equations that apply to Single Family Detached Housing (ITE Code 210), Multifamily Housing (Low-Rise) (ITE

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<sup>1</sup> Institute of Transportation Engineers, *Trip Generation Manual*, Tenth Edition, Washington DC, 2017.

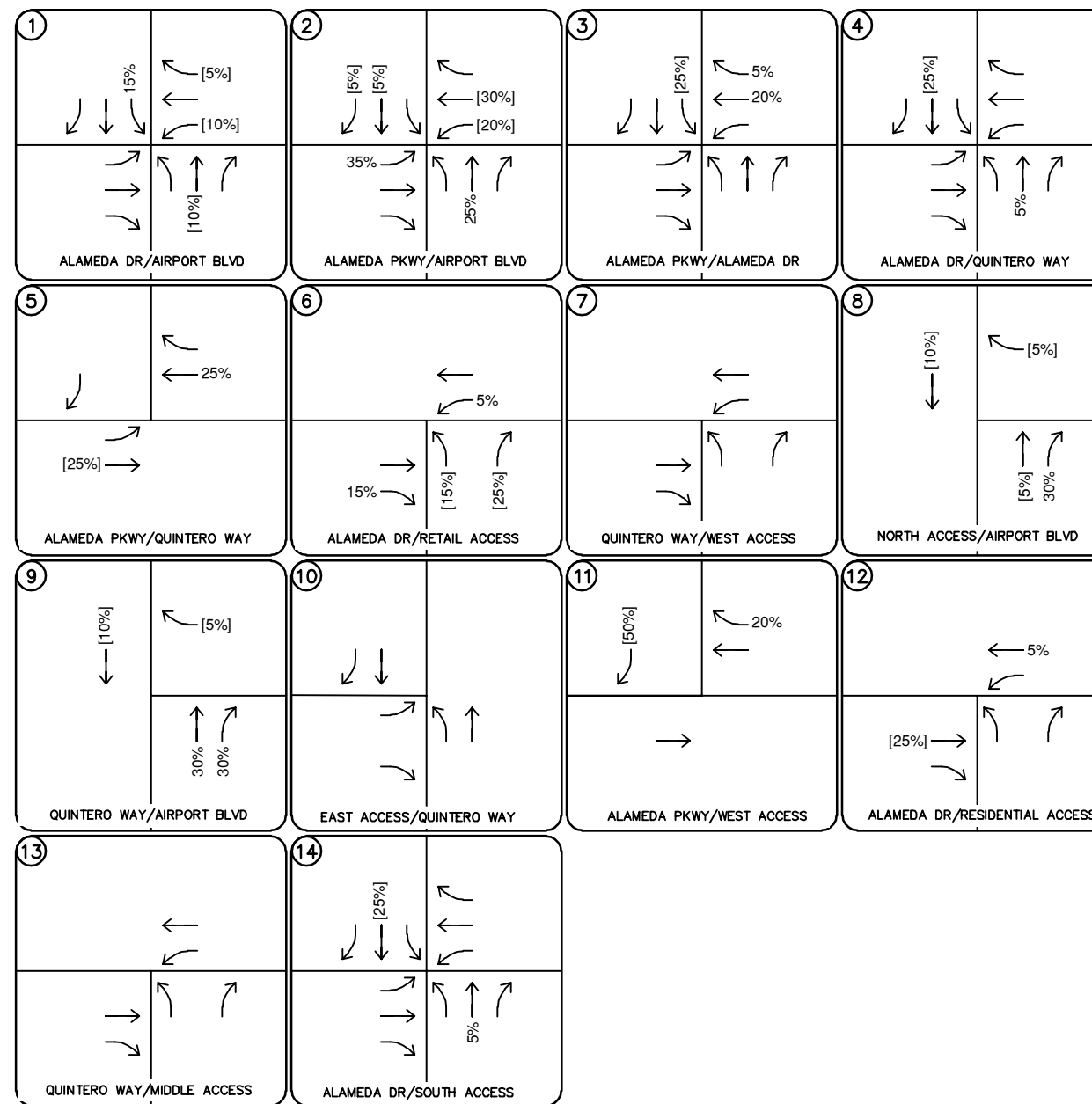
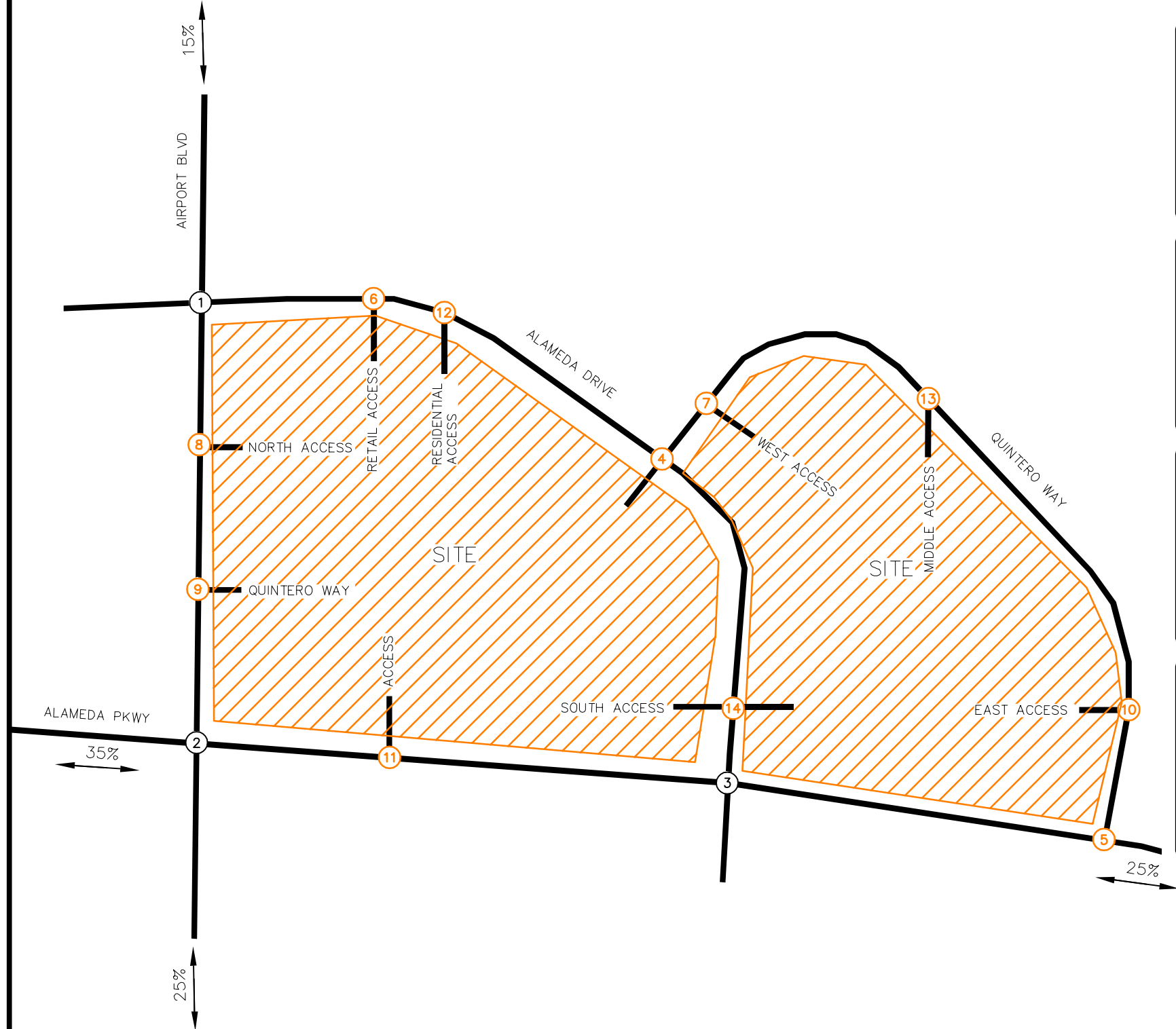
220), Drive-in Bank (ITE 912), Fast Food Restaurant with Drive-Thru Window (ITE 934), Coffee/Donut Shop with Drive-Thru (ITE 937), and Gasoline Station with Convenience Market (ITE 945) for traffic associated with the development. Since the Buckley Yard Project development is proposed to contain a mix of uses, internal capture trips are expected to occur on site as well. These internal capture trips are shared trips from people already within the development, either living or visiting, patronizing two or more businesses. These shared trips reduce the number of total external trips and were calculated directly per the ITE procedure. Based on trips after internal capture, the new development areas as part of the proposed Buckley Yard Project is anticipated to generate an additional 9,588 weekday external daily trips with 835 of these trips occurring during the morning peak hour and 678 of these trips occurring during the afternoon peak hour. The project traffic generation is shown in **Table 1** while the trip generation calculation worksheet is referenced in **Appendix B**.

**Table 1 – Buckley Yard Trip Generation**

Parcel Number	Land Use	Quantity		Vehicle Trips						
		Square Foot	Units	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
					In	Out	Total	In	Out	Total
1	Drive-in Bank (ITE 912)	4,000		402	22	16	38	41	41	82
2	Coffee/Donut Shop with Drive-Thru (937)	1,000		820	45	44	89	22	22	44
3 & 4	Fast-Food Restaurant w/ Drive-Thru (934)	9,000		4,240	185	177	362	153	141	294
5	Gasoline Station w/ Convenience Market (945)		16	3,286	102	98	200	114	110	224
	Single-Family Detached Housing (210)		195	1,842	36	108	144	121	72	193
	Multifamily Housing (Low-Rise) (220)		113	828	12	40	52	40	23	63
Total Site Generated Trips				11,418	402	483	885	491	409	900
<b>Net Trips after Internal Capture</b>				<b>9,588</b>	<b>377</b>	<b>458</b>	<b>835</b>	<b>380</b>	<b>298</b>	<b>678</b>

## 5.2 Trip Distribution

Distribution of site traffic was based on the area street system characteristics, existing traffic patterns and volumes, existing demographic information, and the proposed access and future roadway 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 direction. For purposes of this study, the trip generation was split up into three parcels Retail, West Residential, and East Residential. **Figures 7, 8, and 9** illustrates the expected trip distribution for the three parcels.

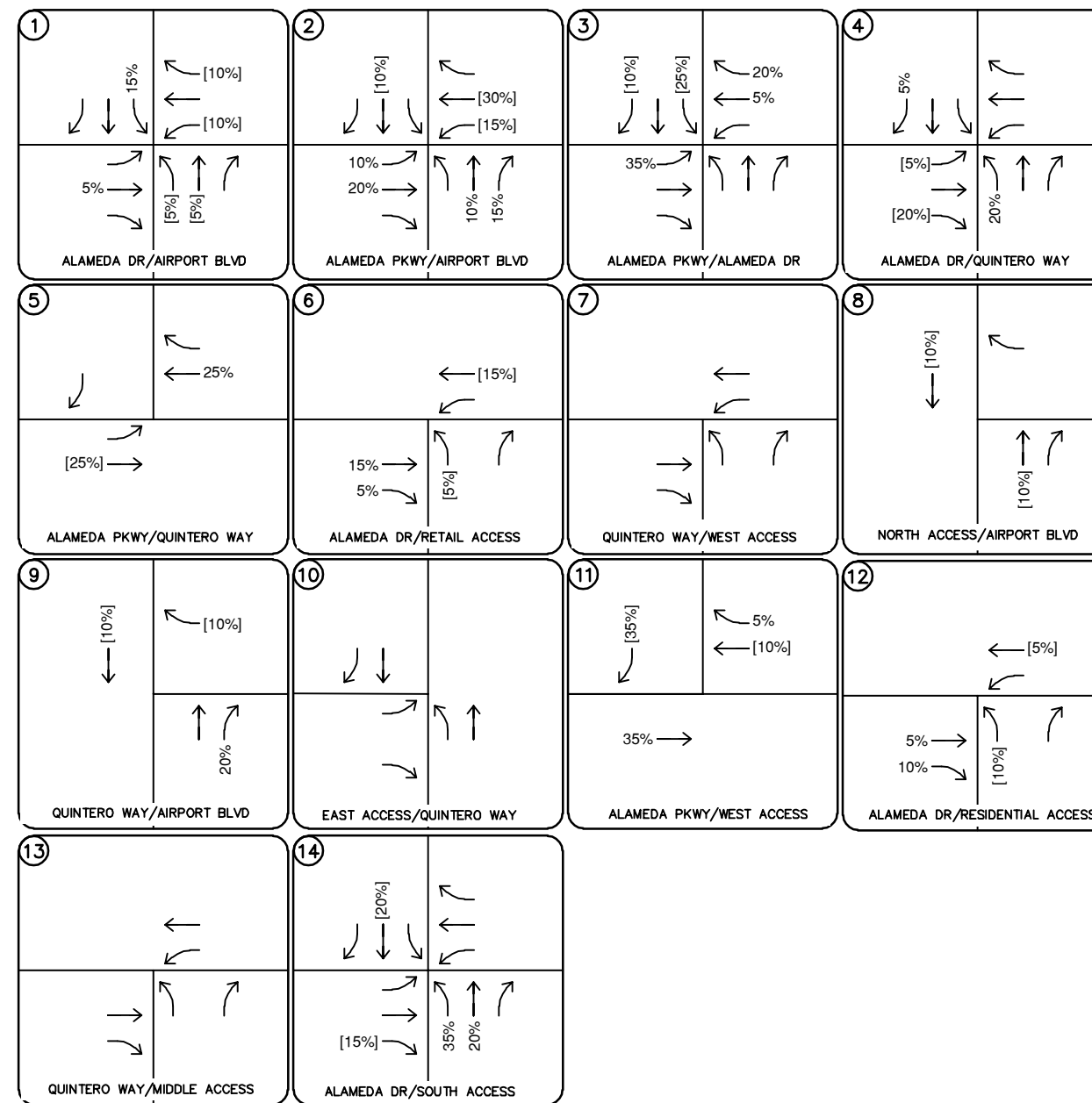
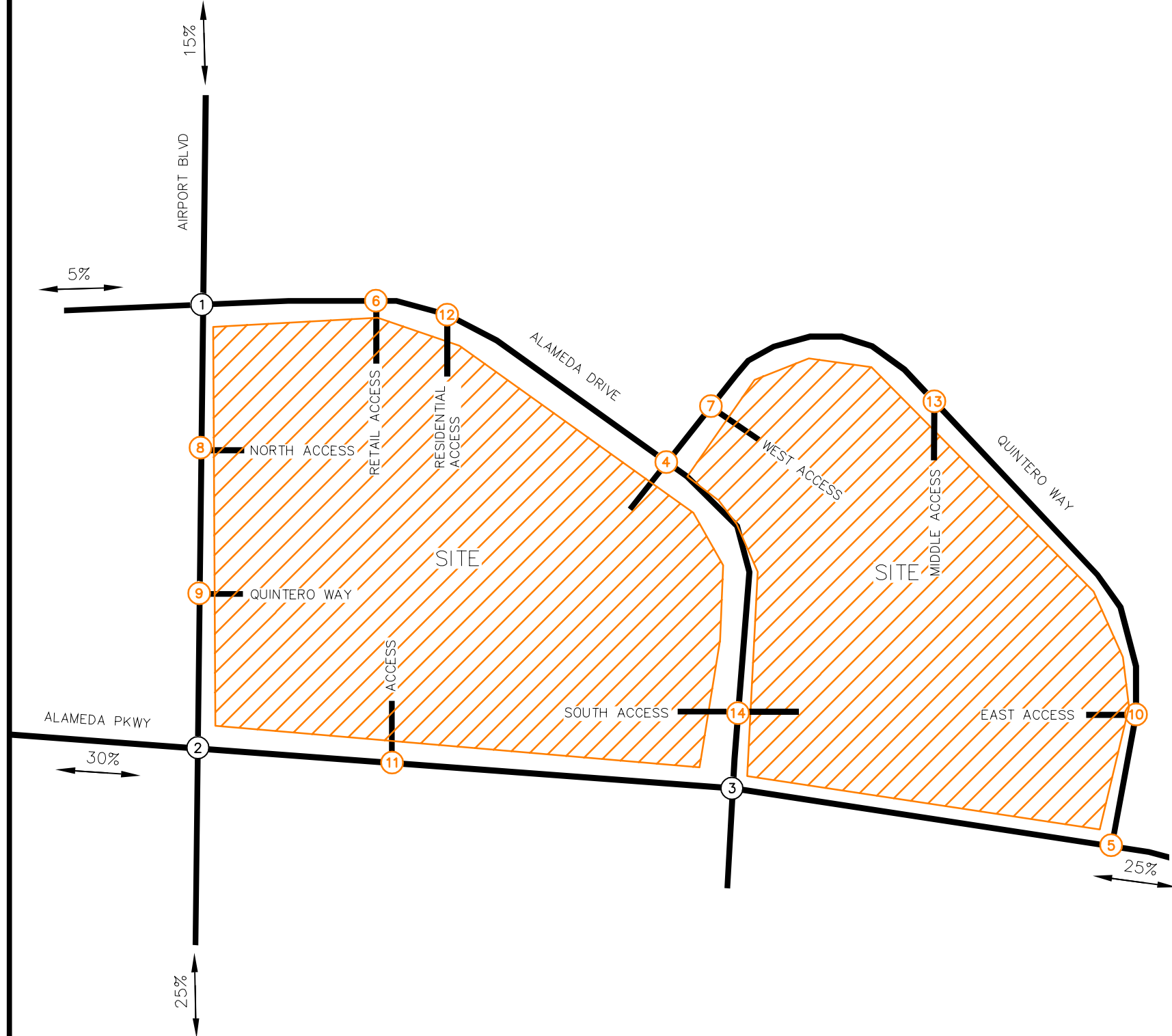


**LEGEND**

● Study Area Key Intersection

XX%[XX%] Entering[Exiting] Trip Distribution Percentage

FIGURE 7



BUCKLEY YARD  
AURORA, CO  
WEST RESIDENTIAL PROJECT TRIP DISTRIBUTION

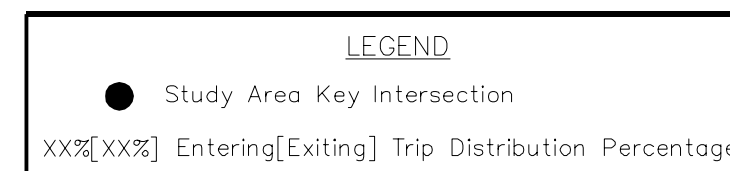
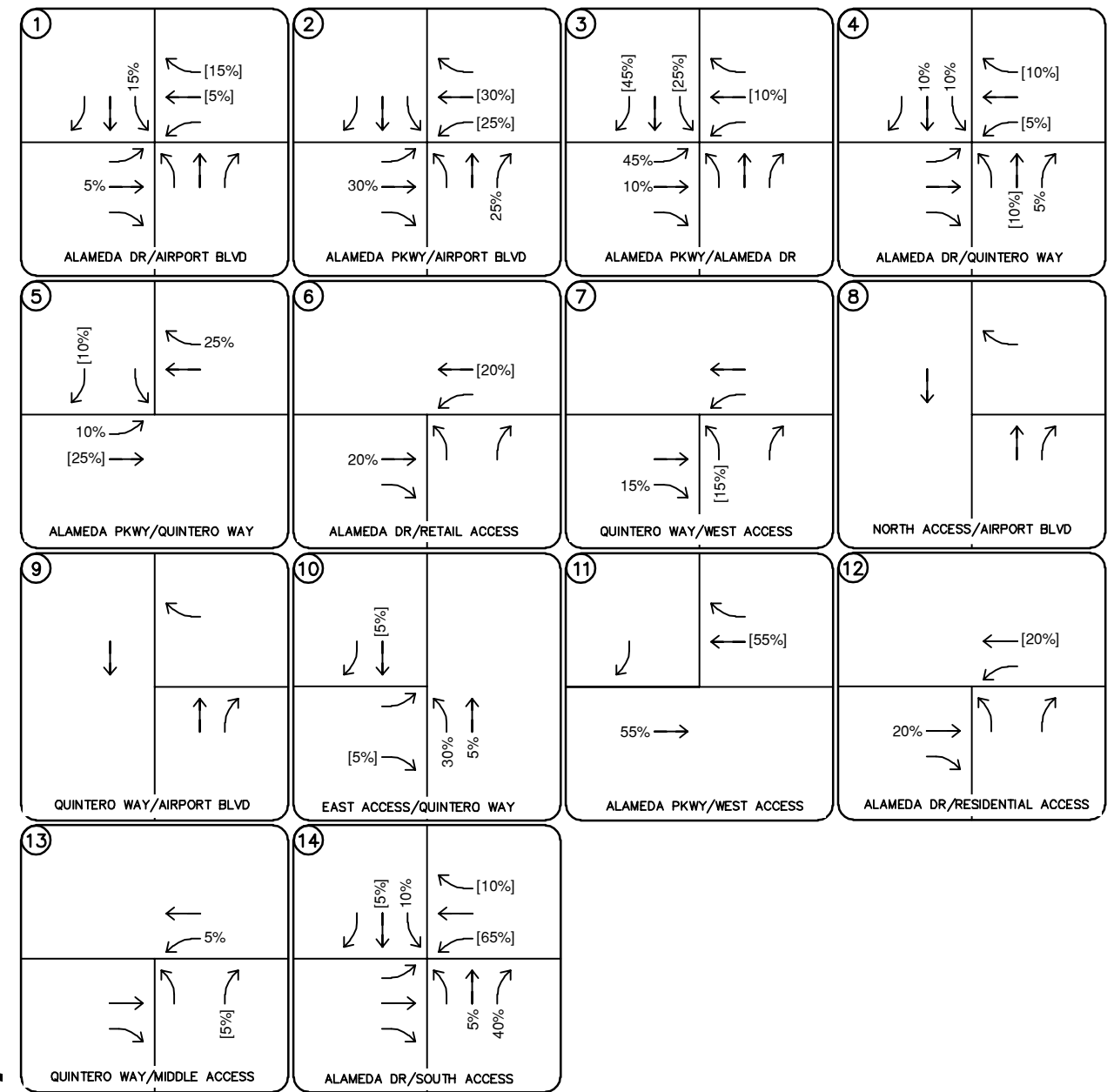
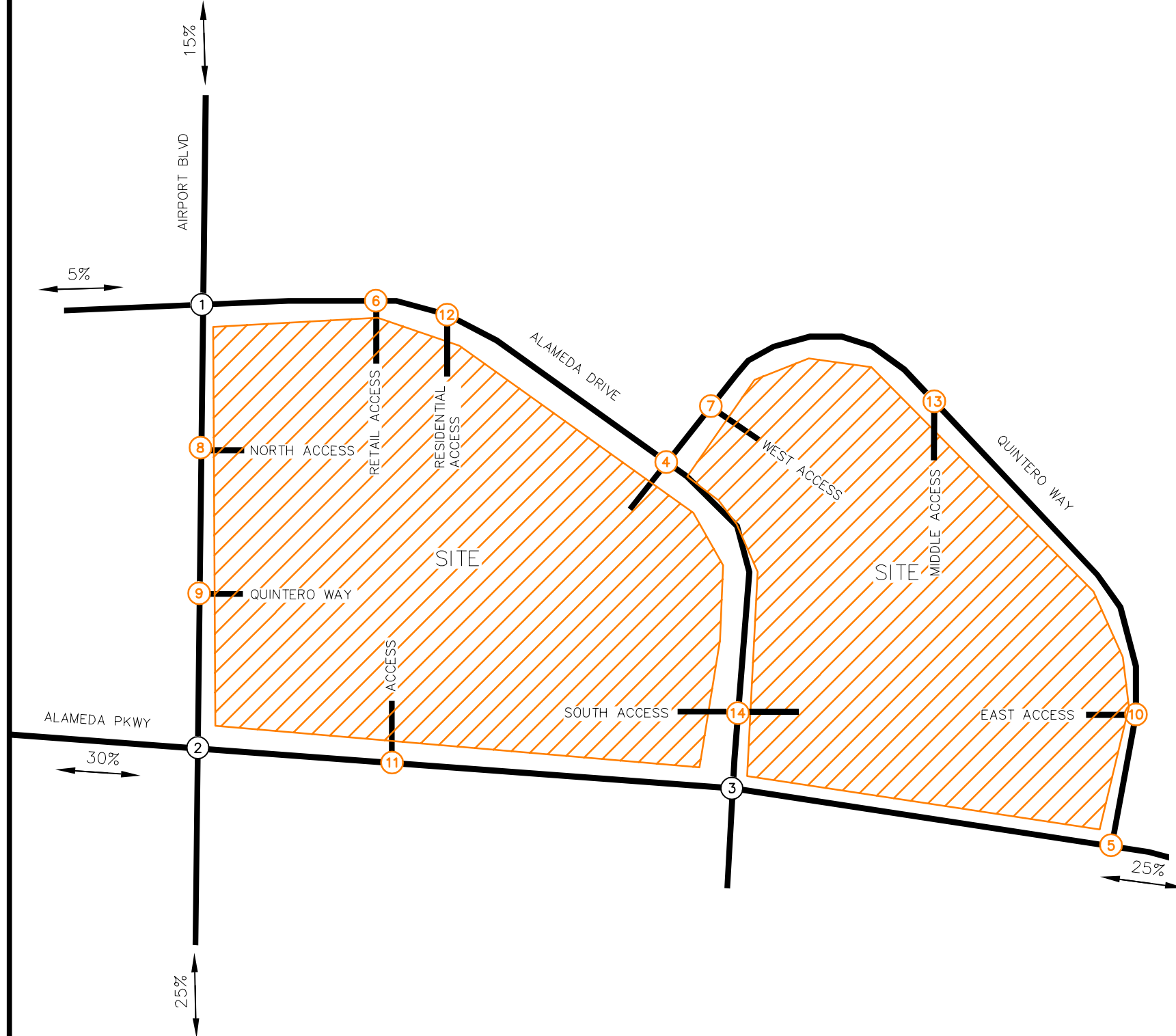


FIGURE 8





BUCKLEY YARD  
AURORA, CO  
EAST RESIDENTIAL PROJECT TRIP DISTRIBUTION

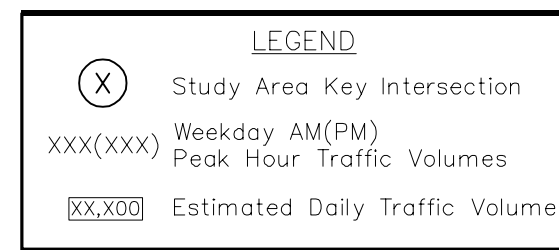
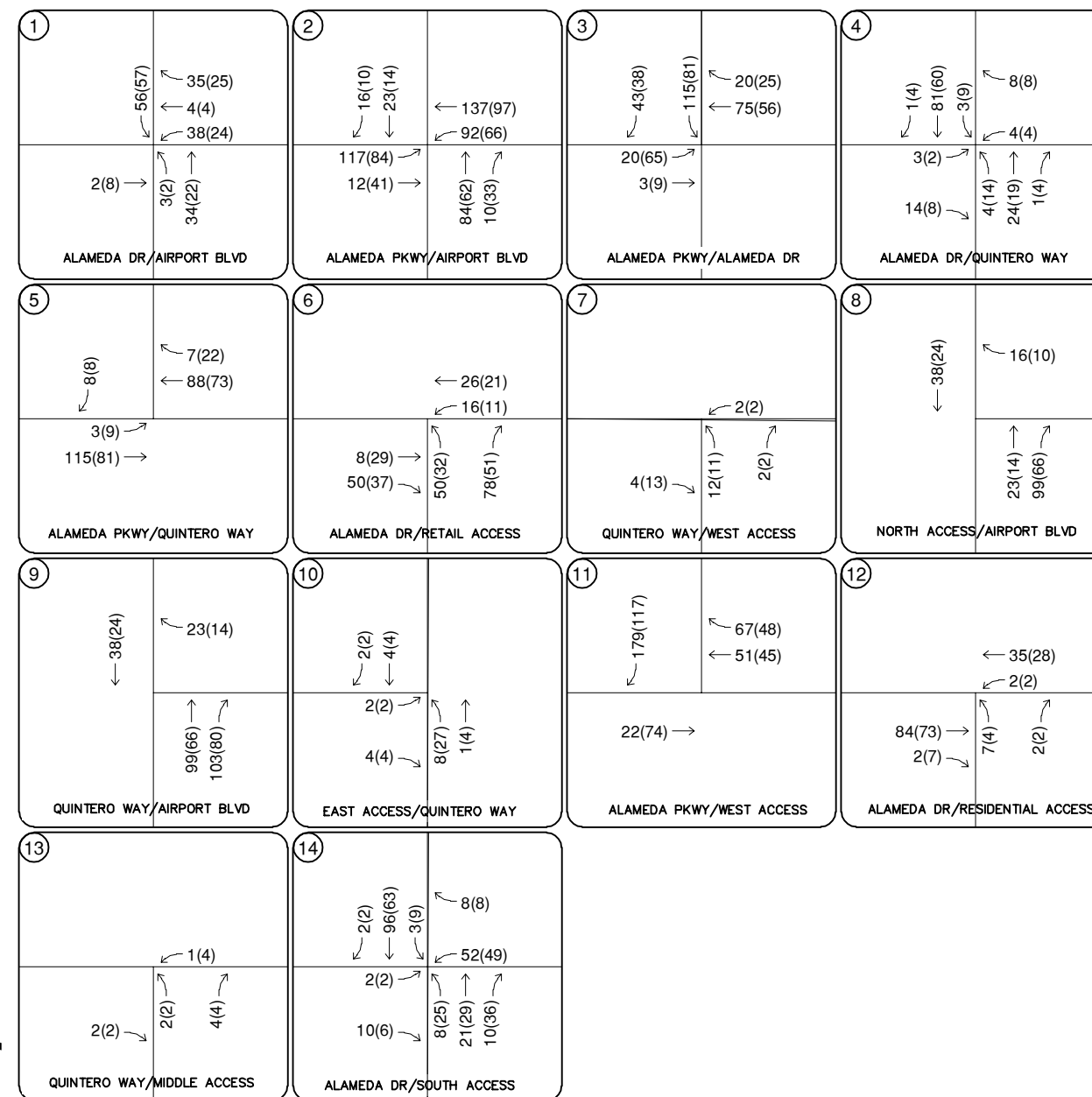
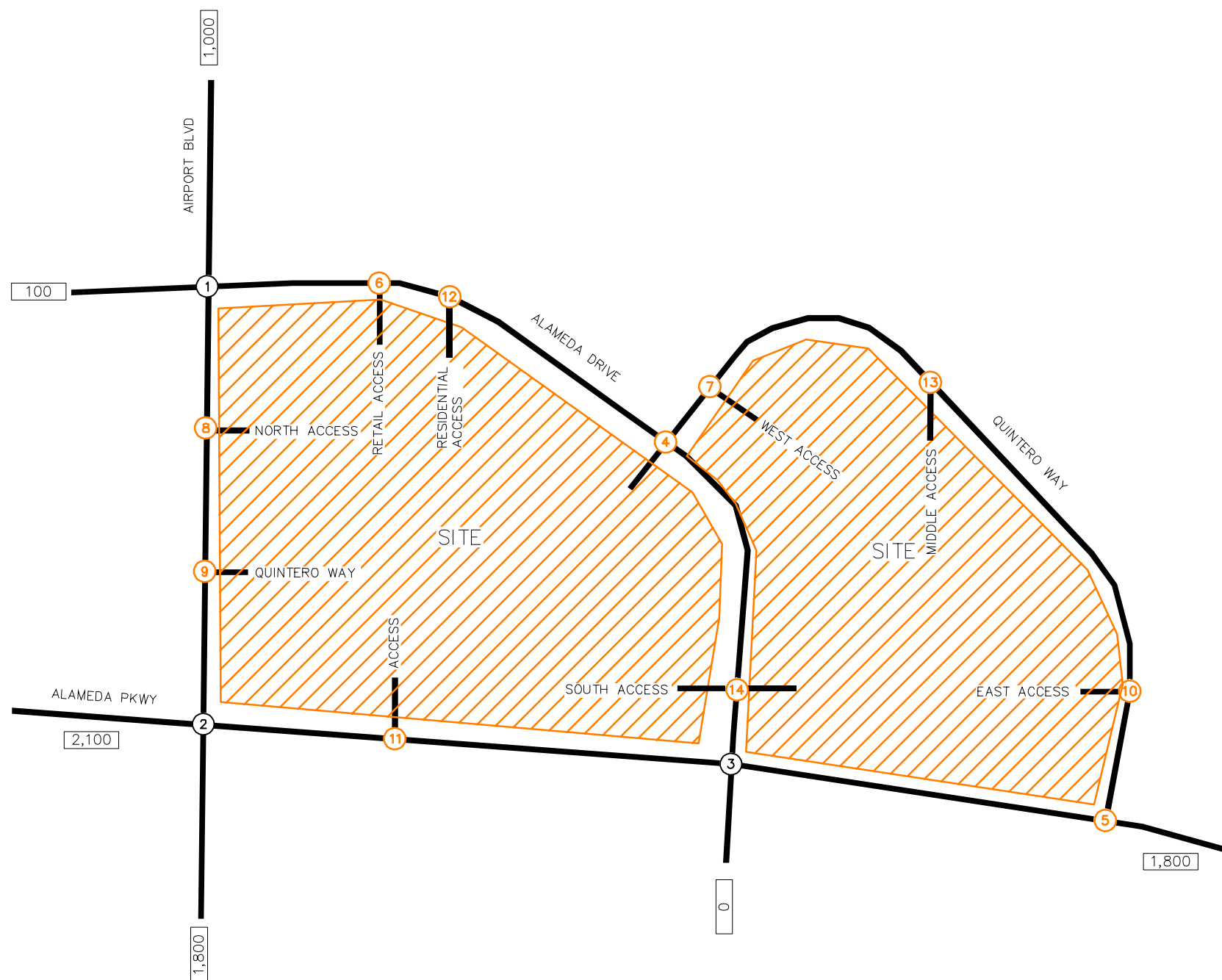
FIGURE 9

### **5.3 Traffic Assignment**

Traffic assignment was obtained by applying the distributions from the previous **Figures 7, 8, and 9** to the estimated traffic generation of the project shown in **Table 1**. The traffic assignment is shown in **Figure 10**.

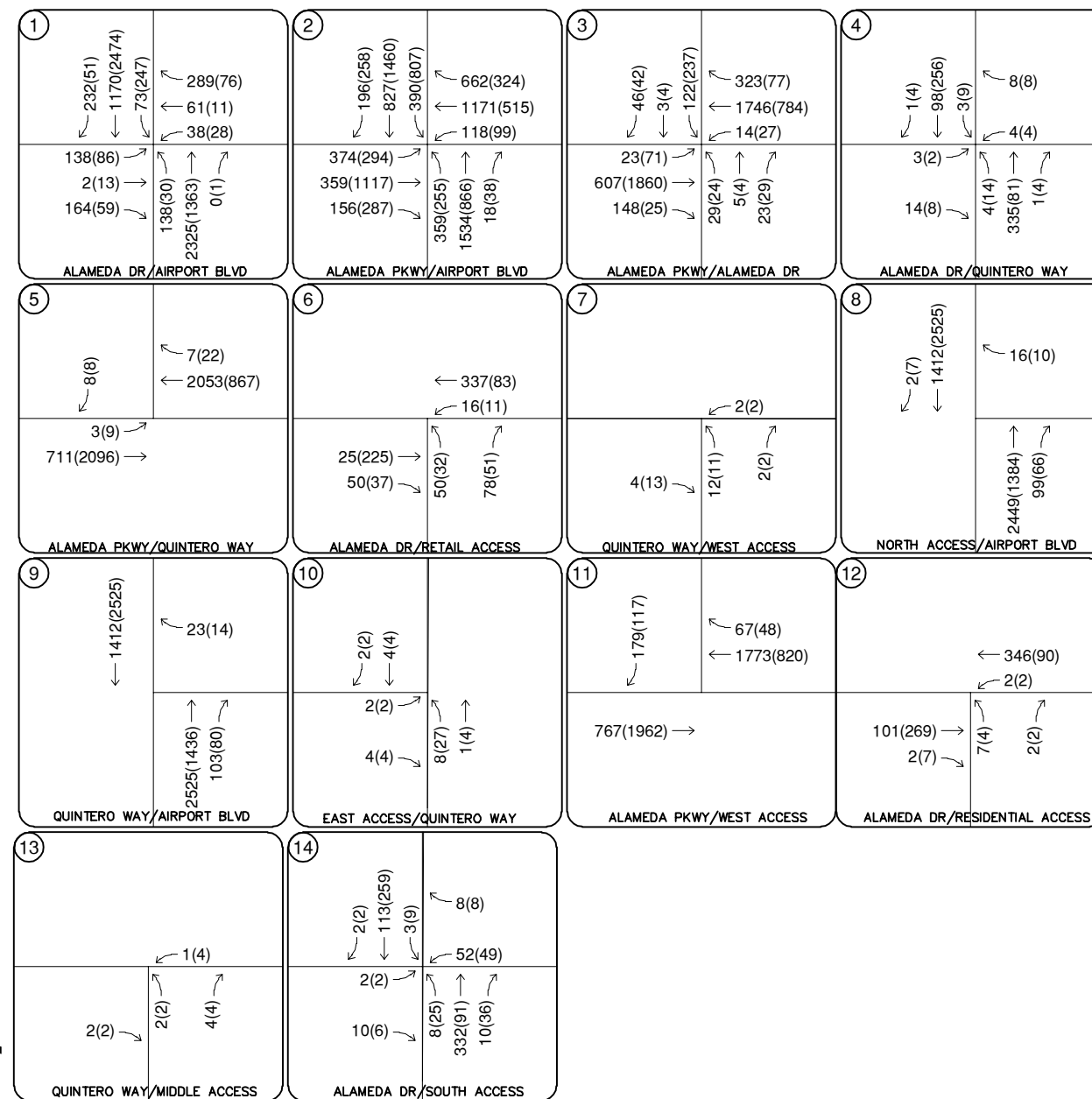
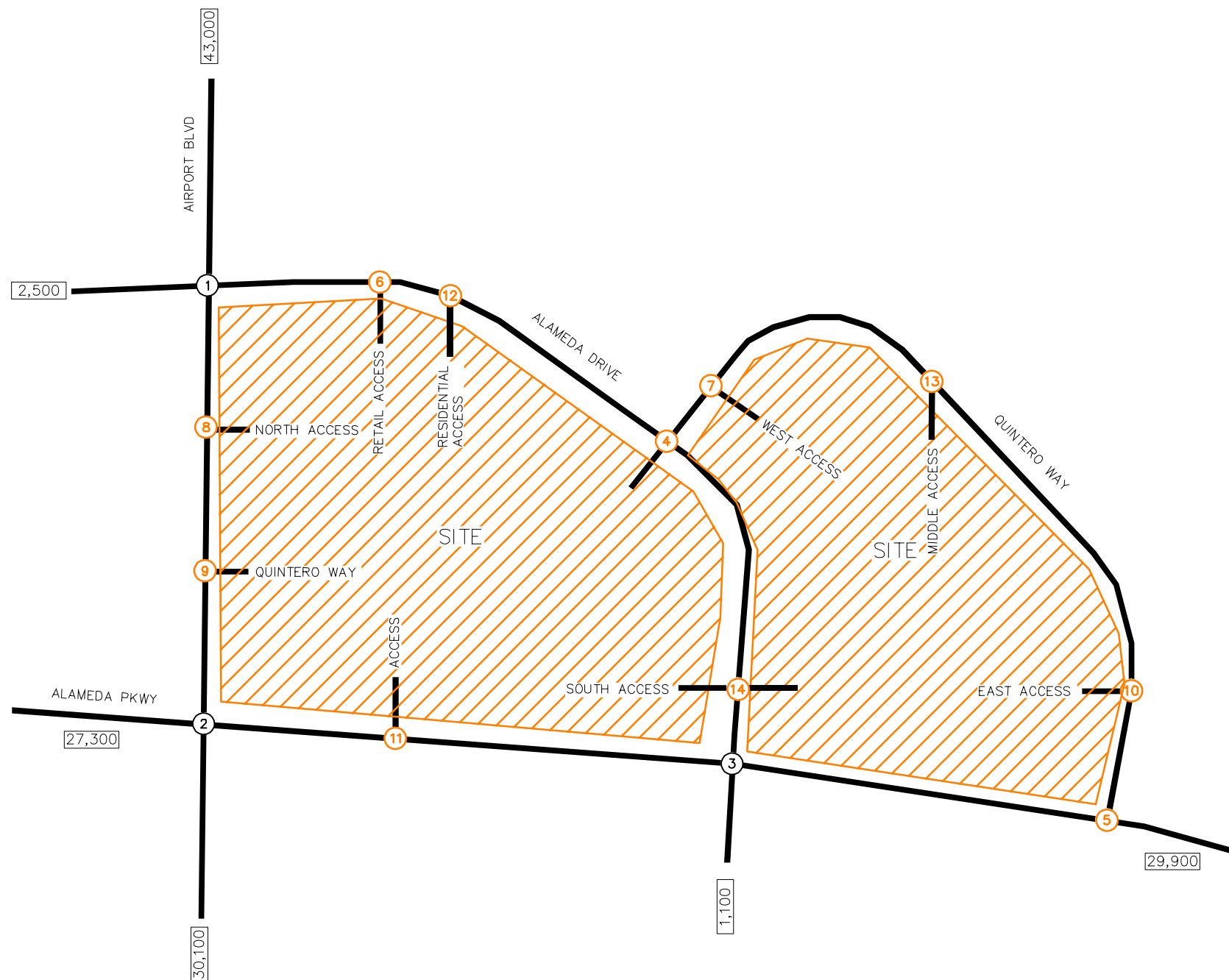
### **5.4 Total (Background Plus Project) Traffic**

Project traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2022 horizon. **Figure 11** illustrates the background plus project traffic volumes for the 2022 horizon at the study key intersections. The 2040 total full buildout traffic volumes for the study area are shown in **Figure 12**.



BUCKLEY YARD  
AURORA, CO  
PROJECT TRAFFIC ASSIGNMENT

FIGURE 10



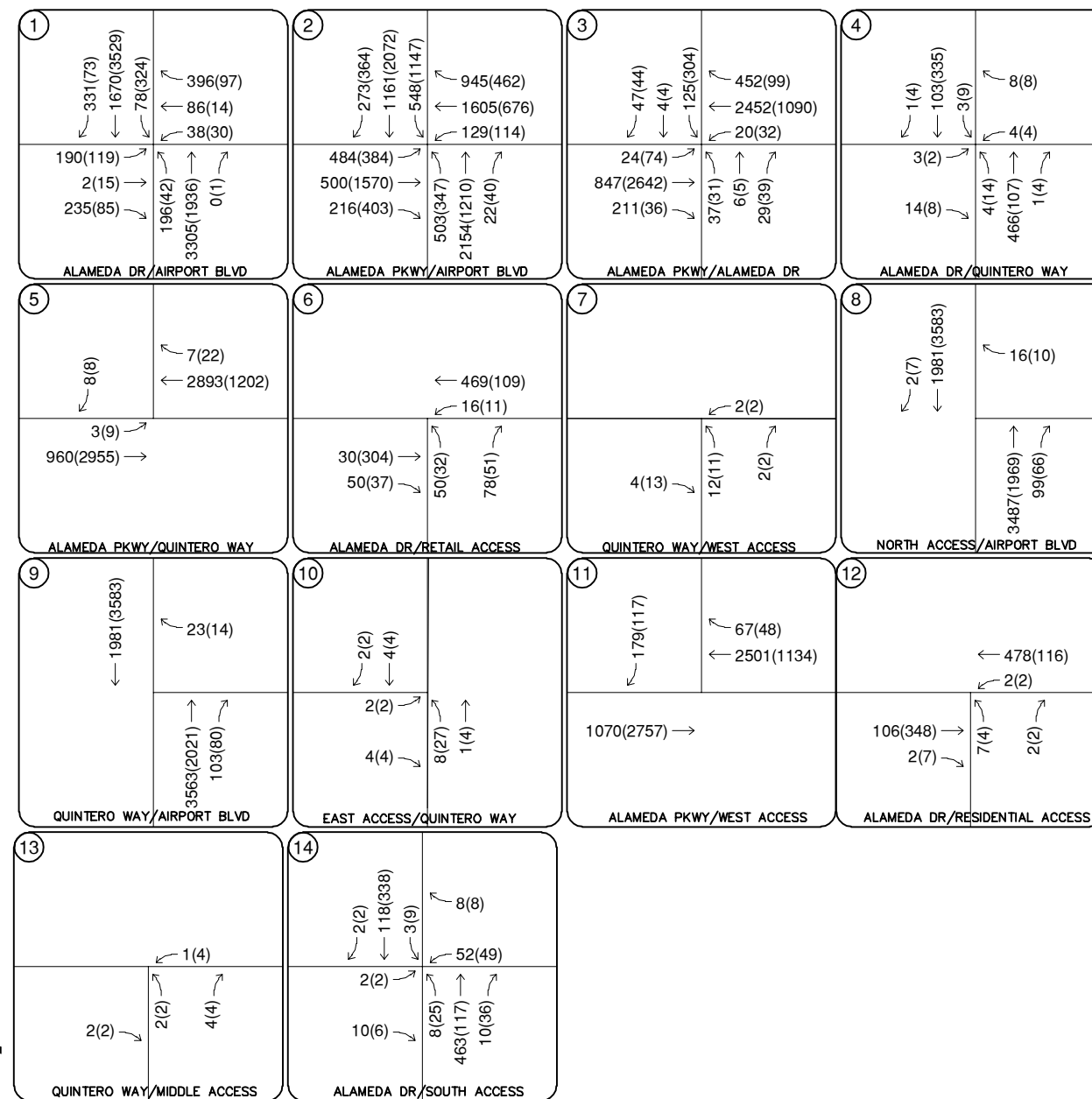
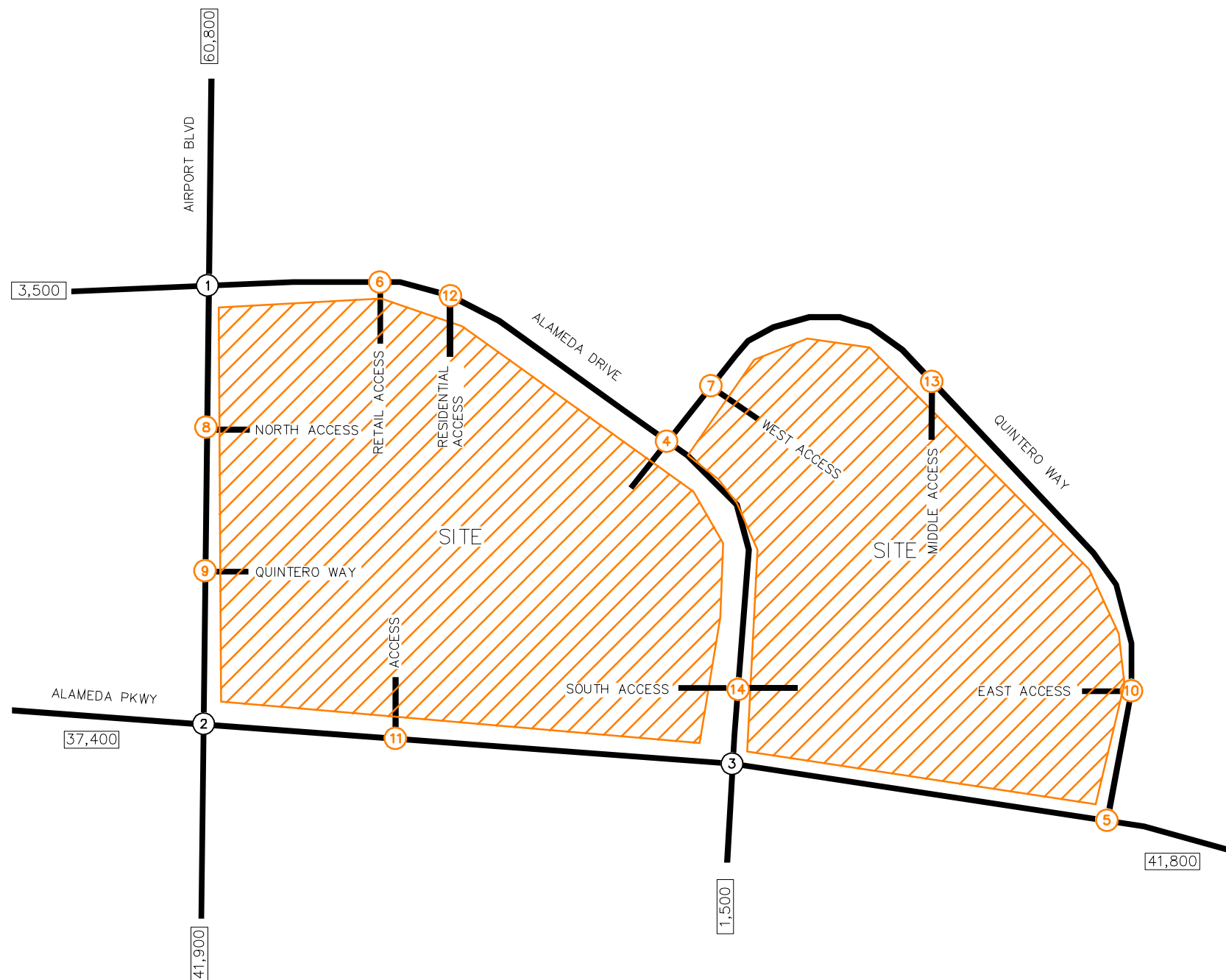
**LEGEND**

(X) Study Area Key Intersection

xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes

xx,x00 Estimated Daily Traffic Volume

FIGURE 11



**LEGEND**

(X) Study Area Key Intersection

xxx(xxx) Weekday AM(PM)  
Peak Hour Traffic Volumes

[xx,x00] Estimated Daily Traffic Volume

FIGURE 12

## 6.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the vicinity of the site was conducted to determine potential capacity deficiencies in the 2022 and 2040 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual*<sup>2</sup>.

### 6.1 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). For intersections and roadways in this study area, common traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of LOS 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.

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 a signalized and four-way stop controlled intersection is defined for each approach and for the intersection. The intersection analysis was conducted using Synchro software with the analysis results reported using the Highway Capacity Manual (HCM) procedure.

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

## 6.2 Intersection Operational Analysis

Calculations for the LOS at the study key intersections are provided in **Appendix C**. The LOS analyses are based on the lane geometry and intersection control shown in **Figure 3**. The LOS analyses determine what improvements may be needed at the intersections and proposed accesses to handle background traffic growth and project related traffic in the two study horizons. Existing peak hour factors were utilized in the existing and 2022 horizon analysis years while an average of the existing peak hour factors and the standard 0.92 were used in 2040.

### Alameda Drive and Airport Boulevard (#1)

The intersection of Alameda Drive and Airport Boulevard is signalized. Under existing conditions, the intersection operates acceptably with LOS C or better during the peak hours. In the 2022 project buildout year and with the addition of project traffic, this intersection is anticipated to continue operating acceptably with LOS D or better during the studied peak hours. It is recommended that the southbound left turn operate with protected/permitted left turn phasing, that a northbound right turn lane be constructed, and that a westbound right turn lane be constructed in association with the project.

By year 2040, if future volumes are realized, this intersection may operate with long delays during the morning peak hour with or without the addition of project traffic and the existing intersection configuration. However, the westbound right turn lane and southbound left turn protected/permissive phasing recommended with project development in 2022 allows it to operate well with or without the addition of project traffic throughout 2040. **Table 3** provides the results of the LOS analysis conducted at this intersection.

**Table 3 – Alameda Drive and Airport Boulevard LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2020 Existing	33.8	C	14.6	B
2022 Background	37.7	D	16.7	B
2022 Background Plus Project	47.9	D	26.0	C
2022 Background Plus Project #	37.1	D	19.8	B
2040 Background #	41.5	D	36.5	D
2040 Background Plus Project #	49.1	D	44.7	D

# Northbound right turn lane, Southbound left turn lane permissive protected phasing, exclusive westbound right turn lane

### Alameda Parkway and Airport Boulevard (#2)

The intersection of Alameda Drive and Airport Boulevard is signalized. Under existing conditions, the intersection operates acceptably with LOS D during the peak hours. In the 2022 project buildout year the intersection operates acceptably with LOS D, but with the addition of project traffic at this intersection it operates with LOS E in the morning peak hour. Due to the heavy volume of westbound right turns, a free right turn lane is recommended with the construction of a continuous acceleration lane along northbound Airport Boulevard. The HCM 6th Edition procedure removes this traffic volume from the average delay calculation, so the improvement to a free right turn isn't totally captured. With this improvement the intersection operates at LOS E during the morning peak hour and LOS D during the afternoon peak hour with project traffic in 2022.

By year 2040, if future traffic volumes are realized, this intersection may operate with long delays during the peak hours with or without the addition of project traffic. It was found that four through lanes would be needed on each approach to provide an acceptable LOS, although it isn't certain that this improvement would be feasible. Possibly the 50 percent increase in background traffic through this intersection won't be realized based on the two percent annual growth rate. Future traffic volumes should continue to be evaluated to determine if other alternate improvements may be needed. **Table 4** provides the results of the LOS analysis conducted at this intersection.

**Table 4 – Alameda Parkway and Airport Boulevard LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2020 Existing	45.4	D	46.7	D
2022 Background	48.6	D	47.3	D
2022 Background Plus Project	57.5	E	53.3	D
2022 Background Plus Project #	57.1	E	53.0	D
2040 Background #	104.4	F	86.0	F
2040 Background Plus Project #	139.9	F	96.4	F

# Westbound Free Right Turn



### **Alameda Parkway and Richfield Street/Alameda Drive (#3)**

The intersection of Alameda Parkway with Richfield Street/Alameda Drive is unsignalized with stop signs on the northbound Richfield Street and southbound Alameda Drive approaches. Under existing conditions, the intersection operates with movements at LOS F during the peak hours. As requested by the City of Aurora, vehicle volume signal warrant analysis was performed for this intersection. It was found that this intersection is expected to meet warrants for a traffic signal. Therefore, signalization of this intersection is recommended with construction of the NEC Airport and Alameda Project.

A signal warrant analysis was conducted obtaining 72-hour daily volumes along Alameda Parkway on the eastbound and westbound approaches to this intersection. These counts were conducted on Tuesday, February 25, 2020; Wednesday, February 26, 2020; and Thursday February 27, 2020. The Thursday, February 27, 2020 counts were the highest of the three days, so northbound Richfield Street and southbound Alameda Drive volumes were obtained from this date in turning movement counts from 6:00 am to 7:00 pm. With half of the right turns removed, the intersection is very close to meeting signal warrants with existing traffic. Three of the necessary four hourly plots are above the curve on the Four-Hour Warrant, with just one hour being short by four (4) additional vehicles. Therefore, obviously the addition of project traffic will cause the intersection to meet warrants. The signal warrant analysis with counts, calculations, and figures is included in **Appendix D**.

With signalization, it is recommended that the northbound Richfield Street and southbound Alameda Drive approaches be designated with separate left turn lanes. With these improvements, this intersection is anticipated to operate acceptably throughout 2040. **Table 5** provides the results of the LOS analysis conducted at this intersection.

**Table 5 – Alameda Parkway and Richfield Street/Alameda Drive LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2020 Existing</b>				
Northbound Approach	29.7	D	139.8	F
Southbound Approach	118.5	F	335.0	F
Eastbound Left	43.3	E	12.8	B
Westbound Left	12.2	B	32.9	D
<b>2022 Background</b>				
Northbound Approach	73.1	F	353.7	F
Southbound Approach	153.7	F	774.0	F
Eastbound Left	48.9	E	13.2	B
Westbound Left	13.0	B	45.7	E
<b>2022 Background #</b>	23.4	C	38.3	D
<b>2022 Background Plus Project #</b>	23.2	C	38.2	D
<b>2040 Background #</b>	17.6	B	29.9	C
<b>2040 Background Plus Project #</b>	21.1	C	35.5	D

# Signalized with separate northbound and southbound left turn lanes

#### Alameda Drive and Quintero Way (#4)

The intersection of Alameda Drive and Quintero Way is unsignalized with a stop sign on the southwest Quintero Way approach. For purposes of this analysis, Alameda Drive is considered north/south while the access and Quintero Way is east/west. In the 2022 buildout an eastbound approach will be constructed as an access for the west residential development area. This eastbound access approach is recommended to operate with stop-control with the installation of a R1-1 “STOP” sign. This intersection is anticipated to operate acceptably with movements at LOS B or better for 2022 and 2040 conditions with or without the addition of project traffic. **Table 6** provides the results of the LOS analysis conducted at this intersection.

**Table 6 – Alameda Drive and Quintero Way LOS Results**

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
<b>2022 Background Plus Project</b>				
Northeast Approach	9.6	A	10.2	B
Southwest Approach	11.2	B	9.8	A
Northwest Left	7.4	A	7.8	A
Southeast Left	8.0	A	7.4	A
<b>2040 Background Plus Project</b>				
Northeast Approach	9.9	A	11.0	B
Southwest Approach	12.6	B	10.4	B
Northwest Left	7.4	A	8.1	A
Southeast Left	8.4	A	7.5	A

### **Alameda Parkway and Quintero Way (#5)**

The intersection of Alameda Drive and Quintero Way is unsignalized with a stop sign on the southbound approach. It is recommended that with construction of this project this intersection operate with three-quarter movements by reconfiguring the center median along Alameda Parkway to restrict the southbound left turn. With construction of the center median it is recommended that a R3-1 No Left Turn sign be installed underneath the existing stop sign. In the 2022 buildout, all movements at this three-quarter intersection operate acceptably during both peak hours. If future traffic volumes are realized in 2040, the eastbound left turn and southbound right turn at this intersection may operate poorly during the morning peak hour. Due to the low volumes on the southbound approach a signal is not warranted. It is believed that during periods of long delays at this intersection, drivers will reroute on the surrounding street network and use the Alameda Parkway/Alameda Drive signalized intersection instead. Signal warrant analysis is provided in **Appendix D. Table 7** provides the results of the LOS analysis conducted at this intersection.

**Table 7 – Alameda Parkway and Quintero Way LOS Results**

<b>Scenario</b>	<b>AM Peak Hour</b>		<b>PM Peak Hour</b>	
	<b>Delay (sec/veh)</b>	<b>LOS</b>	<b>Delay (sec/veh)</b>	<b>LOS</b>
<b>2022 Background Plus Project</b>				
Southbound Approach	27.0	D	13.1	B
Eastbound Left	44.7	E	14.1	B
<b>2040 Background Plus Project</b>				
Southbound Right	52.7	F	15.7	C
Eastbound Left	134.3	F	18.8	C

### **Buckley Yard Project Access Intersections**

With completion of the Buckley Yard Project, access to the site will be provided from 10 proposed accesses along Alameda Drive, Quintero Way, Airport Boulevard, and Alameda Parkway. Four (4) accesses are to be located along Alameda Drive with one access in alignment with Quintero Way. Three (3) access to be located along the south and west side of Quintero Way. Two (2) right-in/right-out accesses are proposed to be located along the east side of Airport Boulevard, with the south access being Quintero Way, and one (1) right-in/right-out access is to be located along the north side of Alameda Parkway.

The west access along Alameda Drive (intersection #6) is proposed as a full movement access, approximately 350 feet east of Airport Boulevard (measured center to center). The exiting northbound access drive is recommended to have a R1-1 “STOP” sign installed. One vehicle of storage, 25 feet for passenger cars or 50 feet for trucks, of throat depth is recommended to be provided for this project access based on vehicle usage anticipated.

The west access along Quintero (intersection #7) is proposed as a full movement, approximately 300 feet east of Alameda Drive (measured center to center). The exiting westbound access drive is recommended to have a R1-1 “STOP” sign installed. One vehicle of storage is recommended to be provided for this project access based on vehicle usage anticipated.

The north access along Airport Boulevard (intersection #8) is proposed as a right-in/right-out restricted access and will be located approximately 800 feet north of Alameda Parkway (measured center to center). The exiting westbound access drive is recommended to have a R1-1 “STOP” sign installed during the 2022 future condition. To further identify the proposed access as a right-in/right-out driveway, it is recommended that a R3-2 No Left Turn sign be placed underneath the STOP sign and a R6-1(R) ONE WAY sign be installed within the existing center raised median along Airport Boulevard. Four vehicles of storage (100 feet) for the westbound approach throat depth is recommended to be provided for this project access based on vehicle usage anticipated in the 2022 future condition without a free westbound right turn movement. In accordance with CDOT standards a continuous northbound right turn acceleration/deceleration auxiliary lane will need to be constructed along project frontage of Airport Boulevard through this access. Therefore, the westbound approach is anticipated to operate with no delay and no queue.

The southern access of Quintero Way and Airport Boulevard (intersection #9) is proposed as a right-in/right-out restricted access and will be located approximately 550 feet north of Alameda Parkway (measured center to center). The exiting westbound access drive is recommended to have a R1-1 "STOP" sign installed during the 2022 future condition. To further identify the proposed access as a right-in/right-out driveway, it is recommended that a R3-2 No Left Turn sign be placed underneath the STOP sign and a R6-1(R) ONE WAY sign be installed within the existing center raised median along Airport Boulevard. Four vehicles of storage (100 feet) for the westbound approach throat depth is recommended to be provided for this project access based on vehicle usage anticipated in the 2022 future condition without a free westbound right turn movement. In accordance with CDOT standards a continuous northbound right turn acceleration/deceleration auxiliary lane will need to be constructed along project frontage of Airport Boulevard through this access. Therefore, the westbound approach is anticipated to operate with no delay and no queue.

The eastern access along Quintero Way (intersection #10) is proposed as a full movement access, approximately 350 feet north of Alameda Parkway (measured center to center). The exiting eastbound access drive is recommended to have a R1-1 "STOP" sign installed. One vehicle of storage, 25 feet for passenger cars, of throat depth is recommended to be provided for this project access based on vehicle usage anticipated.

The access along Alameda Parkway (intersection #11) is proposed as a right-in/right-out restricted access and will be located approximately 350 feet east of Airport Boulevard (measured center to center). The exiting southbound access drive is recommended to have a R1-1 "STOP" sign installed and a R6-1(R) ONE WAY sign be installed within the existing center raised median along Alameda Parkway Boulevard. To further identify the proposed access as a right-in/right-out driveway, it is recommended that a R3-2 No Left Turn sign be placed underneath the STOP sign. Two vehicles of storage is recommended to be provided for this project access based on vehicle usage anticipated.

Additional full movement access to the residential areas will be provided along Alameda Drive between Airport Boulevard and Quintero Way (#12), along Alameda Drive between Quintero Way and Alameda Parkway (#14), and along Quintero Way between the west and east accesses (#13). It is recommended that the access approaches to the public street of Alameda Drive or Quintero Way operate with stop control with the installation of a R1-1 "STOP" sign.

With these lane configurations and control in the opening year of 2022 as well as throughout the 2040 long term horizon, all movements at the access intersections are anticipated to operate acceptably during the peak hours. **Table 8** provides the results of the level of service at the major access intersections.

**Table 8 – Buckley Yard Access Intersections Level of Service Results**

Intersection	2022 Background Plus Project				2040 Background Plus Project			
	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>Alameda Drive &amp; Retail Access (#6)</b>								
Northbound Approach	10.7	B	10.1	B	11.6	B	10.7	B
Westbound Left	7.4	A	7.8	A	7.4	A	8.0	A
<b>Quintero Way &amp; West Access (#7)</b>								
Westbound Approach	8.6	A	8.6	A	8.6	A	8.6	A
Southwest Left	7.2	A	7.2	A	7.2	A	7.2	A
<b>Airport Blvd &amp; North Access (#8)</b>								
Westbound Approach	15.7	C	11.1	B	50.6	F	12.9	B
<b>Airport Blvd &amp; North Access (#8) (Free Westbound Right Turn)</b>								
Westbound Approach	-	-	-	-	0.0	A	0.0	A
<b>Airport Blvd &amp; Quintero Way (South Access) (#9)</b>								
Westbound Approach	16.6	C	11.3	B	55.2	F	13.3	B
<b>Airport Blvd &amp; Quintero Way (South Access) (#9) (Free Westbound Right Turn)</b>								
Westbound Approach	-	-	-	-	0.0	A	0.0	A
<b>Quintero Way &amp; East Access (#10)</b>								
Eastbound Approach	8.5	A	8.6	A	8.5	A	8.6	A
Northbound Left	7.2	A	7.3	A	7.2	A	7.3	A
<b>Alameda Pkwy &amp; Access (#11)</b>								
Southbound Approach	16.2	C	10.9	C	29.6	D	11.8	B
<b>Alameda Drive &amp; Residential Access (#12)</b>								
Northbound Approach	10.7	B	10.4	B	11.5	B	11.0	B
Westbound Left	7.4	A	7.9	A	7.5	A	8.1	A
<b>Quintero Way &amp; Middle Access (#13)</b>								
Northbound Approach	8.5	A	8.5	A	8.5	A	8.4	A
Westbound Left	7.2	A	7.2	A	7.2	A	7.2	A
<b>Alameda Drive &amp; South Access (#14)</b>								
Eastbound Approach	9.3	A	10.2	B	9.4	A	10.9	B
Westbound Approach	11.3	B	11.8	B	12.3	B	12.7	B
Northbound Left	7.5	A	7.9	A	7.5	A	8.1	A
Southbound Left	8.0	A	7.5	A	8.5	A	7.5	A

### 6.3 Queue Analysis

A queuing analysis was conducted for the study area intersections. Turn lanes are recommended to be constructed providing the recommended storage length based on the queuing analysis. Results were obtained from the 95<sup>th</sup> percentile queue lengths obtained from the Synchro analysis. Queue analysis worksheets at the signalized intersections are provided in **Appendix E**. Queue length calculations for unsignalized intersections are provided within the level of service operational sheets provided in **Appendix C**. Results of the queuing analysis and recommendations at the study area intersections are provided in **Table 9**.



**Table 9 – Turn lane Length Analysis Results**

Intersection Turn Lane	Existing Turn Lane Length (feet)	2022 Calculated Queue Length (ft)	2022 Recommended Turn Lane Length (ft)	2040 Calculated Queue Length (ft)	2040 Recommended Turn Lane Length (ft)
<b>Alameda Dr &amp; Airport Blvd (#1)</b>					
Eastbound Left	75'	167'	75'	287'	75'
Eastbound Right	75'	12'	75'	161'	175'
Westbound Left	100'	69'	100'	73'	100'
Westbound Through	C	89'	C	137'	C
Westbound Right	DNE	300'	150'	626'	150'
Northbound Left	250'	113'	250'	283'	300' (575')
Southbound Left	250'	202'	250'	337'	350' (700')
<b>Alameda Pkwy &amp; Airport Blvd (#2)</b>					
Eastbound Left	400' DL	273' DL	400' DL	428' DL	450' (625') DL
Eastbound Right	325'	246'	325'	395'	400' (370')
Westbound Left	400'	151'	400'	231'	400'
Westbound Right	300'	0'	300' FREE	37'	300' FREE
Northbound Left	400' DL	212' DL	400' DL	348' DL	400' DL
Southbound Left	400' DL	497' DL	500' (775') DL	897' DL	900' (950') DL
Southbound Right	500'	163'	500'	233'	500'
<b>Alameda Pkwy &amp; Alameda Dr (#3)</b>					
Eastbound Left	100'	26'	100'	18'	100'
Westbound Left	100'	25'	100'	25'	100'
Northbound Left	DNE	42'	100'	66'	100'
Southbound Left	DNE	274'	275'	478'	500'
<b>Alameda Pkwy &amp; Quintero Way (#5)</b>					
Eastbound Left	225'	25'	225'	25'	225'
<b>Airport Blvd &amp; North Access (#8)</b>					
Westbound Right	DNE	25'	C	25'	FREE
<b>Airport Blvd &amp; Quintero Way (#9)</b>					
Westbound Right	DNE	25'	C	25'	FREE
<b>Quintero Way &amp; East Access (#10)</b>					
Eastbound Approach	DNE	25'	C	25'	C
<b>Alameda Pkwy &amp; Access (#11)</b>					
Southbound Right	DNE	50'	C	100'	C

DL = Dual Left Turn Lanes; DNE = Does Not Exist; C = Continuous Turn Lane; FREE = Free Right Turn Lane, XXX' = Vehicle Queueing Recommendation, (XXX') = CDOT Requirement

At the intersection of Alameda Drive and Airport Boulevard (intersection #1) queues may exceed the existing eastbound left turn lane length today and most likely by 2022. The eastbound left turn queue length at this intersection is constructed to its maximum length due to the narrowing of Alameda Drive to the west. Possibly the housing development under

construction on the southwest corner of this intersection is extending this left turn lane as part of its project development. A westbound right turn lane is recommended to be constructed at this intersection in association with this project. This right turn lane is recommended to be constructed with a length of 150 feet to extend beyond the anticipated westbound through lane queue. Construction of this westbound right turn lane will require a traffic signal modification with a new signal pole and mast arm placed on the northeast corner of this intersection.

At the Alameda Parkway and Airport Boulevard intersection (#2) it was found that the southbound dual left turn lanes may need to be extended to 500 feet.

At the Alameda Parkway and Alameda Drive intersection (#3), a 100-foot northbound left turn lane and 275-foot southbound left turn lane are recommended.

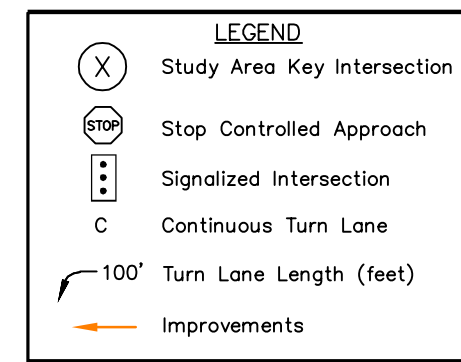
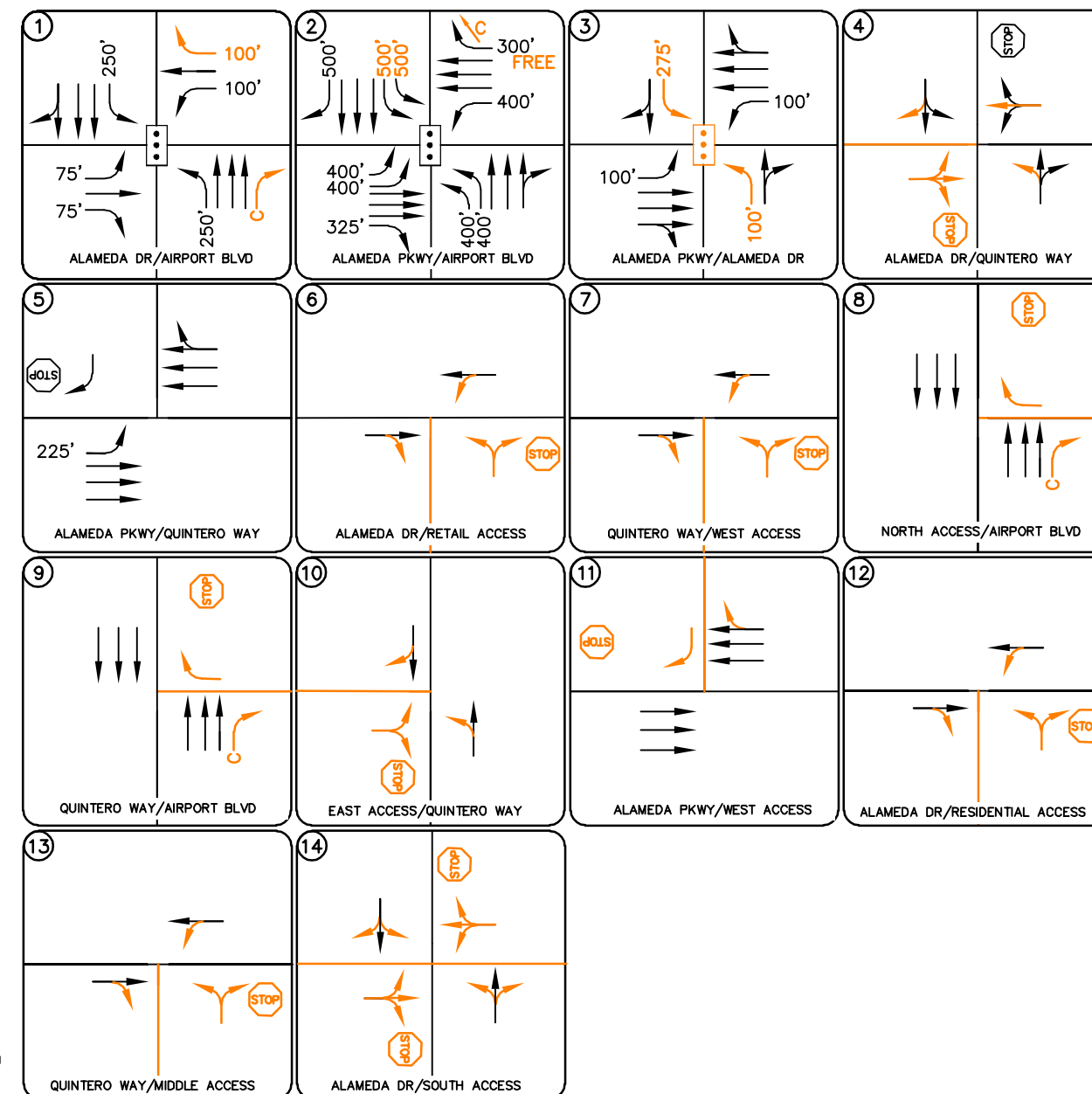
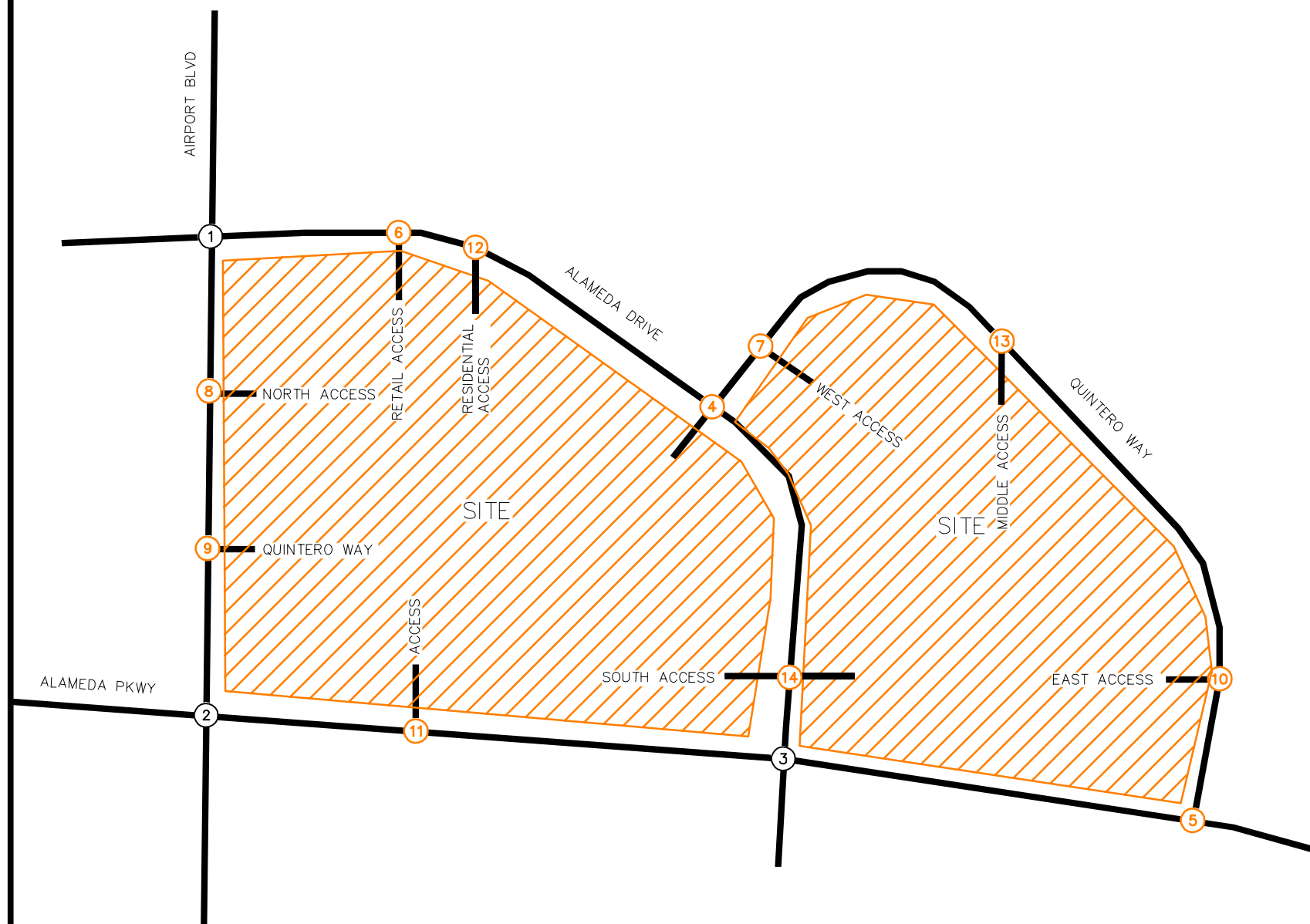
In future year 2040, several turn lanes may require further extension if future traffic volume projections are realized. Otherwise, the one item to note as it relates to this project is that the westbound right turns at the Airport Boulevard Accesses (intersections #8 and #9) may need to be free right turn lanes with construction of continuous acceleration lanes along northbound Airport Boulevard from this access.

#### **6.4 Improvement Summary**

Based on the results of the intersection operations, signal warrant, and turn lane queuing analysis, improvements were identified as being needed at key study intersections for the 2022 project development and long term 2040 twenty-year planning horizons. These improvements are summarized in following. **Table 10** as well as **Figure 13** for the 2022 horizon and **Figure 14** for the 2040 horizon.

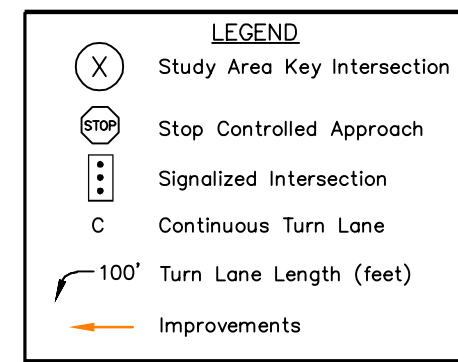
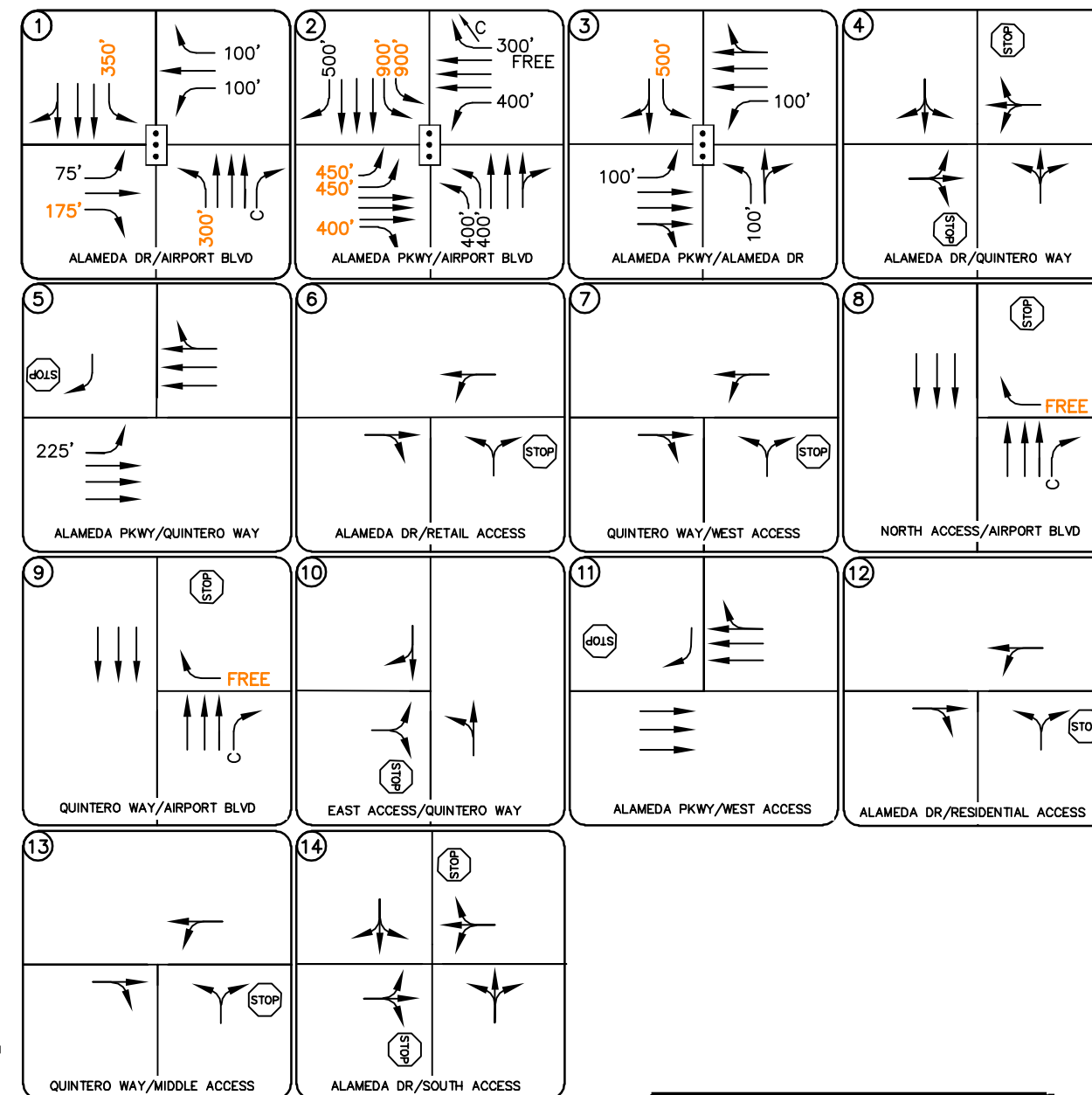
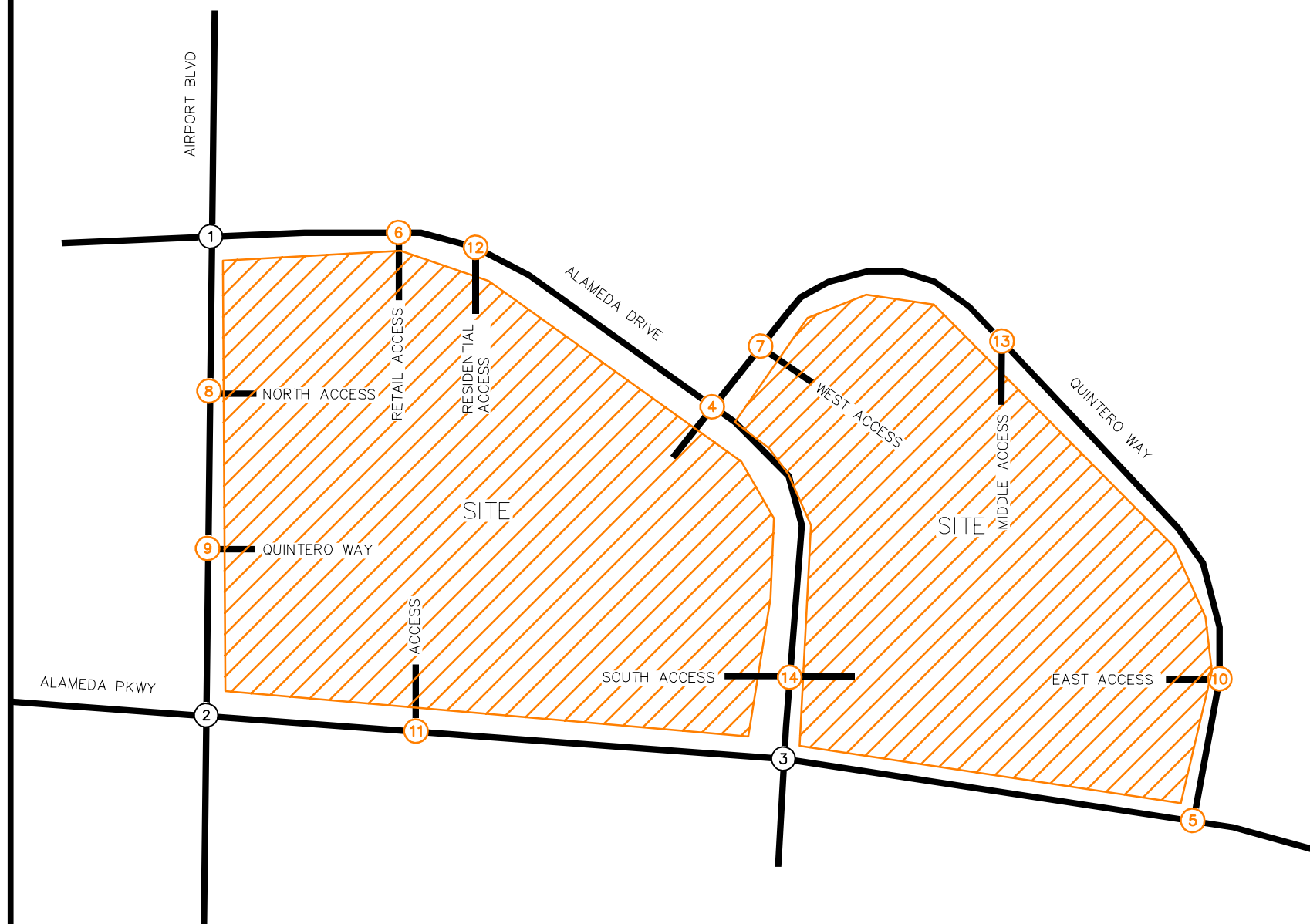
**Table 10 – Intersection Improvement Summary**

Intersection	Improvements	Planning Year Needed
<b>Alameda Drive and Airport Boulevard (#1)</b>	Construct a continuous NB Right Turn Lane	2022
	Install Protected/Permitted SB Left Turn Phasing	
	Construct 150-foot WB Right Turn Lane	
	Extend 250-foot NB left turn lane to 300 feet	2040
	Extend 250-foot SB left turn lane to 350 feet	
	Extend 75-foot EB right turn lane to 175 feet	
<b>Alameda Parkway and Airport Boulevard (#2)</b>	Extend 400-foot SB dual left turn lanes to 500 feet	2022
	Construct a continuous acceleration lane for free WB right turn movement	
	Extend 400-foot EB dual left turn lanes to 450 feet	2040
	Extend EB right turn lane to 400 feet	
	Further extend SB dual left turn lanes to 900 feet or construct triple left turn lanes	
<b>Alameda Parkway and Alameda Drive (#3)</b>	Install Traffic Signal	2022
	Designate 100-foot NB left turn lane	
	Construct and designate 275-foot SB left turn lane	
	Further extend SB left turn lane to 500 feet	2040
<b>Alameda Drive and Quintero Way (#4)</b>	New project west leg with R1-1 “STOP” sign	2022
<b>Alameda Parkway and Quintero Way (#5)</b>	Reconstruct the center median along Alameda Parkway to restrict the southbound approach to right turn movements	2022
	Install a R3-1 No Left Turn sign underneath the existing stop sign	
<b>Alameda Drive West Access (#6)</b>	New project south leg with R1-1 “STOP” sign	2022
<b>Quintero Way West Access (#7)</b>	New project south leg with R1-1 “STOP” sign	2022
<b>Airport Boulevard North Right-In/Right-Out Access (#8)</b>	New project east leg with R1-1 “STOP” sign	2022
	R3-2 No Left Turn and R6-1(R) One Way signs	
	Construct continuous acceleration lane for free WB right turn movement	
	Construct continuous deceleration lane for NB right turn movement	
<b>Airport Boulevard and Quintero Way (#9)</b>	New project east leg with R1-1 “STOP” sign	2022
	R3-2 No Left Turn and R6-1(R) One Way signs	
	Construct continuous acceleration lane for free WB right turn movement	
	Construct continuous deceleration lane for NB right turn movement	
<b>Quintero Way East Access (#10)</b>	New project west leg with R1-1 “STOP” sign	2022
<b>Alameda Parkway West RIRO Access (#11)</b>	New project north leg with R1-1 “STOP”	2022
	R3-2 No Left Turn and R6-1(R) One Way signs	
<b>Alameda Drive Residential Access (#12)</b>	New project south leg with R1-1 “STOP” sign	2022
<b>Quintero Way Middle Access (#13)</b>	New project south leg with R1-1 “STOP” sign	2022
<b>Alameda Drive South Access (#14)</b>	New project east and west legs with R1-1 “STOP” signs	2022



BUCKLEY YARD  
AURORA, CO  
2022 RECOMMENDED LANE CONFIGURATIONS AND CONTROL

FIGURE 13



BUCKLEY YARD  
AURORA, CO  
2040 RECOMMENDED LANE CONFIGURATIONS AND CONTROL

FIGURE 14

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

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Based on the analysis presented in this report, Kimley-Horn believes Buckley Yard 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 recommendations:

### 2022 Recommendations

- Based on the City of Aurora using CDOT requirements as a guide to determine turn lane thresholds, a continuous northbound right turn auxiliary lane will need to be constructed along Airport Boulevard from Alameda Parkway to Alameda Drive to accommodate an acceleration lane from the intersection of Alameda Parkway and Airport Boulevard (intersection #2), deceleration lanes to and acceleration lanes from both project accesses (intersections #8 and #9 (Quintero Way)), and a deceleration lane for traffic entering the Alameda Drive and Airport Boulevard (intersection #1).
- At the Alameda Drive and Airport Boulevard intersection (#1), it is recommended that the southbound left turn operate with protected/permitted left turn phasing. This will require a traffic signal modification to install four-section flashing yellow signal heads on the southbound indication mast arm and pole on the southeast corner of the intersection. Also, a 150-foot with 100-foot taper westbound right turn lane is recommended to be constructed and designated. This right turn lane may require a new traffic signal pole and mast arm to be installed on the northeast corner of the intersection. The existing 75-foot eastbound left turn lane was found to require 125 feet of storage length today and 150 feet in 2022 with background traffic and the development occurring on the west side of Airport Boulevard. With total traffic volumes in 2022, this eastbound left turn lane was found to require a length of 175 feet. However, the eastbound left turn queue length at this intersection is constructed to its maximum length due to the narrowing of Alameda Drive to the west.
- At the Alameda Parkway and Airport Boulevard intersection (#2) it is recommended that the existing 400-foot southbound dual left turn lanes be extended by 100 feet to a length of 500 feet. Likewise, it is recommended that the westbound right turn lane operate with free movements with the construction of a channelized island on the northeast corner of the

intersection and a continuous acceleration lane (based on CDOT standards for a 40-mph roadway) along northbound Airport Boulevard.

- Signalization is recommended at the Alameda Parkway and Alameda Drive/Richfield Street intersection (#3). When this occurs, separate northbound and southbound left turn lanes are recommended to be designated. The existing roadway width of Richfield Street will allow for striping the recommended 100-foot northbound left turn lane. The southbound left turn lane will require roadway widening of Alameda Drive to designate this left turn lane to 275 feet.
- For the project access to align as the west leg of the Alameda Drive and Quintero Way intersection (#4), the eastbound approach exiting the residential area is recommended to have a R1-1 “STOP” sign installed. All access approaches are anticipated to operate acceptably with a single approach lane to the intersection.
- For the Alameda Parkway and Quintero Way intersection (#5) it is recommended that this intersection operate with a three-quarter movement restriction by reconfiguring the center median along Alameda Parkway to restrict the southbound approach to right turn movements only. With construction of the center median it is recommended that a R3-1 No Left Turn sign be installed underneath the existing stop sign.
- At the new project access approaches along Alameda Drive and Quintero Way (#4, #6, #7, #10, #12, #13, and #14) R1-1 “STOP” signs are recommended to be installed for the exiting approaches. Single lane approaches are anticipated to be sufficient for all approaches to these access intersections.
- For the two Airport Boulevard Right-In/Right-Out Access intersections (#8 and Quintero Way #9), it is recommended that R1-1 “STOP” signs be installed for the westbound project access approaches. To identify the proposed accesses to right turn movements only, it is recommended that a R3-2 No Left Turn signs be placed underneath the “STOP” signs and R6-1(R) ONE WAY signs be installed within the center raised median along Airport Boulevard.

- The exiting southbound access drive approach at the Alameda Parkway Access (#11) is recommended to operate with stop-control with the installation of a R1-1 “STOP” sign. With this access operating with right-in/right-out movement control, it is recommended that a R6-1(R) ONE WAY sign be installed within the existing center raised median along Alameda Parkway and a R3-2 No Left Turn sign be placed underneath the STOP sign.

#### 2040 Recommendations

The recommendations outlined as follows are based on a conservative two percent annual growth rate, which equates to about a 50 percent increase in traffic volumes over twenty years. Therefore, these recommendations should continue to be evaluated by the City in the future to determine what, if any of these, will be needed.

- At the Alameda Drive and Airport Boulevard intersection (#1) additional turn lane lengthening may be required if future traffic volume projections are realized. These include extension of the existing 75-foot eastbound right turn lane to 175 feet, extension of the northbound left turn lane from 250 feet to 300 feet, and extension of the southbound left turn lane from 250 feet to 350 feet.
- The dual southbound left turn lanes at the Alameda Parkway and Airport Boulevard intersection (#2) may need to be further extended to 900 feet or triple left turn lanes may be needed. In addition, the eastbound left turn lanes may need to be extended from 400 feet to 450 feet and the eastbound right turn lane may need to be extended from 325 feet to 400 feet.
- The southbound left turn lane recommended to be designated at the Alameda Parkway and Alameda Drive intersection (#3) may need to be further extended to 500 feet if future traffic volume projections are realized.

#### General Recommendations

- Any on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to City of Aurora standards as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).



# APPENDICES

# APPENDIX A

## Intersection Count Sheets



Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Dr and Airport Blvd

File Name : Alameda Dr and Airport PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

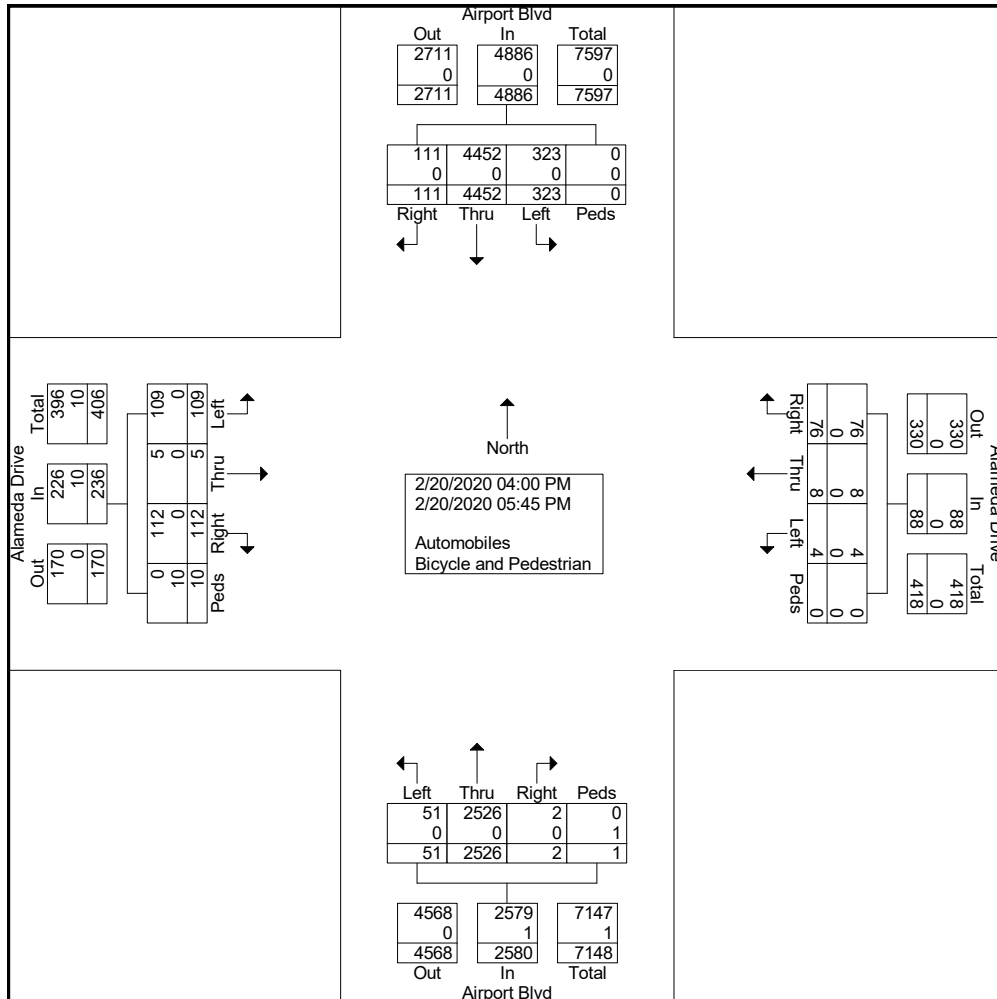
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04:00 PM	19	0	31	5	55	0	0	1	0	1	14	302	0	0	316	1	568	13	0	582	954
04:15 PM	24	1	13	1	39	3	2	5	0	10	11	318	0	0	329	38	601	24	0	663	1041
04:30 PM	32	1	26	2	61	1	4	12	0	17	10	305	0	0	315	39	579	8	0	626	1019
04:45 PM	11	2	13	2	28	0	0	19	0	19	2	353	1	0	356	55	594	10	0	659	1062
Total	86	4	83	10	183	4	6	37	0	47	37	1278	1	0	1316	133	2342	55	0	2530	4076
05:00 PM	8	1	5	0	14	0	1	11	0	12	4	311	0	1	316	41	594	7	0	642	984
05:15 PM	5	0	14	0	19	0	1	11	0	12	6	314	0	0	320	49	501	22	0	572	923
05:30 PM	4	0	5	0	9	0	0	8	0	8	2	337	1	0	340	66	531	17	0	614	971
05:45 PM	6	0	5	0	11	0	0	9	0	9	2	286	0	0	288	34	484	10	0	528	836
Total	23	1	29	0	53	0	2	39	0	41	14	1248	1	1	1264	190	2110	56	0	2356	3714
Grand Total	109	5	112	10	236	4	8	76	0	88	51	2526	2	1	2580	323	4452	111	0	4886	7790
Apprch %	46.2	2.1	47.5	4.2		4.5	9.1	86.4	0		2	97.9	0.1	0		6.6	91.1	2.3	0		
Total %	1.4	0.1	1.4	0.1	3	0.1	0.1	1	0	1.1	0.7	32.4	0	0	33.1	4.1	57.2	1.4	0	62.7	
Automobiles	109	5	112	0	226	4	8	76	0	88	51	2526	2	0	2579	323	4452	111	0	4886	7779
% Automobiles	100	100	100	0	95.8	100	100	100	0	100	100	100	100	0	100	100	100	100	0	100	99.9
Bicycle and Pedestrian	0	0	0	10	10	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	11
% Bicycle and Pedestrian	0	0	0	100	4.2	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0.1



Ridgeview Data  
Collection

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NEC Airport & Alameda  
PM Peak  
Alameda Dr and Airport Blvd

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Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 2



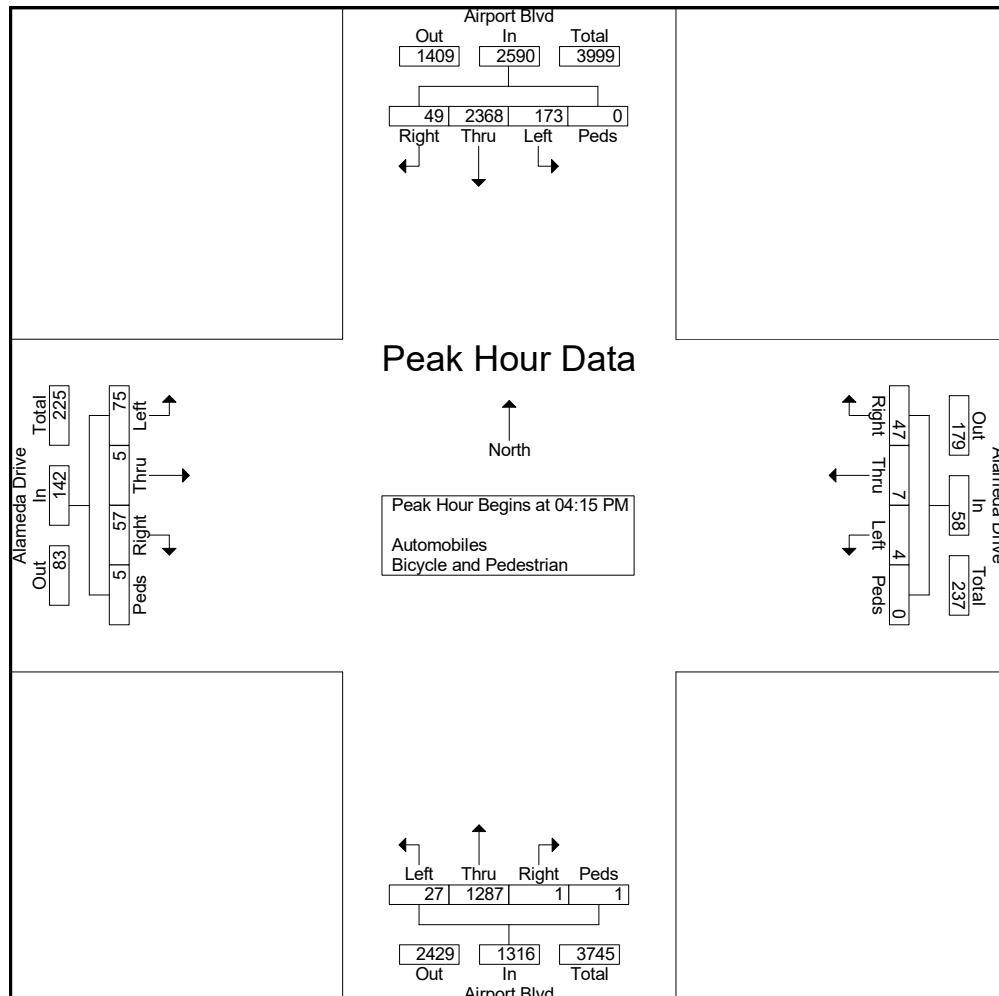


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NEC Airport & Alameda  
PM Peak  
Alameda Dr and Airport Blvd

File Name : Alameda Dr and Airport PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	24	1	13	1	39	3	2	5	0	10	11	318	0	0	329	38	601	24	0	663	1041
04:30 PM	32	1	26	2	61	1	4	12	0	17	10	305	0	0	315	39	579	8	0	626	1019
04:45 PM	11	2	13	2	28	0	0	19	0	19	2	353	1	0	356	55	594	10	0	659	1062
05:00 PM	8	1	5	0	14	0	1	11	0	12	4	311	0	1	316	41	594	7	0	642	984
Total Volume	75	5	57	5	142	4	7	47	0	58	27	1287	1	1	1316	173	2368	49	0	2590	4106
% App. Total	52.8	3.5	40.1	3.5		6.9	12.1	81	0		2.1	97.8	0.1	0.1		6.7	91.4	1.9	0		
PHF	.586	.625	.548	.625	.582	.333	.438	.618	.000	.763	.614	.911	.250	.250	.924	.786	.985	.510	.000	.977	.967





Ridgeview Data  
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Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Dr and Airport Blvd

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Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

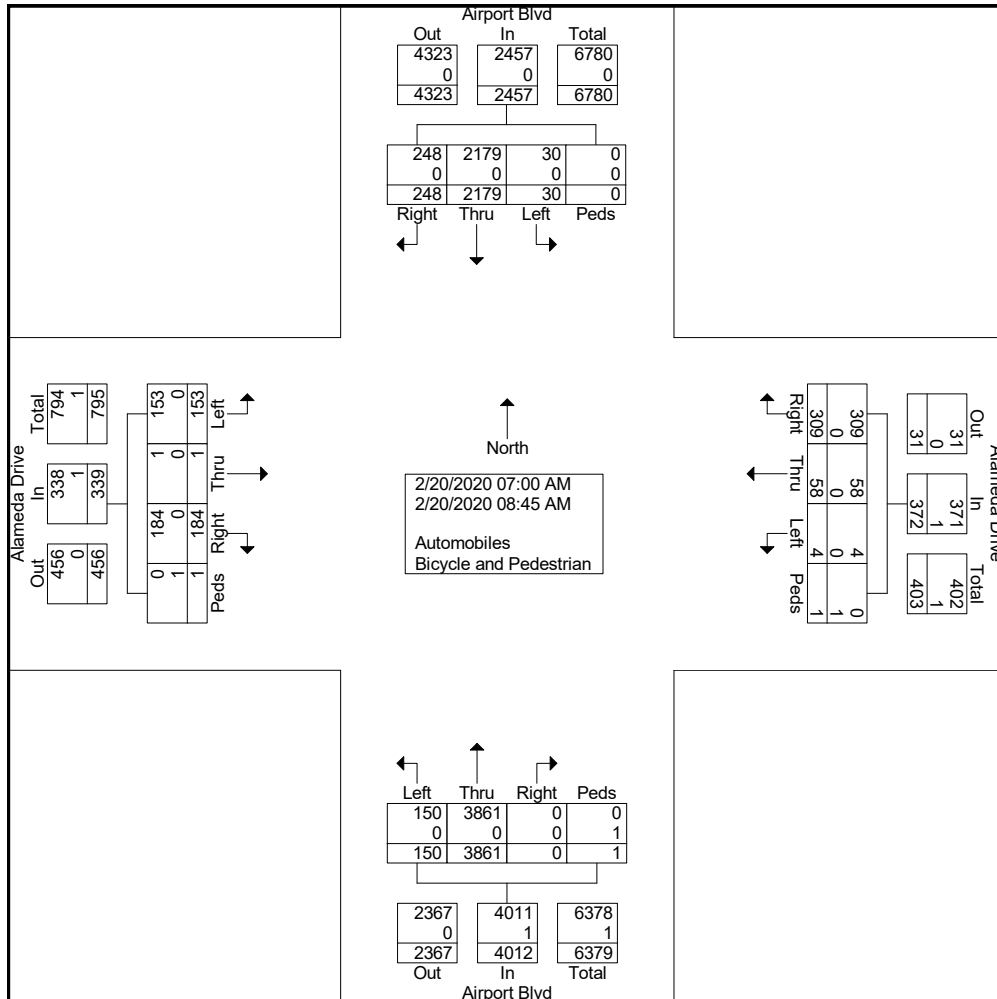
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07:15 AM	8	0	5	1	14	0	7	63	0	70	22	560	0	0	582	2	273	40	0	315	981
07:30 AM	30	0	38	0	68	0	15	65	0	80	45	588	0	0	633	3	294	68	0	365	1146
07:45 AM	37	0	55	0	92	0	24	75	1	100	42	545	0	1	588	4	263	79	0	346	1126
Total	82	0	99	1	182	0	49	228	1	278	118	2197	0	1	2316	10	1099	196	0	1305	4081
08:00 AM	43	0	60	0	103	0	9	38	0	47	21	506	0	0	527	4	292	36	0	332	1009
08:15 AM	22	0	13	0	35	1	0	21	0	22	2	424	0	0	426	9	320	9	0	338	821
08:30 AM	4	1	8	0	13	2	0	10	0	12	6	403	0	0	409	4	251	3	0	258	692
08:45 AM	2	0	4	0	6	1	0	12	0	13	3	331	0	0	334	3	217	4	0	224	577
Total	71	1	85	0	157	4	9	81	0	94	32	1664	0	0	1696	20	1080	52	0	1152	3099
Grand Total	153	1	184	1	339	4	58	309	1	372	150	3861	0	1	4012	30	2179	248	0	2457	7180
Apprch %	45.1	0.3	54.3	0.3		1.1	15.6	83.1	0.3		3.7	96.2	0	0		1.2	88.7	10.1	0		
Total %	2.1	0	2.6	0	4.7	0.1	0.8	4.3	0	5.2	2.1	53.8	0	0	55.9	0.4	30.3	3.5	0	34.2	
Automobiles	153	1	184	0	338	4	58	309	0	371	150	3861	0	0	4011	30	2179	248	0	2457	7177
% Automobiles	100	100	100	0	99.7	100	100	100	0	99.7	100	100	0	0	100	100	100	100	0	100	100
Bicycle and Pedestrian	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	3
% Bicycle and Pedestrian	0	0	0	100	0.3	0	0	0	100	0.3	0	0	0	100	0	0	0	0	0	0	0



Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Dr and Airport Blvd

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Start Date : 2/20/2020  
Page No : 2



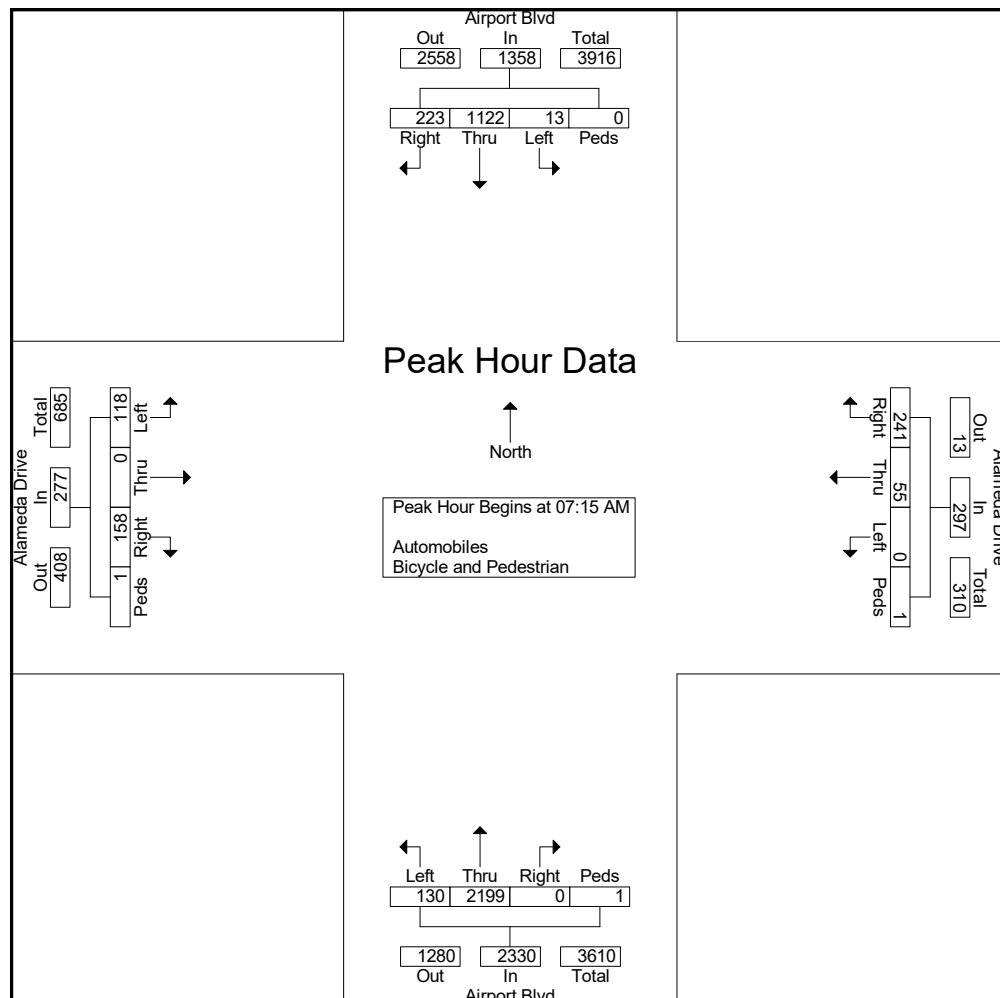


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NEC Airport & Alameda  
AM Peak  
Alameda Dr and Airport Blvd

File Name : Alameda Dr and Airport AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	8	0	5	1	14	0	7	63	0	70	22	560	0	0	582	2	273	40	0	315	981
07:30 AM	30	0	38	0	68	0	15	65	0	80	45	588	0	0	633	3	294	68	0	365	1146
07:45 AM	37	0	55	0	92	0	24	75	1	100	42	545	0	1	588	4	263	79	0	346	1126
08:00 AM	43	0	60	0	103	0	9	38	0	47	21	506	0	0	527	4	292	36	0	332	1009
Total Volume	118	0	158	1	277	0	55	241	1	297	130	2199	0	1	2330	13	1122	223	0	1358	4262
% App. Total	42.6	0	57	0.4		0	18.5	81.1	0.3		5.6	94.4	0	0		1	82.6	16.4	0		
PHF	.686	.000	.658	.250	.672	.000	.573	.803	.250	.743	.722	.935	.000	.250	.920	.813	.954	.706	.000	.930	.930







Ridgeview Data  
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Aurora, CO  
NEC Airport & Alameda  
AM Peak  
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Start Date : 2/20/2020  
Page No : 1

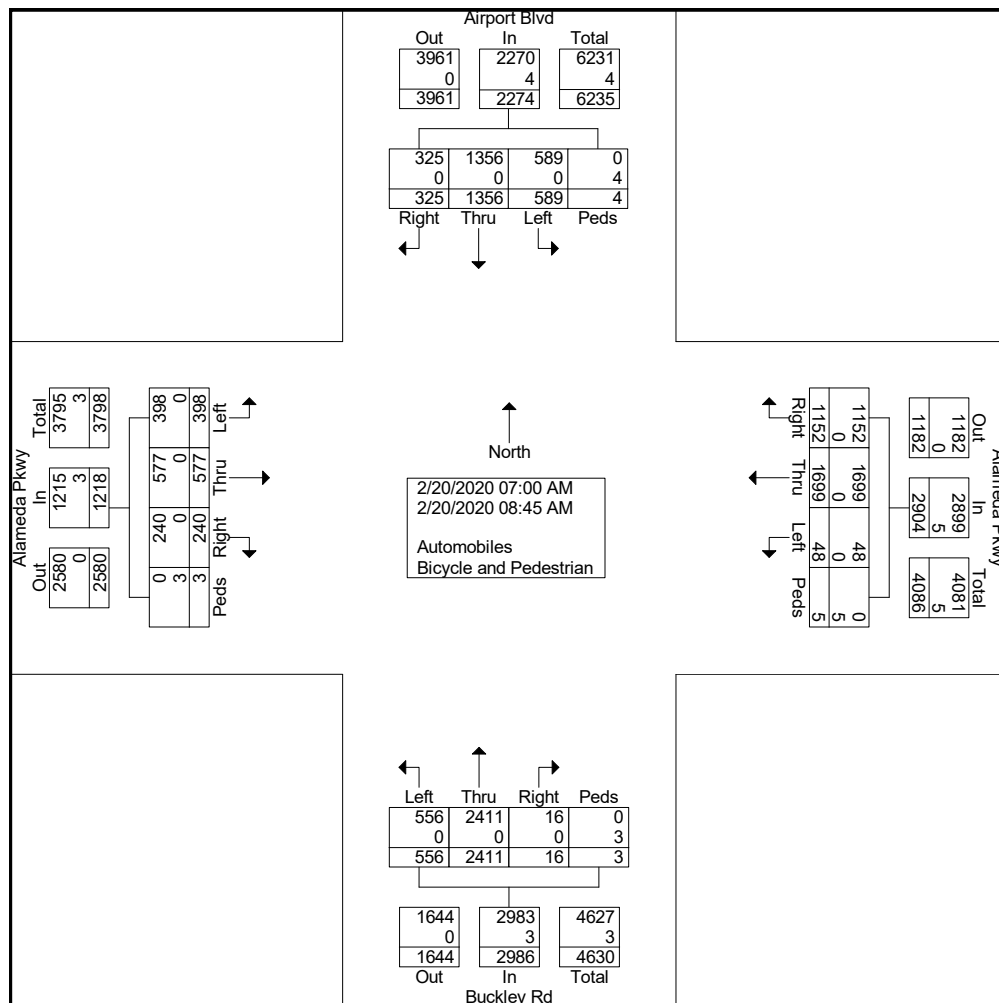
Groups Printed- Automobiles - Bicycle and Pedestrian

	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Buckley Rd Northbound					Airport Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	35	57	39	0	131	3	256	140	0	399	59	326	0	0	385	51	148	35	2	236	1151
07:15 AM	64	69	24	1	158	8	259	161	2	430	76	333	2	0	411	73	158	46	1	278	1277
07:30 AM	61	107	22	0	190	4	236	141	0	381	88	437	3	0	528	87	171	37	0	295	1394
07:45 AM	61	74	55	0	190	8	237	157	2	404	99	362	1	1	463	99	208	53	0	360	1417
Total	221	307	140	1	669	23	988	599	4	1614	322	1458	6	1	1787	310	685	171	3	1169	5239
08:00 AM	61	66	32	1	160	5	241	177	1	424	61	259	2	2	324	94	183	37	0	314	1222
08:15 AM	42	67	30	0	139	8	166	132	0	306	72	277	2	0	351	80	199	53	1	333	1129
08:30 AM	43	79	21	0	143	10	164	134	0	308	49	217	4	0	270	60	153	33	0	246	967
08:45 AM	31	58	17	1	107	2	140	110	0	252	52	200	2	0	254	45	136	31	0	212	825
Total	177	270	100	2	549	25	711	553	1	1290	234	953	10	2	1199	279	671	154	1	1105	4143
Grand Total	398	577	240	3	1218	48	1699	1152	5	2904	556	2411	16	3	2986	589	1356	325	4	2274	9382
Apprch %	32.7	47.4	19.7	0.2		1.7	58.5	39.7	0.2		18.6	80.7	0.5	0.1		25.9	59.6	14.3	0.2		
Total %	4.2	6.2	2.6	0	13	0.5	18.1	12.3	0.1	31	5.9	25.7	0.2	0	31.8	6.3	14.5	3.5	0	24.2	
Automobiles	398	577	240	0	1215	48	1699	1152	0	2899	556	2411	16	0	2983	589	1356	325	0	2270	9367
% Automobiles	100	100	100	0	99.8	100	100	100	0	99.8	100	100	100	0	99.9	100	100	100	0	99.8	99.8
Bicycle and Pedestrian	0	0	0	3	3	0	0	0	5	5	0	0	0	3	3	0	0	0	4	4	15
% Bicycle and Pedestrian	0	0	0	100	0.2	0	0	0	100	0.2	0	0	0	100	0.1	0	0	0	100	0.2	0.2

Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Pkwy and Airport Blvd/Buckley Rd

File Name : Alameda Pkwy and Airport AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 2



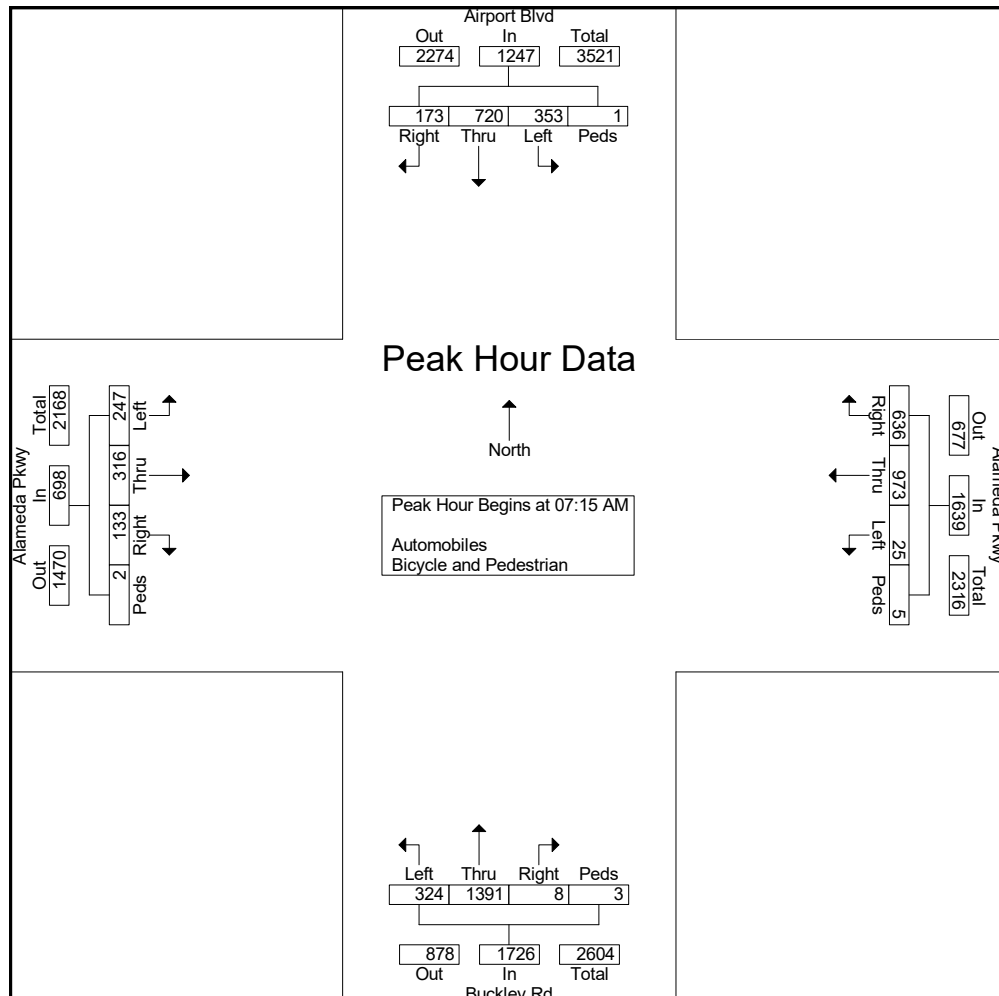


Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Pkwy and Airport Blvd/Buckley Rd

File Name : Alameda Pkwy and Airport AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Buckley Rd Northbound					Airport Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	64	69	24	1	158	8	259	161	2	430	76	333	2	0	411	73	158	46	1	278	1277
07:30 AM	61	107	22	0	190	4	236	141	0	381	88	437	3	0	528	87	171	37	0	295	1394
07:45 AM	61	74	55	0	190	8	237	157	2	404	99	362	1	1	463	99	208	53	0	360	1417
08:00 AM	61	66	32	1	160	5	241	177	1	424	61	259	2	2	324	94	183	37	0	314	1222
Total Volume	247	316	133	2	698	25	973	636	5	1639	324	1391	8	3	1726	353	720	173	1	1247	5310
% App. Total	35.4	45.3	19.1	0.3		1.5	59.4	38.8	0.3		18.8	80.6	0.5	0.2		28.3	57.7	13.9	0.1		
PHF	.965	.738	.605	.500	.918	.781	.939	.898	.625	.953	.818	.796	.667	.375	.817	.891	.865	.816	.250	.866	.937





Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Pkwy and Airport Blvd/Buckley Rd

File Name : Alameda Pkwy and Airport PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 1

Groups Printed- Automobiles - Bicycle and Pedestrian

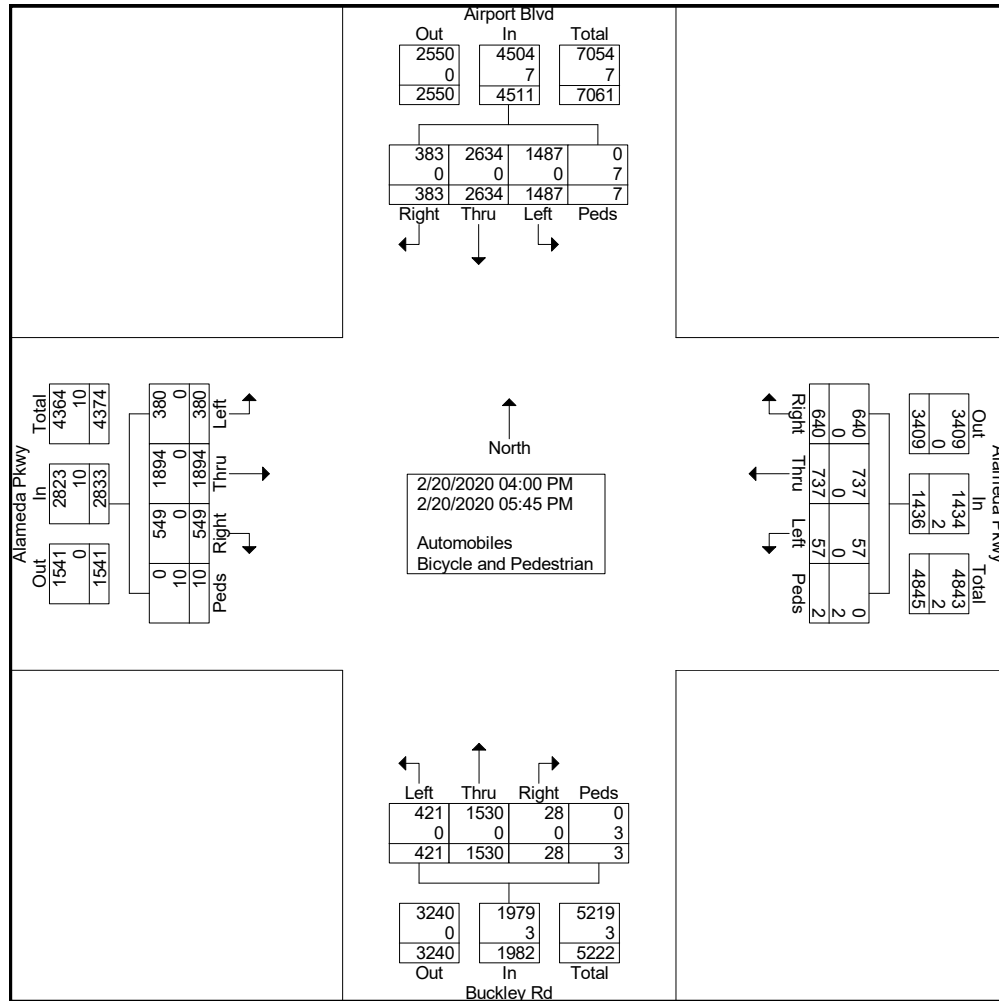
	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Buckley Rd Northbound					Airport Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	37	220	63	3	323	8	91	82	0	181	51	201	4	0	256	215	345	48	2	610	1370
04:15 PM	57	267	61	2	387	10	92	83	0	185	46	160	2	2	210	203	323	62	1	589	1371
04:30 PM	45	245	65	1	356	7	109	89	1	206	63	204	1	0	268	173	328	59	3	563	1393
04:45 PM	50	237	55	2	344	8	83	72	1	164	43	226	1	1	271	200	379	55	1	635	1414
Total	189	969	244	8	1410	33	375	326	2	736	203	791	8	3	1005	791	1375	224	7	2397	5548
05:00 PM	50	268	78	0	396	7	78	67	0	152	54	181	1	0	236	188	345	62	0	595	1379
05:15 PM	55	246	70	0	371	5	101	85	0	191	52	195	7	0	254	153	314	39	0	506	1322
05:30 PM	41	214	76	0	331	5	92	82	0	179	65	204	6	0	275	181	292	22	0	495	1280
05:45 PM	45	197	81	2	325	7	91	80	0	178	47	159	6	0	212	174	308	36	0	518	1233
Total	191	925	305	2	1423	24	362	314	0	700	218	739	20	0	977	696	1259	159	0	2114	5214
Grand Total	380	1894	549	10	2833	57	737	640	2	1436	421	1530	28	3	1982	1487	2634	383	7	4511	10762
Apprch %	13.4	66.9	19.4	0.4		4	51.3	44.6	0.1		21.2	77.2	1.4	0.2		33	58.4	8.5	0.2		
Total %	3.5	17.6	5.1	0.1	26.3	0.5	6.8	5.9	0	13.3	3.9	14.2	0.3	0	18.4	13.8	24.5	3.6	0.1	41.9	
Automobiles	380	1894	549	0	2823	57	737	640	0	1434	421	1530	28	0	1979	1487	2634	383	0	4504	10740
% Automobiles	100	100	100	0	99.6	100	100	100	0	99.9	100	100	100	0	99.8	100	100	100	0	99.8	99.8
Bicycle and Pedestrian	0	0	0	10	10	0	0	0	2	2	0	0	0	3	3	0	0	0	7	7	22
% Bicycle and Pedestrian	0	0	0	100	0.4	0	0	0	100	0.1	0	0	0	100	0.2	0	0	0	100	0.2	0.2



Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Pkwy and Airport Blvd/Buckley Rd

File Name : Alameda Pkwy and Airport PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 2



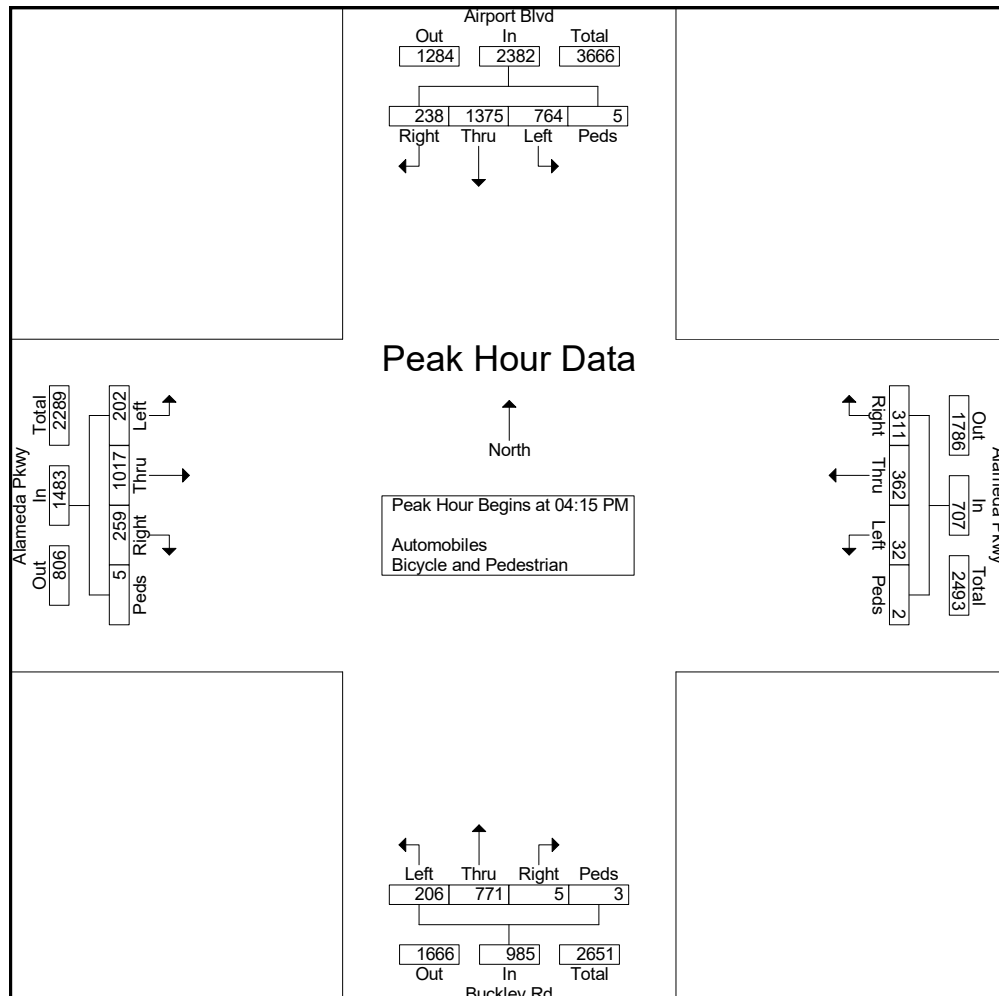


Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Pkwy and Airport Blvd/Buckley Rd

File Name : Alameda Pkwy and Airport PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Buckley Rd Northbound					Airport Blvd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	57	267	61	2	387	10	92	83	0	185	46	160	2	2	210	203	323	62	1	589	1371
04:30 PM	45	245	65	1	356	7	109	89	1	206	63	204	1	0	268	173	328	59	3	563	1393
04:45 PM	50	237	55	2	344	8	83	72	1	164	43	226	1	1	271	200	379	55	1	635	1414
05:00 PM	50	268	78	0	396	7	78	67	0	152	54	181	1	0	236	188	345	62	0	595	1379
Total Volume	202	1017	259	5	1483	32	362	311	2	707	206	771	5	3	985	764	1375	238	5	2382	5557
% App. Total	13.6	68.6	17.5	0.3		4.5	51.2	44	0.3		20.9	78.3	0.5	0.3		32.1	57.7	10	0.2		
PHF	.886	.949	.830	.625	.936	.800	.830	.874	.500	.858	.817	.853	.625	.375	.909	.941	.907	.960	.417	.938	.982





File Name : Alameda Pkwy and Alameda Dr AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 1

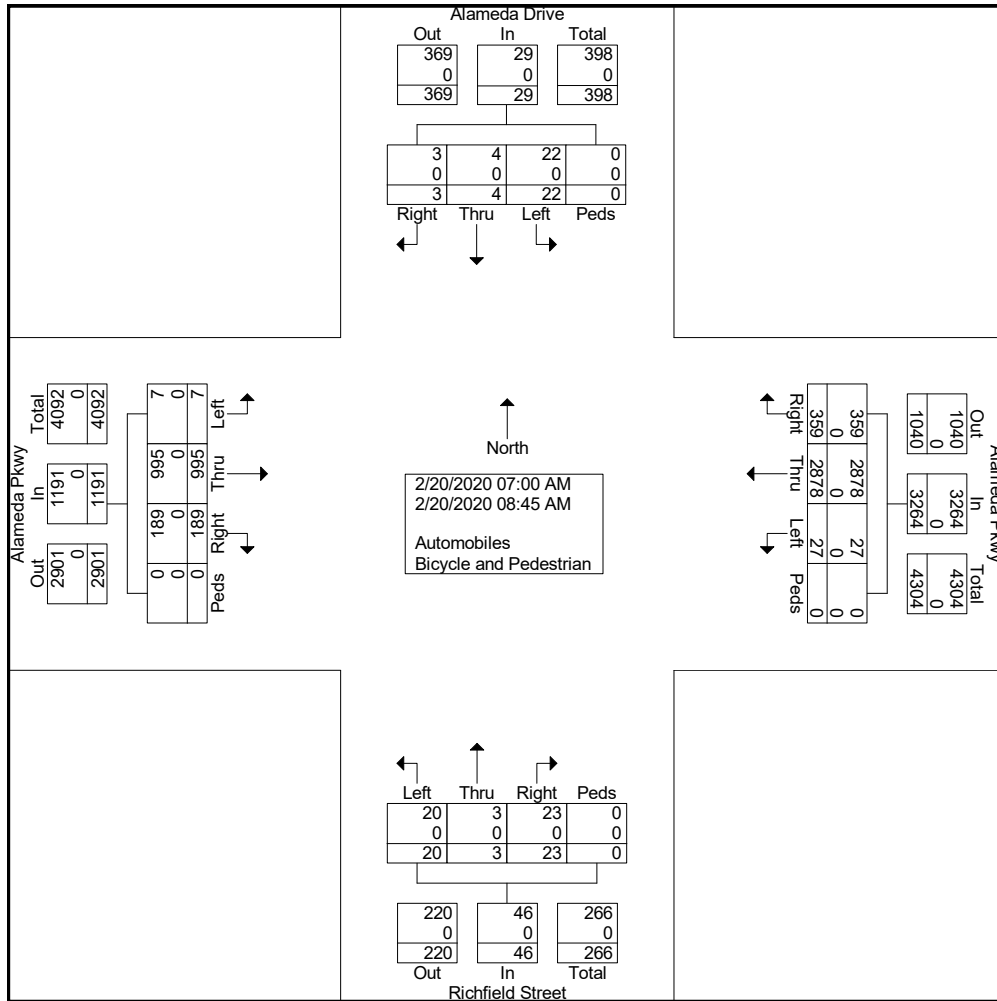
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Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Pkwy and Alameda Rd/Richfield St

File Name : Alameda Pkwy and Alameda Dr AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 2





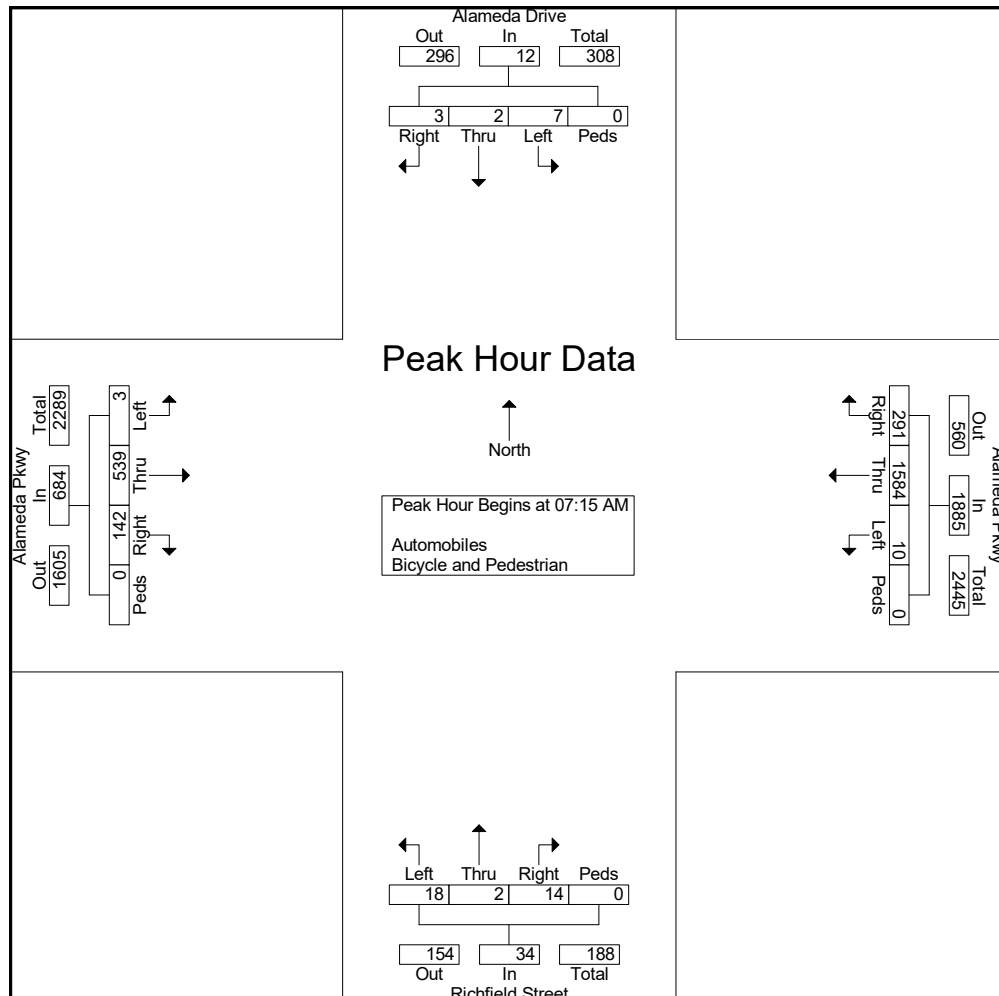


Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
AM Peak  
Alameda Pkwy and Alameda Rd/Richfield St

File Name : Alameda Pkwy and Alameda Dr AM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Richfield Street Northbound					Alameda Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	120	29	0	150	1	464	81	0	546	0	0	2	0	2	1	0	1	0	2	700
07:30 AM	0	138	65	0	203	2	331	86	0	419	11	1	10	0	22	2	0	1	0	3	647
07:45 AM	1	132	28	0	161	3	399	80	0	482	7	1	1	0	9	2	0	0	0	2	654
08:00 AM	1	149	20	0	170	4	390	44	0	438	0	0	1	0	1	2	2	1	0	5	614
Total Volume	3	539	142	0	684	10	1584	291	0	1885	18	2	14	0	34	7	2	3	0	12	2615
% App. Total	0.4	78.8	20.8	0		0.5	84	15.4	0		52.9	5.9	41.2	0		58.3	16.7	25	0		
PHF	.750	.904	.546	.000	.842	.625	.853	.846	.000	.863	.409	.500	.350	.000	.386	.875	.250	.750	.000	.600	.934





File Name : Alameda Pkwy and Alameda Dr PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 1

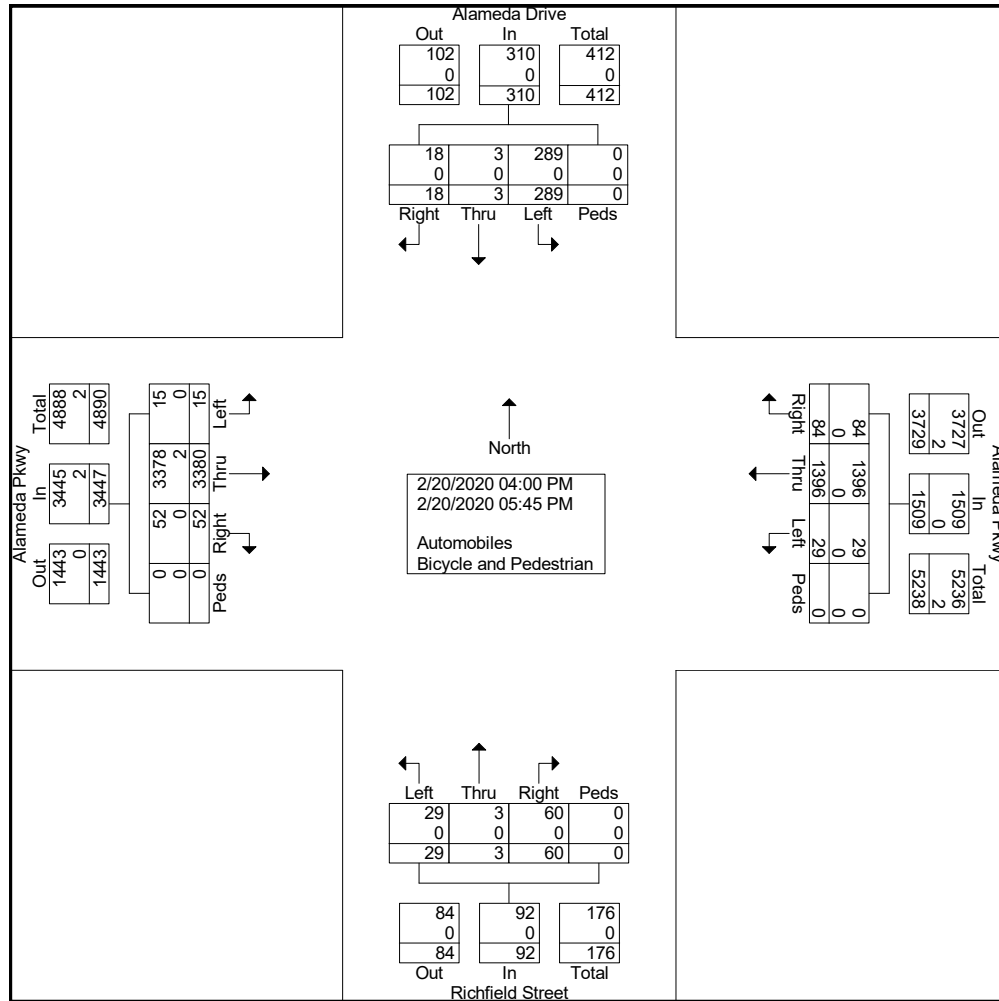
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Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Pkwy and Alameda Rd/Richfield St

File Name : Alameda Pkwy and Alameda Dr PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 2



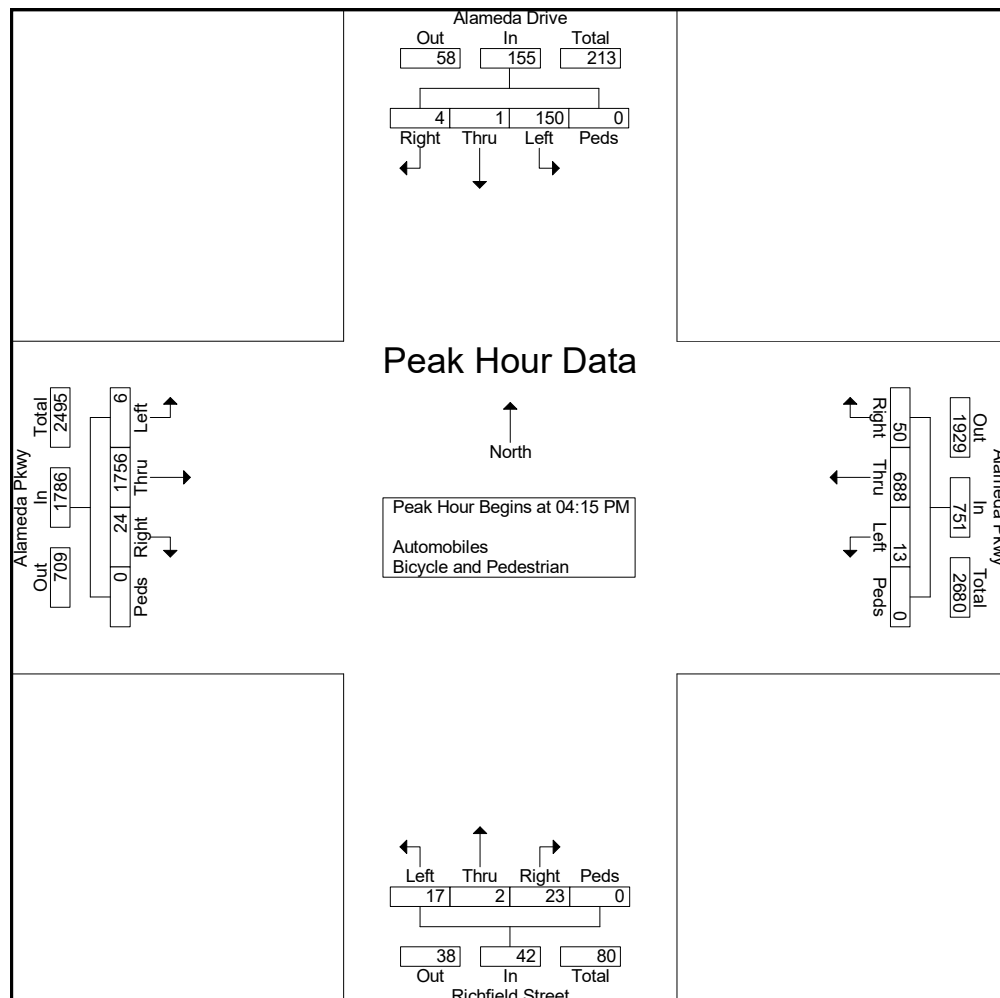


Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
PM Peak  
Alameda Pkwy and Alameda Rd/Richfield St

File Name : Alameda Pkwy and Alameda Dr PM  
Site Code : IPO 491  
Start Date : 2/20/2020  
Page No : 3

	Alameda Pkwy Eastbound					Alameda Pkwy Westbound					Richfield Street Northbound					Alameda Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	2	450	4	0	456	3	175	9	0	187	7	1	2	0	10	32	0	4	0	36	689
04:30 PM	0	429	5	0	434	2	190	12	0	204	4	1	4	0	9	27	0	0	0	27	674
04:45 PM	1	436	8	0	445	6	162	18	0	186	3	0	7	0	10	55	1	0	0	56	697
05:00 PM	3	441	7	0	451	2	161	11	0	174	3	0	10	0	13	36	0	0	0	36	674
Total Volume	6	1756	24	0	1786	13	688	50	0	751	17	2	23	0	42	150	1	4	0	155	2734
% App. Total	0.3	98.3	1.3	0		1.7	91.6	6.7	0		40.5	4.8	54.8	0		96.8	0.6	2.6	0		
PHF	.500	.976	.750	.000	.979	.542	.905	.694	.000	.920	.607	.500	.575	.000	.808	.682	.250	.250	.000	.692	.981



# APPENDIX B

## Trip Generation Worksheets

Trip Generation Planner (ITE 10th Edition) - Summary Report



Weekday Trip Generation  
Trips Based on Average Rates/Equations

Project Name  
Project Number  
Buckley Yard - Retail  
096266030

							Rates			Total Trips						Net Trips after Internal Capture													
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out						
ITE Code	Internal Capture Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq	100.03	9.50	20.45	402	38	82	22	16	41	41	308	34	52	20	14	23	29						
912	Retail	Drive-In Bank	1,000 Sq Ft	General Urban/Suburban	4	Avg	470.95	40.19	32.67	4,240	362	294	185	177	153	141	3,428	342	197	173	169	115	83						
934	Restaurant	Fast-Food Restaurant w/ D.T.	1,000 Sq Ft	General Urban/Suburban	9	Avg	820.38	88.99	43.38	820	89	44	45	44	22	22	664	84	30	42	42	16	13						
937	Restaurant	Coffee/Donut Shop w/ D.T.	1,000 Sq Ft	General Urban/Suburban	1	Avg	205.36	12.47	13.99	3,286	200	224	102	98	114	110	2,518	179	143	94	85	65	78						
945	Retail	Gasoline Station w/ Convenience Market	Fueling Position(s)	General Urban/Suburban	16	Avg																							
Subtotal before Internal Capture		Total Office	1,000 Sq Ft	20  10																									
		Total Retail	1,000 Sq Ft													3,688	238	306	124	114	155	151	2,825	213	195	114	99	88	107
		Total Restaurant	1,000 Sq Ft													5,060	451	338	230	221	175	163	4,089	426	227	215	211	131	96
		Total Ciema/Entertainment	Screen(s)																										
		Total Residential	Dwelling Unit(s)																										
		Total Hotel	Room(s)																										
		Total Other																											
Grand Total							8,748	689	644	354	335	330	314	6,918	639	422	329	310	219	203									

Notes:  
(1) AM and/or PM rates correspond to peak hour of generator  
(2) Land use was removed in Trip Generation, 10 Edition, trip generation data from the ITE Trip Generation, 9th Edition

Project Buckley Yard - Retail  
 Subject Trip Generation for Drive-In Bank (proposed use)  
 Designed by TES Date November 03, 2020 Job No. 96266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Drive-in Bank (912)

Independant Variable - 1000 Square Feet Gross Floor Area (X)

Gross Floor Area = **4,000** Square Feet

X = 4.000

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 13)

Average Weekday Directional Distribution: 58% ent. 42% exit.  
 T = 9.50 (X) T = 38 Average Vehicle Trip Ends  
 T = 9.50 \* 4.000 22 entering 16 exiting  
 22 + 16 = 38

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 14)

Average Weekday Directional Distribution: 50% ent. 50% exit.  
 T = 20.45 (X) T = 82 Average Vehicle Trip Ends  
 T = 20.45 \* 4.000 41 entering 41 exiting  
 41 + 41 = 82

### Weekday (900 Series Page 12)

Average Weekday Directional Distribution: 50% entering, 50% exiting  
 T = 100.03 (X) T = 402 Average Vehicle Trip Ends  
 T = 100.03 \* 4.000 201 entering 201 exiting  
 201 + 201 (\*) = 402

### Saturday Peak Hour of Generator (900 Series Page 18)

Average Saturday Directional Distribution: 51% ent. 49% exit.  
 T = 26.35 (X) T = 105 Average Vehicle Trip Ends  
 T = 26.35 \* 4.000 54 entering 51 exiting  
 54 (\*) + 51 = 105

### Non Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017-Page 207)

AM Peak Hour =	71%	Non-Pass By	PM Peak Hour =	65%	Non-Pass By
	IN	Out	Total		
AM Peak	16	11	27		
PM Peak	27	27	53		
Daily	131	131	262	PM Peak Hour Rate Applied to Daily	

### Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017 -Page 207)

AM Peak Hour =	29%	Pass By	PM Peak Hour =	35%	Pass By
	IN	Out	Total		
AM Peak	6	5	11		
PM Peak	14	14	29		
Daily	70	70	140	PM Peak Hour Rate Applied to Daily	

Project Buckley Yard - Retail  
 Subject Trip Generation for Fast-Food Restaurant with Drive-Through Window  
 Designed by TES Date November 03, 2020 Job No. 96266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Fast Food Restaurant With Drive-Through Window (934)

Independant Variable - 1000 Square Feet Gross Floor Area (X)

Gross Floor Area = 9,000 Square Feet

X = 9.000

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series page 158)**

Average Weekday  
 T = 40.19 (X)  
 T = 40.19 \* 9.000

Directional Distribution: 51% ent. 49% exit.  
 T = 362 Average Vehicle Trip Ends  
 185 entering 177 exiting  
 185 + 177 (\*) = 362

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series page 159)**

Average Weekday  
 T = 32.67 (X)  
 T = 32.67 \* 9.000

Directional Distribution: 52% ent. 48% exit.  
 T = 294 Average Vehicle Trip Ends  
 153 entering 141 exiting  
 153 + 141 = 294

### **Weekday (900 Series page 157)**

Average Weekday  
 T = 470.95 (X)  
 T = 470.95 \* 9.000

Directional Distribution: 50% entering, 50% exiting  
 T = 4240 Average Vehicle Trip Ends  
 2120 entering 2120 exiting  
 2120 + 2120 = 4240

### **Saturday Peak Hour of Generator (900 Series page 163)**

T = 54.86 (X)  
 T = 54.86 \* 9.000

Directional Distribution: 51% ent. 49% exit.  
 T = 494 Average Vehicle Trip Ends  
 252 entering 242 exiting  
 252 + 242 = 494

### **Non Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)**

AM Peak Hour =	51%	Non-Pass By	PM Peak Hour =	50%	Non-Pass By
	IN	Out	Total		
AM Peak	94	90	185		
PM Peak	77	71	147		
Daily	1060	1060	2120	PM Peak Hour Rate Applied to Daily	

### **Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)**

AM Peak Hour =	49%	Pass By	PM Peak Hour =	50%	Pass By
	IN	Out	Total		
AM Peak	91	87	177		
PM Peak	77	71	147		
Daily	1060	1060	2120	PM Peak Hour Rate Applied to Daily	



Project Buckley Yard - Retail  
 Subject Trip Generation for Coffee/Donut Shop with Drive Through  
 Designed by TES Date November 03, 2020 Job No. 096266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Coffee/Donut Shop with Drive Through (937)

Independant Variable - 1000 Square Feet Gross Floor Feet (X)

Gross Floor Area = 1,000

X = 1.0

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Series 900 Page 232)**

T = 88.99 (X)	Directional Distribution: 51% ent. 49% exit.
T = 88.99 * 1	T = 89 Average Vehicle Trip Ends
	45 entering 44 exiting

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Series 900 Page 233)**

T = 43.38 (X)	Directional Distribution: 50% ent. 50% exit.
T = 43.38 * 1	T = 44 Average Vehicle Trip Ends
	22 entering 22 exiting

### **Weekday (Series 900 Page 231)**

Average Weekday	Directional Distribution: 50% entering, 50% exiting
(T) = 820.38 (X)	T = 820 Average Vehicle Trip Ends
(T) = 820.38 * (1.0)	410 entering 410 exiting
	410 + 410 = 820

Project Buckley Yard - Retail  
 Subject Trip Generation for Gasoline/Service Station with Convenience Market  
 Designed by TES Date November 03, 2020 Job No. 96266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Gasoline/Service Station with Convenience Market (945)

Independant Variable - Vehicle Fueling Positions (X)

Vehicle Fueling Positions= **16** Positions

X = 16

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series page 369)

Average Weekday	Directional Distribution:	51% ent.	49% exit.
T = 12.47 (X)	T = 200	Average Vehicle Trip Ends	
T = 12.47 * 16	102 entering	98 exiting	
	102 + 98 = 200		

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series page 370)

Average Weekday	Directional Distribution:	51% ent.	49% exit.
T = 13.99 (X)	T = 224	Average Vehicle Trip Ends	
T = 13.99 * 16.000	114 entering	110 exiting	
	114 + 110 = 224		

### Weekday (900 Series page 368)

Average Weekday	Directional Distribution:	50% entering,	50% exiting
T = 205.36 (X)	T = 3286	Average Vehicle Trip Ends	
T = 205.36 * 16.000	1643 entering	1643 exiting	
	1643 + 1643 = 3286		

### Non Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)

PM Peak Hour = 44% Non-Pass By	AM Peak Hour = 38% Non-Pass By
IN Out Total	
AM Peak 39 37 76	
PM Peak 50 48 99	
Daily 723 723 1446	PM Peak Hour Rate Applied to Daily

### Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)

PM Peak Hour = 56% Pass By	AM Peak Hour = 62% Pass By
IN Out Total	
AM Peak 63 61 124	
PM Peak 64 62 125	
Daily 920 920 1840	PM Peak Hour Rate Applied to Daily

Trip Generation Planner (ITE 10th Edition) - Summary Report

Weekday Trip Generation  
Trips Based on Average Rates/Equations

Project Name  
Project Number

Buckley Yard - West Residential  
096266030



							Rates			Total Trips						
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
ITE Code	Internal Capture Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq										
210	Residential	Single-Family Detached Housing	Dwelling Unit(s)	General Urban/Suburban	52	Avg	9.44	0.74	0.99	492	38	51	10	28	32	19
220	Residential	Multifamily Housing (Low-Rise)	Dwelling Unit(s)	General Urban/Suburban	113	Avg	7.32	0.46	0.56	828	52	63	12	40	40	23
Subtotal before Internal Capture		Total Office	1,000 Sq Ft	165												
		Total Retail	1,000 Sq Ft													
		Total Restaurant	1,000 Sq Ft													
		Total Ciema/Entertainment	Screen(s)													
		Total Residential	Dwelling Unit(s)							1,320	90	114	22	68	72	42
		Total Hotel	Room(s)													
		Total Other														
Grand Total										1,320	90	114	22	68	72	42

Notes:  
(1) AM and/or PM rates correspond to peak hour of generator  
(2) Land use was removed in Trip Generation, 10 Edition, trip generation data from the ITE Trip Generation, 9th Edition

Project Buckley Yard - West Residential  
 Subject Trip Generation for Single-Family Detached Housing  
 Designed by TES Date November 03, 2020 Job No. 096266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Single-Family Detached Housing (210)

Independant Variable - Dwelling Units (X)

$$X = 52$$

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 3)**

Average Weekday

$$(T) = 0.74(X)$$

$$(T) = 0.74 * (52.0)$$

Directional Distribution: 25% entering, 75% exiting

$$T = 38 \quad \text{Average Vehicle Trip Ends}$$

$$10 \quad \text{entering} \quad 28 \quad \text{exiting}$$

$$10 + 28 = 38$$

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 4)**

Average Weekday

$$(T) = 0.99(X)$$

$$(T) = 0.99 * (52.0)$$

Directional Distribution: 63% entering, 37% exiting

$$T = 51 \quad \text{Average Vehicle Trip Ends}$$

$$32 \quad \text{entering} \quad 19 \quad \text{exiting}$$

$$32 + 19 = 51$$

### **Peak Hour of Generator, Saturday (200 Series Page 8)**

Average Saturday

$$(T) = 0.93(X)$$

$$(T) = 0.93 * (52.0)$$

Directional Distribution: 54% entering, 46% exiting

$$T = 48 \quad \text{Average Vehicle Trip Ends}$$

$$26 \quad \text{entering} \quad 22 \quad \text{exiting}$$

$$26 + 22 = 48$$

### **Weekday (200 Series Page 2)**

Average Weekday

$$(T) = 9.44(X)$$

$$(T) = 9.44 * (52.0)$$

Directional Distribution: 50% entering, 50% exiting

$$T = 492 \quad \text{Average Vehicle Trip Ends}$$

$$246 \quad \text{entering} \quad 246 \quad \text{exiting}$$

$$246 + 246 = 492$$

Project Buckley Yard - West Residential  
 Subject Trip Generation for Multifamily Housing (Low-Rise)  
 Designed by TES Date November 03, 2020 Job No. 096266030  
 Checked by \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independant Variable - Dwelling Units (X)

$$X = 113$$

T = Average Vehicle Trip Ends

### Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (Series 200 Page 32)

		Directional Distribution: 23% ent. 77% exit.			
$T = 0.46 * X$		T =	52	Average Vehicle Trip Ends	
$T = 0.46 *$	113.0	12	entering	40	exiting
		12	+	40	= 52

### Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (Series 200 page 33)

		Directional Distribution: 63% ent. 37% exit.			
$T = 0.56 * X$		T =	63	Average Vehicle Trip Ends	
$T = 0.56 *$	113.0	40	entering	23	exiting
		40	+	23	= 63

### Weekday (Series 200 Page 31)

Daily Weekday		Directional Distribution: 50% entering, 50% exiting			
$T = 7.32 * X$		T =	828	Average Vehicle Trip Ends	
$T = 7.32 *$	113.0	414	entering	414	exiting
		414	+	414	= 828

### Peak Hour of Generator, Saturday (Series 200 Page 37)

Daily Weekday		Directional Distribution: 50% ent. 50% exit.			
$T = 0.70 * X$		T =	79	Average Vehicle Trip Ends	
$T = 0.70 *$	113.0	40	entering	40	exiting
		40	+	40	= not ok

Trip Generation Planner (ITE 10th Edition) - Summary Report

Weekday Trip Generation  
Trips Based on Average Rates/Equations

Project Name  
Project Number

Buckley Yard - East Residential  
096266030



ITE Code	Internal Capture Use	Land Use Description	Independent Variable	Setting/Location	No. of Units	Avg Rate or Eq	Rates			Total Trips						
							Daily Rate	AM Rate	PM Rate	Daily Trips	AM Trips	PM Trips	AM Trips In	AM Trips Out	PM Trips In	PM Trips Out
210	Residential	Single-Family Detached Housing	Dwelling Unit(s)	General Urban/Suburban	143	Avg	9.44	0.74	0.99	1,350	106	142	26	80	89	53
Subtotal before Internal Capture			Total Office	1,000 Sq Ft	143											
			Total Retail	1,000 Sq Ft												
			Total Restaurant	1,000 Sq Ft												
			Total Ciema/Entertainment	Screen(s)												
			Total Residential	Dwelling Unit(s)		1,350	106	142	26	80	89	53				
			Total Hotel	Room(s)												
			Total Other													
Grand Total										1,350	106	142	26	80	89	75

Notes:  
(1) AM and/or PM rates correspond to peak hour of generator  
(2) Land use was removed in Trip Generation, 10 Edition, trip generation data from the ITE Trip Generation, 9th Edition

Project Buckley Yard - East Residential  
 Subject Trip Generation for Single-Family Detached Housing  
 Designed by TES Date November 03, 2020 Job No. 096266030  
 Checked by \_\_\_\_\_ Date \_\_\_\_\_ Sheet No. \_\_\_\_\_ of \_\_\_\_\_

## **TRIP GENERATION MANUAL TECHNIQUES**

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Single-Family Detached Housing (210)

Independant Variable - Dwelling Units (X)

$$X = 143$$

T = Average Vehicle Trip Ends

### **Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 3)**

Average Weekday

$$(T) = 0.74(X)$$

$$(T) = 0.74 * (143.0)$$

Directional Distribution: 25% entering, 75% exiting

$$T = 106 \quad \text{Average Vehicle Trip Ends}$$

$$26 \quad \text{entering} \quad 80 \quad \text{exiting}$$

$$26 + 80 = 106$$

### **Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 4)**

Average Weekday

$$(T) = 0.99(X)$$

$$(T) = 0.99 * (143.0)$$

Directional Distribution: 63% entering, 37% exiting

$$T = 142 \quad \text{Average Vehicle Trip Ends}$$

$$89 \quad \text{entering} \quad 53 \quad \text{exiting}$$

$$89 + 53 = 142$$

### **Peak Hour of Generator, Saturday (200 Series Page 8)**

Average Saturday

$$(T) = 0.93(X)$$

$$(T) = 0.93 * (143.0)$$

Directional Distribution: 54% entering, 46% exiting

$$T = 133 \quad \text{Average Vehicle Trip Ends}$$

$$72 \quad \text{entering} \quad 61 \quad \text{exiting}$$

$$72 + 61 = 133$$

### **Weekday (200 Series Page 2)**

Average Weekday

$$(T) = 9.44(X)$$

$$(T) = 9.44 * (143.0)$$

Directional Distribution: 50% entering, 50% exiting

$$T = 1350 \quad \text{Average Vehicle Trip Ends}$$

$$675 \quad \text{entering} \quad 675 \quad \text{exiting}$$

$$675 + 675 = 1350$$















# APPENDIX C

## Intersection Analysis Worksheets



# Timings 1: Airport Blvd & Alameda Dr

2020 Existing AM.syn  
03/25/2020

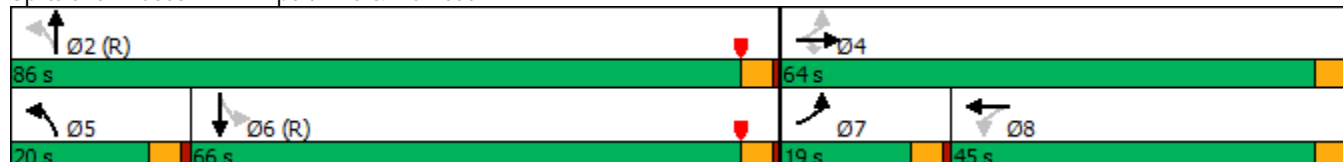
							
Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	118	158	55	130	2199	13	1122
Future Volume (vph)	118	158	55	130	2199	13	1122
Turn Type	pm+pt	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7		8	5	2		6
Permitted Phases	4	4		2		6	
Detector Phase	7	4	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	19.0	64.0	45.0	20.0	86.0	66.0	66.0
Total Split (%)	12.7%	42.7%	30.0%	13.3%	57.3%	44.0%	44.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	55.3	55.3	36.6	85.7	85.7	67.4	67.4
Actuated g/C Ratio	0.37	0.37	0.24	0.57	0.57	0.45	0.45
v/c Ratio	0.76	0.33	0.93	0.77	0.81	0.33	0.67
Control Delay	54.5	4.7	78.8	49.0	29.1	52.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	4.7	78.8	49.0	29.1	52.9	34.2
LOS	D	A	E	D	C	D	C
Approach Delay			78.8		30.5		34.4
Approach LOS			E		C		C

## Intersection Summary

Cycle Length: 150  
Actuated Cycle Length: 150  
Offset: 61.5 (41%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
Natural Cycle: 90  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 0.93  
Intersection Signal Delay: 35.3  
Intersection Capacity Utilization 85.9%  
Analysis Period (min) 15

Intersection LOS: D  
ICU Level of Service E

## Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2020 Existing AM.syn

## 1: Airport Blvd & Alameda Dr



















03/25/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	0	158	0	55	241	130	2199	0	13	1122	223
Future Volume (veh/h)	118	0	158	0	55	241	130	2199	0	13	1122	223
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	171	0	125	0	96	301	181	2339	0	16	1181	314
Peak Hour Factor	0.69	0.92	0.66	0.92	0.57	0.80	0.72	0.94	0.92	0.81	0.95	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	689	583	48	102	318	255	2920	0	80	1914	509
Arrive On Green	0.08	0.00	0.37	0.00	0.26	0.26	0.07	0.57	0.00	0.48	0.48	0.48
Sat Flow, veh/h	1781	1870	1584	1266	398	1247	1781	5274	0	154	4014	1067
Grp Volume(v), veh/h	171	0	125	0	0	397	181	2339	0	16	1002	493
Grp Sat Flow(s),veh/h/ln	1781	1870	1584	1266	0	1644	1781	1702	0	154	1702	1677
Q Serve(g_s), s	10.3	0.0	8.1	0.0	0.0	35.6	7.5	54.3	0.0	13.7	32.7	32.7
Cycle Q Clear(g_c), s	10.3	0.0	8.1	0.0	0.0	35.6	7.5	54.3	0.0	53.8	32.7	32.7
Prop In Lane	1.00		1.00	1.00		0.76	1.00		0.00	1.00		0.64
Lane Grp Cap(c), veh/h	214	689	583	48	0	420	255	2920	0	80	1623	799
V/C Ratio(X)	0.80	0.00	0.21	0.00	0.00	0.95	0.71	0.80	0.00	0.20	0.62	0.62
Avail Cap(c_a), veh/h	238	742	628	66	0	444	323	2920	0	80	1623	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	0.16	0.16	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	0.0	32.5	0.0	0.0	54.8	24.8	25.4	0.0	52.2	29.1	29.1
Incr Delay (d2), s/veh	16.0	0.0	0.2	0.0	0.0	28.6	0.9	0.4	0.0	5.5	1.8	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	3.2	0.0	0.0	18.2	3.1	21.0	0.0	0.7	13.5	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.2	0.0	32.7	0.0	0.0	83.4	25.7	25.8	0.0	57.7	30.9	32.7
LnGrp LOS	E	A	C	A	A	F	C	C	A	E	C	C
Approach Vol, veh/h		296			397			2520			1511	
Approach Delay, s/veh		46.2			83.4			25.8			31.7	
Approach LOS		D			F			C			C	
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		90.3		59.7	14.3	76.0	16.9	42.8				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s		81.5		59.5	15.5	61.5	14.5	40.5				
Max Q Clear Time (g_c+I1), s		56.3		10.1	9.5	55.8	12.3	37.6				
Green Ext Time (p_c), s		19.4		0.4	0.2	4.2	0.1	0.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			33.8									
HCM 6th LOS			C									

# Timings

## 1: Airport Blvd & Alameda Dr

2020 Existing PM.syn  
03/25/2020

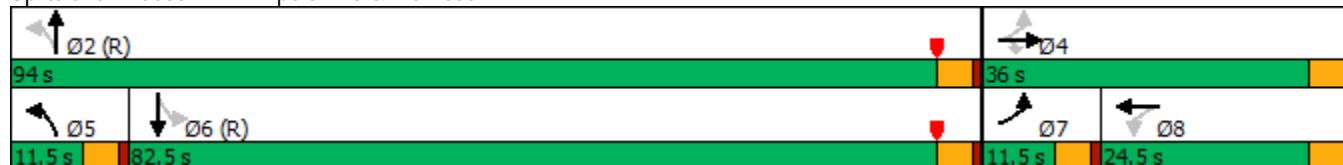
									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	75	5	57	4	7	27	1287	173	2368
Future Volume (vph)	75	5	57	4	7	27	1287	173	2368
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7	4			8	5	2		6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	8	8	5	2	6	6
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)	11.5	24.5	24.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	11.5	36.0	36.0	24.5	24.5	11.5	94.0	82.5	82.5
Total Split (%)	8.8%	27.7%	27.7%	18.8%	18.8%	8.8%	72.3%	63.5%	63.5%
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)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	19.3	19.3	19.3	7.8	7.8	101.7	101.7	93.0	93.0
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.78	0.78	0.72	0.72
v/c Ratio	0.84	0.03	0.33	0.14	0.54	0.31	0.36	0.93	0.69
Control Delay	91.3	45.8	14.3	60.0	29.4	12.6	4.7	64.3	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	91.3	45.8	14.3	60.0	29.4	12.6	4.7	64.3	12.5
LOS	F	D	B	E	C	B	A	E	B
Approach Delay		56.2			32.9		4.9		16.6
Approach LOS		E			C		A		B

### Intersection Summary

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 78 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 150  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 15.3  
 Intersection Capacity Utilization 73.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service D

Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2020 Existing PM.syn

## 1: Airport Blvd & Alameda Dr

03/25/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	5	57	4	7	47	27	1287	1	173	2368	49
Future Volume (veh/h)	75	5	57	4	7	47	27	1287	1	173	2368	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	8	59	12	16	76	44	1414	4	219	2392	96
Peak Hour Factor	0.59	0.62	0.55	0.33	0.44	0.62	0.61	0.91	0.25	0.79	0.99	0.51
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	307	260	156	21	101	167	4030	11	313	3533	141
Arrive On Green	0.05	0.16	0.16	0.08	0.08	0.08	0.03	0.77	0.77	0.70	0.70	0.70
Sat Flow, veh/h	1781	1870	1582	1329	282	1341	1781	5257	15	378	5037	201
Grp Volume(v), veh/h	127	8	59	12	0	92	44	916	502	219	1611	877
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1329	0	1623	1781	1702	1868	378	1702	1833
Q Serve(g_s), s	7.0	0.5	4.2	1.1	0.0	7.2	0.8	11.2	11.2	57.0	34.9	35.6
Cycle Q Clear(g_c), s	7.0	0.5	4.2	1.1	0.0	7.2	0.8	11.2	11.2	59.7	34.9	35.6
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	177	307	260	156	0	123	167	2610	1432	313	2388	1286
V/C Ratio(X)	0.72	0.03	0.23	0.08	0.00	0.75	0.26	0.35	0.35	0.70	0.67	0.68
Avail Cap(c_a), veh/h	177	453	383	260	0	250	208	2610	1432	313	2388	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	45.6	47.2	56.0	0.0	58.9	12.4	4.8	4.8	15.7	11.0	11.1
Incr Delay (d2), s/veh	12.8	0.0	0.4	0.2	0.0	8.8	0.6	0.3	0.5	12.3	1.5	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.2	1.7	0.4	0.0	3.3	0.5	3.3	3.7	5.3	11.9	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	45.6	47.6	56.2	0.0	67.7	13.0	5.1	5.4	28.0	12.6	14.0
LnGrp LOS	E	D	D	E	A	E	B	A	A	C	B	B
Approach Vol, veh/h		194			104			1462			2707	
Approach Delay, s/veh		59.6			66.3			5.4			14.3	
Approach LOS		E			E			A			B	
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		104.2		25.8	8.5	95.7	11.5	14.3				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s		89.5		31.5	7.0	78.0	7.0	20.0				
Max Q Clear Time (g_c+I1), s		13.2		6.2	2.8	61.7	9.0	9.2				
Green Ext Time (p_c), s		13.3		0.2	0.0	14.8	0.0	0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				14.6								
HCM 6th LOS				B								

# Timings

## 1: Airport Blvd & Alameda Dr

2022 Background AM.syn

03/25/2020



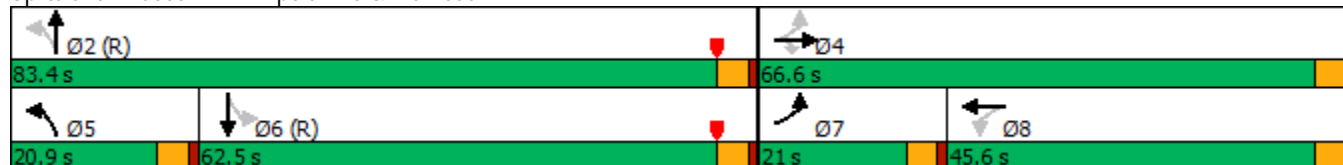
Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	138	164	57	135	2291	17	1170
Future Volume (vph)	138	164	57	135	2291	17	1170
Turn Type	pm+pt	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7		8	5	2		6
Permitted Phases	4	4		2		6	
Detector Phase	7	4	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	21.0	66.6	45.6	20.9	83.4	62.5	62.5
Total Split (%)	14.0%	44.4%	30.4%	13.9%	55.6%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	59.0	59.0	38.3	82.0	82.0	62.9	62.9
Actuated g/C Ratio	0.39	0.39	0.26	0.55	0.55	0.42	0.42
v/c Ratio	0.80	0.32	0.94	0.84	0.88	0.42	0.75
Control Delay	58.1	4.1	79.4	67.4	34.8	65.1	39.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	4.1	79.4	67.4	34.8	65.1	39.2
LOS	E	A	E	E	C	E	D
Approach Delay			79.4		37.2		39.6
Approach LOS			E		D		D

### Intersection Summary

Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 58 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 40.6  
 Intersection Capacity Utilization 89.7%  
 Analysis Period (min) 15

Intersection LOS: D  
 ICU Level of Service E

### Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2022 Background AM.syn

## 1: Airport Blvd & Alameda Dr

03/25/2020



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	0	164	0	57	254	135	2291	0	17	1170	232
Future Volume (veh/h)	138	0	164	0	57	254	135	2291	0	17	1170	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	0	127	0	100	318	188	2437	0	21	1232	327
Peak Hour Factor	0.69	0.92	0.66	0.92	0.57	0.80	0.72	0.94	0.92	0.81	0.95	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	730	618	48	105	333	241	2808	0	67	1807	479
Arrive On Green	0.09	0.00	0.39	0.00	0.27	0.27	0.07	0.55	0.00	0.45	0.45	0.45
Sat Flow, veh/h	1781	1870	1584	1264	393	1250	1781	5274	0	140	4016	1065
Grp Volume(v), veh/h	200	0	127	0	0	418	188	2437	0	21	1044	515
Grp Sat Flow(s),veh/h/ln	1781	1870	1584	1264	0	1644	1781	1702	0	140	1702	1677
Q Serve(g_s), s	11.9	0.0	8.0	0.0	0.0	37.5	8.3	61.6	0.0	20.9	36.5	36.5
Cycle Q Clear(g_c), s	11.9	0.0	8.0	0.0	0.0	37.5	8.3	61.6	0.0	67.5	36.5	36.5
Prop In Lane	1.00		1.00	1.00		0.76	1.00		0.00	1.00		0.64
Lane Grp Cap(c), veh/h	230	730	618	48	0	438	241	2808	0	67	1532	755
V/C Ratio(X)	0.87	0.00	0.21	0.00	0.00	0.95	0.78	0.87	0.00	0.31	0.68	0.68
Avail Cap(c_a), veh/h	260	774	656	57	0	450	311	2808	0	67	1532	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	30.3	0.0	0.0	54.1	28.7	29.1	0.0	65.3	32.7	32.7
Incr Delay (d2), s/veh	23.5	0.0	0.2	0.0	0.0	30.6	0.9	0.4	0.0	11.6	2.5	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	3.2	0.0	0.0	19.4	3.4	24.1	0.0	1.0	15.3	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	0.0	30.5	0.0	0.0	84.7	29.6	29.4	0.0	77.0	35.2	37.7
LnGrp LOS	E	A	C	A	A	F	C	C	A	E	D	D
Approach Vol, veh/h	327			418			2625			1580		
Approach Delay, s/veh	50.0			84.7			29.5			36.6		
Approach LOS	D			F			C			D		
Timer - Assigned Phs	2			4		5	6	7	8			
Phs Duration (G+Y+Rc), s	87.0			63.0		15.0	72.0	18.5	44.5			
Change Period (Y+Rc), s	4.5			4.5		4.5	4.5	4.5	4.5			
Max Green Setting (Gmax), s	78.9			62.1		16.4	58.0	16.5	41.1			
Max Q Clear Time (g_c+I1), s	63.6			10.0		10.3	69.5	13.9	39.5			
Green Ext Time (p_c), s	13.1			0.4		0.2	0.0	0.1	0.5			
Intersection Summary												
HCM 6th Ctrl Delay	37.7											
HCM 6th LOS	D											

# Timings

## 1: Airport Blvd & Alameda Dr

2022 Background PM.syn

03/25/2020

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	86	5	59	4	7	28	1341	190	2474
Future Volume (vph)	86	5	59	4	7	28	1341	190	2474
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7	4			8	5	2		6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	8	8	5	2	6	6
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)	11.5	24.5	24.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	11.5	36.0	36.0	24.5	24.5	11.5	94.0	82.5	82.5
Total Split (%)	8.8%	27.7%	27.7%	18.8%	18.8%	8.8%	72.3%	63.5%	63.5%
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)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	19.3	19.3	19.3	7.8	7.8	101.7	101.7	92.8	92.8
Actuated g/C Ratio	0.15	0.15	0.15	0.06	0.06	0.78	0.78	0.71	0.71
v/c Ratio	0.96	0.03	0.34	0.14	0.59	0.33	0.37	1.10	0.72
Control Delay	115.5	45.6	15.3	59.8	33.6	13.5	4.8	111.4	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.5	45.6	15.3	59.8	33.6	13.5	4.8	111.4	13.3
LOS	F	D	B	E	C	B	A	F	B
Approach Delay		72.3			36.5		5.1		21.6
Approach LOS		E			D		A		C

### Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 78 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 19.4

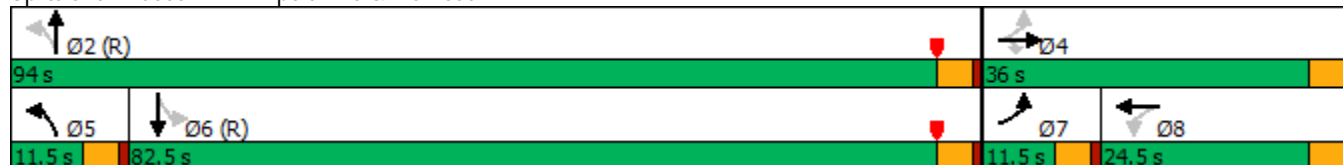
Intersection LOS: B

Intersection Capacity Utilization 75.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2022 Background PM.syn

## 1: Airport Blvd & Alameda Dr



















03/25/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	5	59	4	7	51	28	1341	1	190	2474	51
Future Volume (veh/h)	86	5	59	4	7	51	28	1341	1	190	2474	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	8	52	12	16	82	46	1474	4	241	2499	100
Peak Hour Factor	0.59	0.62	0.55	0.33	0.44	0.62	0.61	0.91	0.25	0.79	0.99	0.51
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	314	266	162	21	108	158	4011	11	295	3512	139
Arrive On Green	0.05	0.17	0.17	0.08	0.08	0.08	0.03	0.76	0.76	0.70	0.70	0.70
Sat Flow, veh/h	1781	1870	1582	1338	265	1356	1781	5258	14	357	5038	200
Grp Volume(v), veh/h	146	8	52	12	0	98	46	954	524	241	1682	917
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1338	0	1620	1781	1702	1868	357	1702	1834
Q Serve(g_s), s	7.0	0.5	3.7	1.1	0.0	7.7	0.9	12.0	12.0	87.2	38.5	39.4
Cycle Q Clear(g_c), s	7.0	0.5	3.7	1.1	0.0	7.7	0.9	12.0	12.0	90.6	38.5	39.4
Prop In Lane	1.00		1.00	1.00		0.84	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	177	314	266	162	0	129	158	2597	1425	295	2373	1278
V/C Ratio(X)	0.82	0.03	0.20	0.07	0.00	0.76	0.29	0.37	0.37	0.82	0.71	0.72
Avail Cap(c_a), veh/h	177	453	383	261	0	249	198	2597	1425	295	2373	1278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	45.2	46.5	55.6	0.0	58.6	15.1	5.1	5.1	21.7	11.8	11.9
Incr Delay (d2), s/veh	25.8	0.0	0.4	0.2	0.0	8.9	0.8	0.3	0.6	21.6	1.8	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.2	1.5	0.4	0.0	3.5	0.6	3.6	4.0	8.1	13.2	15.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.2	45.2	46.9	55.8	0.0	67.6	15.9	5.4	5.6	43.3	13.6	15.4
LnGrp LOS	F	D	D	E	A	E	B	A	A	D	B	B
Approach Vol, veh/h	206			110			1524			2840		
Approach Delay, s/veh	70.4			66.3			5.8			16.7		
Approach LOS	E			E			A			B		
Timer - Assigned Phs	2			4			5			6		
Phs Duration (G+Y+Rc), s	103.7			26.3			8.6			95.1		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	89.5			31.5			7.0			78.0		
Max Q Clear Time (g_c+l1), s	14.0			5.7			2.9			92.6		
Green Ext Time (p_c), s	14.3			0.2			0.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	16.7											
HCM 6th LOS	B											



# Timings 1: Airport Blvd & Alameda Dr

2022 Total AM.syn  
11/03/2020

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	138	2	164	38	61	138	2325	73	1170
Future Volume (vph)	138	2	164	38	61	138	2325	73	1170
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7	4			8	5	2		6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	8	8	5	2	6	6
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)	11.5	24.5	24.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	15.0	57.0	57.0	42.0	42.0	11.5	93.0	81.5	81.5
Total Split (%)	10.0%	38.0%	38.0%	28.0%	28.0%	7.7%	62.0%	54.3%	54.3%
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)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	52.5	52.5	52.5	37.5	37.5	88.5	88.5	77.0	77.0
Actuated g/C Ratio	0.35	0.35	0.35	0.25	0.25	0.59	0.59	0.51	0.51
v/c Ratio	1.16	0.00	0.39	0.12	1.11	1.12	0.82	1.84	0.61
Control Delay	151.3	32.0	18.8	44.7	128.0	124.5	27.6	470.5	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	151.3	32.0	18.8	44.7	128.0	124.5	27.6	470.5	25.9
LOS	F	C	B	D	F	F	C	F	C
Approach Delay		77.8			121.3		34.6		50.2
Approach LOS		E			F		C		D

## Intersection Summary

Cycle Length: 150  
Actuated Cycle Length: 150  
Offset: 57.8 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
Natural Cycle: 90  
Control Type: Actuated-Coordinated  
Maximum v/c Ratio: 1.84  
Intersection Signal Delay: 51.5  
Intersection Capacity Utilization 92.8%  
Analysis Period (min) 15

Intersection LOS: D  
ICU Level of Service F

Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2022 Total AM.syn



















## 1: Airport Blvd & Alameda Dr

11/03/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	2	164	38	61	289	138	2325	0	73	1170	232
Future Volume (veh/h)	138	2	164	38	61	289	138	2325	0	73	1170	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	2	127	41	107	361	192	2473	0	90	1232	327
Peak Hour Factor	0.69	0.92	0.66	0.92	0.57	0.80	0.72	0.94	0.92	0.81	0.95	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	655	554	363	94	316	230	3013	0	76	2062	547
Arrive On Green	0.07	0.35	0.35	0.25	0.25	0.25	0.05	0.59	0.00	0.51	0.51	0.51
Sat Flow, veh/h	1781	1870	1584	1260	375	1266	1781	5274	0	135	4016	1065
Grp Volume(v), veh/h	200	2	127	41	0	468	192	2473	0	90	1044	515
Grp Sat Flow(s),veh/h/ln	1781	1870	1584	1260	0	1641	1781	1702	0	135	1702	1677
Q Serve(g_s), s	10.5	0.1	8.5	3.8	0.0	37.5	7.0	57.8	0.0	30.7	32.3	32.3
Cycle Q Clear(g_c), s	10.5	0.1	8.5	3.8	0.0	37.5	7.0	57.8	0.0	77.0	32.3	32.3
Prop In Lane	1.00		1.00	1.00		0.77	1.00		0.00	1.00		0.64
Lane Grp Cap(c), veh/h	173	655	554	363	0	410	230	3013	0	76	1747	861
V/C Ratio(X)	1.16	0.00	0.23	0.11	0.00	1.14	0.84	0.82	0.00	1.19	0.60	0.60
Avail Cap(c_a), veh/h	173	655	554	363	0	410	230	3013	0	76	1747	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	31.7	34.5	43.6	0.0	56.3	27.8	24.4	0.0	69.4	25.6	25.6
Incr Delay (d2), s/veh	117.4	0.0	0.2	0.1	0.0	88.8	22.7	2.7	0.0	163.5	1.5	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	0.0	3.4	1.2	0.0	25.8	5.1	22.7	0.0	6.3	13.1	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	160.1	31.7	34.7	43.7	0.0	145.0	50.6	27.1	0.0	232.8	27.1	28.7
LnGrp LOS	F	C	C	D	A	F	D	C	A	F	C	C
Approach Vol, veh/h		329			509			2665			1649	
Approach Delay, s/veh		110.9			136.9			28.8			38.8	
Approach LOS		F			F			C			D	
Timer - Assigned Phs		2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s		93.0		57.0	11.5	81.5	15.0	42.0				
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s		88.5		52.5	7.0	77.0	10.5	37.5				
Max Q Clear Time (g_c+I1), s		59.8		10.5	9.0	79.0	12.5	39.5				
Green Ext Time (p_c), s		22.7		0.4	0.0	0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				47.9								
HCM 6th LOS				D								

# Timings 1: Airport Blvd & Alameda Dr

2022 Total PM.syn  
11/03/2020

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	86	13	59	28	11	30	1363	247	2474
Future Volume (vph)	86	13	59	28	11	30	1363	247	2474
Turn Type	pm+pt	NA	Perm	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases	7	4			8	5	2		6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	8	8	5	2	6	6
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)	11.5	24.5	24.5	24.5	24.5	11.5	24.5	24.5	24.5
Total Split (s)	11.5	36.0	36.0	24.5	24.5	11.5	94.0	82.5	82.5
Total Split (%)	8.8%	27.7%	27.7%	18.8%	18.8%	8.8%	72.3%	63.5%	63.5%
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)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lead		Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	24.8	24.8	24.8	13.3	13.3	96.2	96.2	87.1	87.1
Actuated g/C Ratio	0.19	0.19	0.19	0.10	0.10	0.74	0.74	0.67	0.67
v/c Ratio	0.88	0.06	0.29	0.60	0.65	0.34	0.40	1.56	0.77
Control Delay	93.0	41.2	12.8	72.5	42.4	14.5	6.9	297.1	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.0	41.2	12.8	72.5	42.4	14.5	6.9	297.1	17.9
LOS	F	D	B	E	D	B	A	F	B
Approach Delay		57.7			53.4		7.2		47.9
Approach LOS		E			D		A		D

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 78 (60%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 36.0

Intersection LOS: D

Intersection Capacity Utilization 75.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr

























# HCM 6th Signalized Intersection Summary

2022 Total PM.syn

## 1: Airport Blvd & Alameda Dr





















11/03/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	13	59	28	11	76	30	1363	1	247	2474	51
Future Volume (veh/h)	86	13	59	28	11	76	30	1363	1	247	2474	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	21	62	85	25	123	49	1498	4	313	2499	100
Peak Hour Factor	0.59	0.62	0.55	0.33	0.44	0.62	0.61	0.91	0.25	0.79	0.99	0.51
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	372	314	200	30	149	152	3849	10	274	3353	133
Arrive On Green	0.05	0.20	0.20	0.11	0.11	0.11	0.03	0.73	0.73	0.67	0.67	0.67
Sat Flow, veh/h	1781	1870	1583	1312	274	1349	1781	5258	14	349	5038	200
Grp Volume(v), veh/h	146	21	62	85	0	148	49	970	532	313	1682	917
Grp Sat Flow(s),veh/h/ln	1781	1870	1583	1312	0	1623	1781	1702	1868	349	1702	1834
Q Serve(g_s), s	7.0	1.2	4.2	8.0	0.0	11.6	1.1	13.9	13.9	81.3	42.5	43.5
Cycle Q Clear(g_c), s	7.0	1.2	4.2	8.0	0.0	11.6	1.1	13.9	13.9	86.5	42.5	43.5
Prop In Lane	1.00		1.00	1.00		0.83	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	177	372	314	200	0	179	152	2492	1367	274	2266	1221
V/C Ratio(X)	0.82	0.06	0.20	0.43	0.00	0.83	0.32	0.39	0.39	1.14	0.74	0.75
Avail Cap(c_a), veh/h	177	453	383	257	0	250	191	2492	1367	274	2266	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	42.2	43.4	55.0	0.0	56.6	19.0	6.5	6.5	32.6	14.4	14.5
Incr Delay (d2), s/veh	25.9	0.1	0.3	1.4	0.0	14.7	1.2	0.5	0.8	98.7	2.2	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.6	1.7	2.8	0.0	5.5	0.8	4.5	5.0	16.5	15.2	17.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	42.3	43.7	56.5	0.0	71.3	20.3	7.0	7.4	131.3	16.6	18.8
LnGrp LOS	E	D	D	E	A	E	C	A	A	F	B	B
Approach Vol, veh/h	229			233			1551			2912		
Approach Delay, s/veh	65.2			65.9			7.5			29.6		
Approach LOS	E			E			A			C		
Timer - Assigned Phs	2			4			5			6		
Phs Duration (G+Y+Rc), s	99.7			30.3			8.6			91.0		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	89.5			31.5			7.0			78.0		
Max Q Clear Time (g_c+I1), s	15.9			6.2			3.1			88.5		
Green Ext Time (p_c), s	14.7			0.3			0.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	26.0											
HCM 6th LOS	C											

Timings  
1: Airport Blvd & Alameda Dr

2022 Total AM Improved.syn

11/04/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	138	2	164	38	61	289	138	2325	73	1170
Future Volume (vph)	138	2	164	38	61	289	138	2325	73	1170
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4			8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	8	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	24.5	24.5	24.5	11.5	24.5	9.5	24.5
Total Split (s)	14.1	51.1	51.1	37.0	37.0	37.0	25.1	86.9	12.0	73.8
Total Split (%)	9.4%	34.1%	34.1%	24.7%	24.7%	24.7%	16.7%	57.9%	8.0%	49.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	42.5	42.5	42.5	28.4	28.4	28.4	97.8	86.6	86.9	79.4
Actuated g/C Ratio	0.28	0.28	0.28	0.19	0.19	0.19	0.65	0.58	0.58	0.53
v/c Ratio	0.61	0.00	0.41	0.15	0.30	0.92	0.72	0.84	0.66	0.59
Control Delay	51.9	36.0	8.0	50.1	53.4	67.6	35.7	30.5	50.6	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	36.0	8.0	50.1	53.4	67.6	35.7	30.5	50.6	25.7
LOS	D	D	A	D	D	E	D	C	D	C
Approach Delay		27.7			63.2			30.8		27.1
Approach LOS		C			E			C		C

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 81.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr



























# HCM 6th Signalized Intersection Summary

2022 Total AM Improved.syn

## 1: Airport Blvd & Alameda Dr

11/04/2020





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	2	164	38	61	289	138	2325	0	73	1170	232
Future Volume (veh/h)	138	2	164	38	61	289	138	2325	0	73	1170	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	200	2	127	41	107	361	192	2473	0	90	1232	327
Peak Hour Factor	0.69	0.92	0.66	0.92	0.57	0.80	0.72	0.94	0.92	0.81	0.95	0.71
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	581	492	321	405	343	270	2879	0	132	2154	572
Arrive On Green	0.06	0.31	0.31	0.22	0.22	0.22	0.06	0.56	0.00	0.04	0.54	0.54
Sat Flow, veh/h	1781	1870	1584	1260	1870	1583	1781	5274	0	1781	4016	1065
Grp Volume(v), veh/h	200	2	127	41	107	361	192	2473	0	90	1044	515
Grp Sat Flow(s),veh/h/ln	1781	1870	1584	1260	1870	1583	1781	1702	0	1781	1702	1677
Q Serve(g_s), s	9.6	0.1	9.0	4.0	7.1	32.5	7.1	61.4	0.0	3.4	30.8	30.8
Cycle Q Clear(g_c), s	9.6	0.1	9.0	4.0	7.1	32.5	7.1	61.4	0.0	3.4	30.8	30.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.64
Lane Grp Cap(c), veh/h	318	581	492	321	405	343	270	2879	0	132	1826	900
V/C Ratio(X)	0.63	0.00	0.26	0.13	0.26	1.05	0.71	0.86	0.00	0.68	0.57	0.57
Avail Cap(c_a), veh/h	318	581	492	321	405	343	402	2879	0	158	1826	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	35.7	38.7	47.6	48.8	58.8	21.1	27.7	0.0	33.4	23.3	23.3
Incr Delay (d2), s/veh	3.9	0.0	0.3	0.2	0.3	63.1	3.5	3.6	0.0	9.0	1.3	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.1	3.6	1.3	3.4	19.1	3.0	24.7	0.0	2.0	12.4	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.1	35.7	39.0	47.7	49.2	121.8	24.6	31.3	0.0	42.4	24.6	25.9
LnGrp LOS	D	D	D	D	D	F	C	C	A	D	C	C
Approach Vol, veh/h		329			509			2665			1649	
Approach Delay, s/veh		45.1			100.6			30.8			25.9	
Approach LOS		D			F			C			C	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	89.1		51.1	13.9	85.0	14.1	37.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	7.5	82.4		46.6	20.6	69.3	9.6	32.5				
Max Q Clear Time (g_c+l1), s	5.4	63.4		11.0	9.1	32.8	11.6	34.5				
Green Ext Time (p_c), s	0.0	16.0		0.4	0.4	14.1	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				37.1								
HCM 6th LOS				D								

# Timings

2022 Total PM Improved.syn

## 1: Airport Blvd & Alameda Dr

11/04/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	86	13	59	28	11	76	30	1363	247	2474
Future Volume (vph)	86	13	59	28	11	76	30	1363	247	2474
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4			8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	8	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	24.5	24.5	24.5	11.5	24.5	9.5	24.5
Total Split (s)	12.2	36.8	36.8	24.6	24.6	24.6	11.6	57.9	35.3	81.6
Total Split (%)	9.4%	28.3%	28.3%	18.9%	18.9%	18.9%	8.9%	44.5%	27.2%	62.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	25.5	25.5	25.5	13.3	13.3	13.3	74.8	68.2	95.5	86.4
Actuated g/C Ratio	0.20	0.20	0.20	0.10	0.10	0.10	0.58	0.52	0.73	0.66
v/c Ratio	0.59	0.06	0.28	0.60	0.13	0.45	0.33	0.56	0.75	0.77
Control Delay	55.7	40.7	10.8	72.5	52.4	13.4	21.8	23.6	35.2	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	40.7	10.8	72.5	52.4	13.4	21.8	23.6	35.2	18.5
LOS	E	D	B	E	D	B	C	C	D	B
Approach Delay		37.0			39.1			23.5		20.3
Approach LOS		D			D			C		C

### Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 23.1

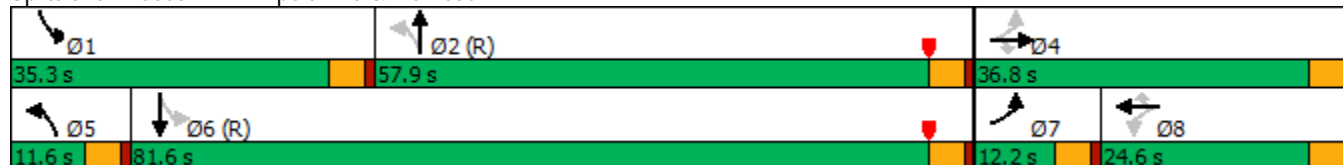
Intersection LOS: C

Intersection Capacity Utilization 75.9%

ICU Level of Service D

Analysis Period (min) 15

### Splits and Phases: 1: Airport Blvd & Alameda Dr



























# HCM 6th Signalized Intersection Summary

2022 Total PM Improved.syn

1: Airport Blvd & Alameda Dr

11/04/2020

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	13	59	28	11	76	30	1363	1	247	2474	51
Future Volume (veh/h)	86	13	59	28	11	76	30	1363	1	247	2474	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	21	62	85	25	123	49	1498	4	313	2499	100
Peak Hour Factor	0.59	0.63	0.55	0.33	0.44	0.62	0.61	0.91	0.25	0.79	0.99	0.51
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	357	302	182	181	153	153	3280	9	366	3393	135
Arrive On Green	0.06	0.19	0.19	0.10	0.10	0.10	0.03	0.62	0.62	0.08	0.67	0.67
Sat Flow, veh/h	1781	1870	1583	1311	1870	1580	1781	5258	14	1781	5038	200
Grp Volume(v), veh/h	146	21	62	85	25	123	49	970	532	313	1682	917
Grp Sat Flow(s),veh/h/ln	1781	1870	1583	1311	1870	1580	1781	1702	1868	1781	1702	1834
Q Serve(g_s), s	7.7	1.2	4.3	8.1	1.6	9.9	1.3	19.5	19.5	7.7	41.5	42.4
Cycle Q Clear(g_c), s	7.7	1.2	4.3	8.1	1.6	9.9	1.3	19.5	19.5	7.7	41.5	42.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.11
Lane Grp Cap(c), veh/h	266	357	302	182	181	153	153	2124	1165	366	2293	1235
V/C Ratio(X)	0.55	0.06	0.21	0.47	0.14	0.80	0.32	0.46	0.46	0.85	0.73	0.74
Avail Cap(c_a), veh/h	266	465	393	258	289	244	194	2124	1165	643	2293	1235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	43.0	44.3	56.7	53.7	57.5	16.4	12.9	12.9	16.4	13.7	13.9
Incr Delay (d2), s/veh	2.4	0.1	0.3	1.8	0.3	9.6	1.2	0.7	1.3	5.7	2.1	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.6	1.7	2.8	0.8	4.4	0.6	7.2	8.0	6.8	14.7	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	43.1	44.6	58.5	54.1	67.1	17.6	13.6	14.2	22.2	15.8	17.9
LnGrp LOS	D	D	D	E	D	E	B	B	B	C	B	B
Approach Vol, veh/h	229			233			1551			2912		
Approach Delay, s/veh	49.1			62.6			13.9			17.2		
Approach LOS	D			E			B			B		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.1	85.6		29.3	8.6	92.1	12.2	17.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	30.8	53.4		32.3	7.1	77.1	7.7	20.1				
Max Q Clear Time (g_c+I1), s	9.7	21.5		6.3	3.3	44.4	9.7	11.9				
Green Ext Time (p_c), s	0.9	12.4		0.3	0.0	25.4	0.0	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	19.8											
HCM 6th LOS	B											



# Timings 1: Airport Blvd & Alameda Dr

2040 Background AM.syn

11/04/2020

								
Lane Group	EBL	EBR	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	190	235	82	361	193	3271	22	1670
Future Volume (vph)	190	235	82	361	193	3271	22	1670
Turn Type	pm+pt	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7		8		5	2	1	6
Permitted Phases	4	4		8	2		6	
Detector Phase	7	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	10.9	39.9	29.0	29.0	22.8	100.6	9.5	87.3
Total Split (%)	7.3%	26.6%	19.3%	19.3%	15.2%	67.1%	6.3%	58.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	35.4	35.4	24.5	24.5	105.6	99.9	89.6	84.6
Actuated g/C Ratio	0.24	0.24	0.16	0.16	0.70	0.67	0.60	0.56
v/c Ratio	0.77	0.52	0.29	1.12	0.86	1.05	0.22	0.78
Control Delay	71.0	21.2	58.1	125.4	72.9	56.0	13.5	27.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0
Total Delay	71.0	21.2	58.1	125.4	72.9	70.0	13.5	27.5
LOS	E	C	E	F	E	E	B	C
Approach Delay			113.0			70.2		27.4
Approach LOS			F			E		C

## Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 57.7

Intersection LOS: E

Intersection Capacity Utilization 107.3%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr


























# HCM 6th Signalized Intersection Summary

2040 Background AM.syn

## 1: Airport Blvd & Alameda Dr

11/04/2020























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	0	235	0	82	361	193	3271	0	22	1670	331
Future Volume (veh/h)	190	0	235	0	82	361	193	3271	0	22	1670	331
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	0	130	0	89	196	210	3555	0	24	1815	360
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	228	394	334	48	259	219	235	3462	0	86	2700	527
Arrive On Green	0.04	0.00	0.21	0.00	0.14	0.14	0.07	0.68	0.00	0.02	0.63	0.63
Sat Flow, veh/h	1781	1870	1583	1260	1870	1582	1781	5274	0	1781	4286	837
Grp Volume(v), veh/h	207	0	130	0	89	196	210	3555	0	24	1436	739
Grp Sat Flow(s),veh/h/ln	1781	1870	1583	1260	1870	1582	1781	1702	0	1781	1702	1719
Q Serve(g_s), s	6.4	0.0	10.6	0.0	6.5	18.3	8.0	101.7	0.0	0.7	40.5	41.9
Cycle Q Clear(g_c), s	6.4	0.0	10.6	0.0	6.5	18.3	8.0	101.7	0.0	0.7	40.5	41.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.49
Lane Grp Cap(c), veh/h	228	394	334	48	259	219	235	3462	0	86	2145	1083
V/C Ratio(X)	0.91	0.00	0.39	0.00	0.34	0.90	0.90	1.03	0.00	0.28	0.67	0.68
Avail Cap(c_a), veh/h	228	441	374	80	305	258	329	3462	0	107	2145	1083
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.9	0.0	50.9	0.0	58.5	63.6	35.7	24.1	0.0	39.0	17.8	18.0
Incr Delay (d2), s/veh	35.7	0.0	0.7	0.0	0.8	27.8	20.0	22.7	0.0	1.8	1.7	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	0.0	4.3	0.0	3.2	9.1	9.1	43.4	0.0	0.6	15.5	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.6	0.0	51.6	0.0	59.3	91.4	55.7	46.8	0.0	40.8	19.4	21.5
LnGrp LOS	F	A	D	A	E	F	E	F	A	D	B	C
Approach Vol, veh/h	337			285			3765			2199		
Approach Delay, s/veh	79.9			81.3			47.3			20.4		
Approach LOS	E			F			D			C		
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	106.2		36.1	14.9	99.0	10.9	25.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	96.1		35.4	18.3	82.8	6.4	24.5				
Max Q Clear Time (g_c+l1), s	2.7	103.7		12.6	10.0	43.9	8.4	20.3				
Green Ext Time (p_c), s	0.0	0.0		0.4	0.3	23.5	0.0	0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	41.5											
HCM 6th LOS	D											

# Timings

## 1: Airport Blvd & Alameda Dr

2040 Background PM.syn

11/04/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	119	7	85	6	10	72	40	1914	267	3529	
Future Volume (vph)	119	7	85	6	10	72	40	1914	267	3529	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	
Protected Phases	7	4			8		5	2	1	6	
Permitted Phases	4		4	8		8	2		6		
Detector Phase	7	4	4	8	8	8	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5	
Total Split (s)	9.5	32.0	32.0	22.5	22.5	22.5	9.5	71.3	26.7	88.5	
Total Split (%)	7.3%	24.6%	24.6%	17.3%	17.3%	17.3%	7.3%	54.8%	20.5%	68.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	
Act Effect Green (s)	14.0	14.0	14.0	6.4	6.4	6.4	86.7	80.5	107.0	98.3	
Actuated g/C Ratio	0.11	0.11	0.11	0.05	0.05	0.05	0.67	0.62	0.82	0.76	
v/c Ratio	1.07	0.04	0.37	0.10	0.12	0.40	0.30	0.66	0.81	1.02	
Control Delay	153.8	50.3	15.8	61.8	61.6	7.7	18.9	18.8	53.8	38.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	153.8	50.3	15.8	61.8	61.6	7.7	18.9	18.8	53.8	38.1	
LOS	F	D	B	E	E	A	B	B	D	D	
Approach Delay		94.7			17.8			18.8		39.1	
Approach LOS		F			B			B		D	

### Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 34.2

Intersection LOS: C

Intersection Capacity Utilization 98.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr



























# HCM 6th Signalized Intersection Summary

2040 Background PM.syn





















## 1: Airport Blvd & Alameda Dr

11/04/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	7	85	6	10	72	40	1914	1	267	3529	73
Future Volume (veh/h)	119	7	85	6	10	72	40	1914	1	267	3529	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	8	49	7	11	78	43	2080	1	290	3836	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	263	222	146	126	107	109	3454	2	320	3735	76
Arrive On Green	0.04	0.14	0.14	0.07	0.07	0.07	0.03	0.66	0.66	0.10	0.73	0.73
Sat Flow, veh/h	1781	1870	1582	1341	1870	1578	1781	5271	3	1781	5150	105
Grp Volume(v), veh/h	129	8	49	7	11	78	43	1343	738	290	2527	1388
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1341	1870	1578	1781	1702	1870	1781	1702	1851
Q Serve(g_s), s	5.0	0.5	3.6	0.6	0.7	6.3	1.0	29.2	29.2	10.5	94.3	94.3
Cycle Q Clear(g_c), s	5.0	0.5	3.6	0.6	0.7	6.3	1.0	29.2	29.2	10.5	94.3	94.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	205	263	222	146	126	107	109	2230	1225	320	2469	1343
V/C Ratio(X)	0.63	0.03	0.22	0.05	0.09	0.73	0.39	0.60	0.60	0.91	1.02	1.03
Avail Cap(c_a), veh/h	205	396	335	241	259	218	124	2230	1225	445	2469	1343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	48.2	49.5	56.8	56.9	59.5	34.5	12.8	12.8	32.0	17.9	17.9
Incr Delay (d2), s/veh	6.1	0.0	0.5	0.1	0.3	9.2	2.3	1.2	2.2	17.6	24.4	33.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.2	1.5	0.2	0.4	2.8	0.9	10.5	11.9	10.7	38.0	44.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	48.3	50.0	56.9	57.1	68.7	36.8	14.0	15.0	49.6	42.2	51.6
LnGrp LOS	E	D	D	E	E	E	D	B	B	D	F	F
Approach Vol, veh/h		186			96			2124			4205	
Approach Delay, s/veh		58.0			66.5			14.8			45.8	
Approach LOS		E			E			B			D	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	89.7		22.8	8.4	98.8	9.5	13.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	22.2	66.8		27.5	5.0	84.0	5.0	18.0				
Max Q Clear Time (g_c+l1), s	12.5	31.2		5.6	3.0	96.3	7.0	8.3				
Green Ext Time (p_c), s	0.6	20.6		0.1	0.0	0.0	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			36.5									
HCM 6th LOS			D									

# Timings 1: Airport Blvd & Alameda Dr

2040 Total AM.syn  
11/03/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	190	2	235	38	86	396	196	3305	78	1670
Future Volume (vph)	190	2	235	38	86	396	196	3305	78	1670
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4			8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	8	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.5	40.5	40.5	31.0	31.0	31.0	23.1	100.0	9.5	86.4
Total Split (%)	6.3%	27.0%	27.0%	20.7%	20.7%	20.7%	15.4%	66.7%	6.3%	57.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	36.0	36.0	36.0	26.5	26.5	26.5	105.0	95.5	88.8	83.8
Actuated g/C Ratio	0.24	0.24	0.24	0.18	0.18	0.18	0.70	0.64	0.59	0.56
v/c Ratio	0.77	0.00	0.51	0.17	0.28	1.17	0.87	1.11	0.79	0.78
Control Delay	71.3	43.5	20.2	54.5	56.2	139.0	73.4	81.9	70.4	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	71.3	43.5	20.2	54.5	56.2	139.0	73.4	81.9	70.4	28.3
LOS	E	D	C	D	E	F	E	F	E	C
Approach Delay		43.1			119.2			81.5		29.9
Approach LOS		D			F			F		C

## Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 65.5

Intersection LOS: E

Intersection Capacity Utilization 110.2%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr


























# HCM 6th Signalized Intersection Summary

2040 Total AM.syn

## 1: Airport Blvd & Alameda Dr

11/03/2020





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	2	235	38	86	396	196	3305	0	78	1670	331
Future Volume (veh/h)	190	2	235	38	86	396	196	3305	0	78	1670	331
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	207	2	130	41	93	213	213	3592	0	85	1815	360
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	398	337	236	280	237	238	3393	0	106	2680	523
Arrive On Green	0.03	0.21	0.21	0.15	0.15	0.15	0.07	0.66	0.00	0.03	0.63	0.63
Sat Flow, veh/h	1781	1870	1583	1256	1870	1582	1781	5274	0	1781	4286	837
Grp Volume(v), veh/h	207	2	130	41	93	213	213	3592	0	85	1436	739
Grp Sat Flow(s),veh/h/ln	1781	1870	1583	1256	1870	1582	1781	1702	0	1781	1702	1719
Q Serve(g_s), s	5.0	0.1	10.6	4.3	6.7	19.8	8.4	99.7	0.0	3.0	41.0	42.4
Cycle Q Clear(g_c), s	5.0	0.1	10.6	4.3	6.7	19.8	8.4	99.7	0.0	3.0	41.0	42.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.49
Lane Grp Cap(c), veh/h	220	398	337	236	280	237	238	3393	0	106	2129	1075
V/C Ratio(X)	0.94	0.01	0.39	0.17	0.33	0.90	0.90	1.06	0.00	0.80	0.67	0.69
Avail Cap(c_a), veh/h	220	449	380	270	330	279	331	3393	0	107	2129	1075
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.0	46.5	50.6	56.1	57.1	62.7	36.4	25.2	0.0	41.8	18.2	18.5
Incr Delay (d2), s/veh	44.1	0.0	0.7	0.3	0.7	26.8	20.2	33.9	0.0	33.6	1.7	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.1	4.3	1.4	3.3	9.8	9.3	46.6	0.0	2.9	15.7	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.0	46.5	51.3	56.4	57.8	89.4	56.6	59.1	0.0	75.5	19.9	22.1
LnGrp LOS	F	D	D	E	E	F	E	F	A	E	B	C
Approach Vol, veh/h	339			347			3805			2260		
Approach Delay, s/veh	85.3			77.0			58.9			22.7		
Approach LOS	F			E			E			C		
Timer - Assigned Phs	1	2	4		5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	104.2	36.5		15.2	98.3	9.5	27.0				
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	95.5	36.0		18.6	81.9	5.0	26.5				
Max Q Clear Time (g_c+l1), s	5.0	101.7	12.6		10.4	44.4	7.0	21.8				
Green Ext Time (p_c), s	0.0	0.0	0.4		0.4	23.0	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay	49.1											
HCM 6th LOS	D											

# Timings

## 1: Airport Blvd & Alameda Dr

2040 Total PM.syn

11/03/2020

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	119	15	85	30	14	97	42	1936	324	3529
Future Volume (vph)	119	15	85	30	14	97	42	1936	324	3529
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4			8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	8	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	9.5	32.0	32.0	22.5	22.5	22.5	9.5	66.8	31.2	88.5
Total Split (%)	7.3%	24.6%	24.6%	17.3%	17.3%	17.3%	7.3%	51.4%	24.0%	68.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	18.1	18.1	18.1	8.6	8.6	8.6	78.7	72.3	102.9	94.0
Actuated g/C Ratio	0.14	0.14	0.14	0.07	0.07	0.07	0.61	0.56	0.79	0.72
v/c Ratio	0.81	0.06	0.32	0.36	0.12	0.47	0.32	0.74	0.85	1.07
Control Delay	87.0	47.7	13.5	68.1	57.8	12.9	21.3	25.3	56.7	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	47.7	13.5	68.1	57.8	12.9	21.3	25.3	56.7	56.7
LOS	F	D	B	E	E	B	C	C	E	E
Approach Delay		55.8			29.2			25.2		56.7
Approach LOS		E			C			C		E

### Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 46.1

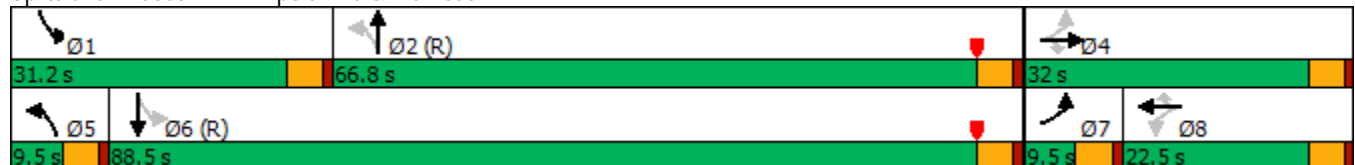
Intersection LOS: D

Intersection Capacity Utilization 98.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Airport Blvd & Alameda Dr



























# HCM 6th Signalized Intersection Summary

2040 Total PM.syn

## 1: Airport Blvd & Alameda Dr























11/03/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	15	85	30	14	97	42	1936	1	324	3529	73
Future Volume (veh/h)	119	15	85	30	14	97	42	1936	1	324	3529	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	16	49	33	15	105	46	2104	1	352	3836	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	295	249	168	158	134	111	3110	1	382	3643	75
Arrive On Green	0.04	0.16	0.16	0.08	0.08	0.08	0.03	0.59	0.59	0.15	0.71	0.71
Sat Flow, veh/h	1781	1870	1582	1332	1870	1579	1781	5271	3	1781	5150	105
Grp Volume(v), veh/h	129	16	49	33	15	105	46	1359	746	352	2527	1388
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1332	1870	1579	1781	1702	1870	1781	1702	1851
Q Serve(g_s), s	5.0	0.9	3.5	3.0	1.0	8.5	1.3	35.4	35.4	16.6	92.0	92.0
Cycle Q Clear(g_c), s	5.0	0.9	3.5	3.0	1.0	8.5	1.3	35.4	35.4	16.6	92.0	92.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.06
Lane Grp Cap(c), veh/h	222	295	249	168	158	134	111	2009	1103	382	2408	1310
V/C Ratio(X)	0.58	0.05	0.20	0.20	0.09	0.79	0.41	0.68	0.68	0.92	1.05	1.06
Avail Cap(c_a), veh/h	222	396	335	240	259	219	124	2009	1103	483	2408	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	46.5	47.6	55.9	54.9	58.3	32.2	18.2	18.2	37.2	19.0	19.0
Incr Delay (d2), s/veh	3.8	0.1	0.4	0.6	0.3	9.7	2.5	1.8	3.3	20.4	32.9	42.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.5	1.4	1.1	0.5	3.8	0.9	13.5	15.3	13.2	40.8	47.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	46.6	48.0	56.4	55.2	68.1	34.7	20.0	21.5	57.6	52.0	61.5
LnGrp LOS	E	D	D	E	E	E	C	C	C	E	F	F
Approach Vol, veh/h	194				153				2151		4267	
Approach Delay, s/veh	54.1				64.3				20.9		55.5	
Approach LOS	D				E				C		E	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.8	81.2		25.0	8.6	96.5	9.5	15.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	26.7	62.3		27.5	5.0	84.0	5.0	18.0				
Max Q Clear Time (g_c+l1), s	18.6	37.4		5.5	3.3	94.0	7.0	10.5				
Green Ext Time (p_c), s	0.7	16.7		0.2	0.0	0.0	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			44.7									
HCM 6th LOS			D									



# Timings 2: Airport Blvd & Alameda Pkwy

2020 Existing AM.syn  
11/11/2020









											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	247	316	133	25	973	636	324	1391	353	750	173
Future Volume (vph)	247	316	133	25	973	636	324	1391	353	750	173
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	4	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	15.5	47.4	47.4	11.5	43.4	20.8	27.0	50.3	20.8	44.1	44.1
Total Split (%)	11.9%	36.5%	36.5%	8.8%	33.4%	16.0%	20.8%	38.7%	16.0%	33.9%	33.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	11.0	47.5	47.5	45.4	38.9	55.2	19.7	45.8	16.3	42.4	42.4
Actuated g/C Ratio	0.08	0.37	0.37	0.35	0.30	0.42	0.15	0.35	0.13	0.33	0.33
v/c Ratio	0.88	0.23	0.31	0.09	0.68	0.99	0.77	0.98	0.92	0.52	0.35
Control Delay	88.2	29.9	5.2	23.4	42.8	60.9	63.1	58.3	84.1	37.4	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.2	29.9	5.2	23.4	42.8	60.9	63.1	58.3	84.1	37.4	14.0
LOS	F	C	A	C	D	E	E	E	F	D	B
Approach Delay		40.4			49.7			59.2		46.6	
Approach LOS		D			D			E		D	

## Intersection Summary

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 39.6 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay: 50.9  
 Intersection Capacity Utilization 84.8%  
 Analysis Period (min) 15

Intersection LOS: D  
 ICU Level of Service E

## Splits and Phases: 2: Airport Blvd & Alameda Pkwy























 Ø1	 Ø2 (R)	 Ø3	 Ø4
20.8 s	50.3 s	11.5 s	47.4 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
27 s	44.1 s	15.5 s	43.4 s

# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2020 Existing AM.syn























11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	247	316	133	25	973	636	324	1391	8	353	750	173
Future Volume (veh/h)	247	316	133	25	973	636	324	1391	8	353	750	173
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	427	218	32	1035	374	400	1739	12	397	862	211
Peak Hour Factor	0.97	0.74	0.61	0.78	0.94	0.90	0.81	0.80	0.67	0.89	0.87	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	292	1603	496	299	1306	603	464	2071	14	433	1975	611
Arrive On Green	0.08	0.31	0.31	0.03	0.26	0.26	0.13	0.40	0.40	0.13	0.39	0.39
Sat Flow, veh/h	3456	5106	1581	1781	5106	1579	3456	5232	36	3456	5106	1579
Grp Volume(v), veh/h	255	427	218	32	1035	374	400	1131	620	397	862	211
Grp Sat Flow(s),veh/h/ln	1728	1702	1581	1781	1702	1579	1728	1702	1864	1728	1702	1579
Q Serve(g_s), s	9.5	8.1	14.3	1.7	24.6	25.0	14.7	39.1	39.1	14.8	16.2	12.3
Cycle Q Clear(g_c), s	9.5	8.1	14.3	1.7	24.6	25.0	14.7	39.1	39.1	14.8	16.2	12.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	292	1603	496	299	1306	603	464	1347	738	433	1975	611
V/C Ratio(X)	0.87	0.27	0.44	0.11	0.79	0.62	0.86	0.84	0.84	0.92	0.44	0.35
Avail Cap(c_a), veh/h	292	1685	522	348	1528	671	598	1347	738	433	1975	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	58.8	33.4	35.5	34.1	45.2	32.6	55.1	35.5	35.5	56.2	29.4	28.2
Incr Delay (d2), s/veh	23.7	0.1	0.6	0.2	2.5	1.5	10.0	6.4	11.1	19.3	0.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	3.3	5.5	0.7	10.5	9.6	7.0	16.9	19.4	7.5	6.6	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.6	33.5	36.1	34.3	47.7	34.1	65.1	42.0	46.6	75.5	29.9	29.4
LnGrp LOS	F	C	D	C	D	C	E	D	D	E	C	C
Approach Vol, veh/h	900			1441			2151			1470		
Approach Delay, s/veh	48.0			43.9			47.6			42.2		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.8	56.0	7.9	45.3	22.0	54.8	15.5	37.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.3	45.8	7.0	42.9	22.5	39.6	11.0	38.9				
Max Q Clear Time (g_c+l1), s	16.8	41.1	3.7	16.3	16.7	18.2	11.5	27.0				
Green Ext Time (p_c), s	0.0	3.7	0.0	3.5	0.7	6.6	0.0	6.3				
Intersection Summary												
HCM 6th Ctrl Delay	45.4											
HCM 6th LOS	D											
Notes												

Timings  
2: Airport Blvd & Alameda Pkwy

2020 Existing PM.syn

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	202	1017	259	32	362	311	206	771	764	1375	238
Future Volume (vph)	202	1017	259	32	362	311	206	771	764	1375	238
Turn Type	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	4	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	24.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	20.6	45.0	45.0	11.6	36.0	51.1	22.0	42.3	51.1	71.4	71.4
Total Split (%)	13.7%	30.0%	30.0%	7.7%	24.0%	34.1%	14.7%	28.2%	34.1%	47.6%	47.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	14.4	38.9	38.9	36.0	29.2	70.6	15.5	47.0	41.3	72.8	72.8
Actuated g/C Ratio	0.10	0.26	0.26	0.24	0.19	0.47	0.10	0.31	0.28	0.49	0.49
v/c Ratio	0.69	0.81	0.52	0.31	0.44	0.46	0.71	0.57	0.86	0.61	0.28
Control Delay	76.8	57.6	10.9	40.3	54.2	19.5	76.2	46.6	61.3	30.7	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	57.6	10.9	40.3	54.2	19.5	76.2	46.6	61.3	30.7	3.6
LOS	E	E	B	D	D	B	E	D	E	C	A
Approach Delay		51.3			38.6			53.0		37.8	
Approach LOS		D			D			D		D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 34.9 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 44.3

Intersection LOS: D

Intersection Capacity Utilization 75.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy


























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2020 Existing PM.syn























11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	202	1017	259	32	362	311	206	771	5	764	1375	238
Future Volume (veh/h)	202	1017	259	32	362	311	206	771	5	764	1375	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	1071	312	40	436	185	251	907	8	813	1511	248
Peak Hour Factor	0.89	0.95	0.83	0.80	0.83	0.87	0.82	0.85	0.63	0.94	0.91	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	1258	388	114	988	713	301	1821	16	891	2652	821
Arrive On Green	0.08	0.25	0.25	0.03	0.19	0.19	0.09	0.35	0.35	0.26	0.52	0.52
Sat Flow, veh/h	3456	5106	1575	1781	5106	1573	3456	5220	46	3456	5106	1580
Grp Volume(v), veh/h	227	1071	312	40	436	185	251	591	324	813	1511	248
Grp Sat Flow(s),veh/h/ln	1728	1702	1575	1781	1702	1573	1728	1702	1862	1728	1702	1580
Q Serve(g_s), s	9.7	30.0	27.9	2.7	11.3	11.0	10.7	20.5	20.6	34.3	30.3	13.4
Cycle Q Clear(g_c), s	9.7	30.0	27.9	2.7	11.3	11.0	10.7	20.5	20.6	34.3	30.3	13.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	276	1258	388	114	988	713	301	1188	650	891	2652	821
V/C Ratio(X)	0.82	0.85	0.80	0.35	0.44	0.26	0.83	0.50	0.50	0.91	0.57	0.30
Avail Cap(c_a), veh/h	371	1379	425	150	1072	739	403	1188	650	1074	2652	821
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	68.0	53.9	53.1	48.4	53.3	25.6	67.4	38.5	38.5	54.0	24.6	20.5
Incr Delay (d2), s/veh	10.4	5.0	9.9	1.8	0.3	0.2	10.7	1.5	2.7	7.6	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	13.3	12.0	1.2	4.8	4.1	5.1	8.8	9.8	15.6	12.1	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.4	58.9	63.0	50.2	53.6	25.8	78.1	40.0	41.2	61.6	25.2	21.2
LnGrp LOS	E	E	E	D	D	C	E	D	D	E	C	C
Approach Vol, veh/h	1610			661			1166			2572		
Approach Delay, s/veh	62.4			45.6			48.5			36.3		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	43.2	56.8	8.6	41.5	17.6	82.4	16.5	33.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	46.6	37.8	7.1	40.5	17.5	66.9	16.1	31.5				
Max Q Clear Time (g_c+l1), s	36.3	22.6	4.7	32.0	12.7	32.3	11.7	13.3				
Green Ext Time (p_c), s	2.4	5.0	0.0	5.0	0.3	15.3	0.3	3.2				
Intersection Summary												
HCM 6th Ctrl Delay	46.7											
HCM 6th LOS	D											
Notes												

# Timings 2: Airport Blvd & Alameda Pkwy

2022 Background AM.syn

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	257	347	156	26	1034	662	359	1450	390	804	180
Future Volume (vph)	257	347	156	26	1034	662	359	1450	390	804	180
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	15.3	45.9	28.9	11.5	42.1	21.6	28.9	51.0	21.6	43.7	43.7
Total Split (%)	11.8%	35.3%	22.2%	8.8%	32.4%	16.6%	22.2%	39.2%	16.6%	33.6%	33.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	10.8	46.0	67.5	44.1	37.6	54.7	21.4	46.5	17.1	42.2	42.2
Actuated g/C Ratio	0.08	0.35	0.52	0.34	0.29	0.42	0.16	0.36	0.13	0.32	0.32
v/c Ratio	0.93	0.26	0.29	0.10	0.75	1.04	0.78	1.00	0.97	0.56	0.37
Control Delay	97.0	31.3	7.3	24.4	45.7	74.1	62.2	63.7	91.8	38.3	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.0	31.3	7.3	24.4	45.7	74.1	62.2	63.7	91.8	38.3	15.4
LOS	F	C	A	C	D	E	E	E	F	D	B
Approach Delay		42.7			56.5			63.4		49.9	
Approach LOS		D			E			E		D	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 40.2 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 55.3









Intersection LOS: E

Intersection Capacity Utilization 87.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy



































			
Ø1	Ø2 (R)	Ø3	Ø4
21.6 s	51 s	11.5 s	45.9 s
			
Ø5	Ø6 (R)	Ø7	Ø8
28.9 s	43.7 s	15.3 s	42.1 s

# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2022 Background AM.syn


































11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  		 	  		 	  	
Traffic Volume (veh/h)	257	347	156	26	1034	662	359	1450	8	390	804	180
Future Volume (veh/h)	257	347	156	26	1034	662	359	1450	8	390	804	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	265	469	133	33	1100	403	443	1812	12	438	924	220
Peak Hour Factor	0.97	0.74	0.61	0.78	0.94	0.90	0.81	0.80	0.67	0.89	0.87	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	1633	739	308	1345	625	509	2007	13	455	1877	580
Arrive On Green	0.08	0.32	0.32	0.03	0.26	0.26	0.15	0.38	0.38	0.13	0.37	0.37
Sat Flow, veh/h	3456	5106	1581	1781	5106	1580	3456	5233	35	3456	5106	1579
Grp Volume(v), veh/h	265	469	133	33	1100	403	443	1179	645	438	924	220
Grp Sat Flow(s),veh/h/ln	1728	1702	1581	1781	1702	1580	1728	1702	1864	1728	1702	1579
Q Serve(g_s), s	9.9	8.9	6.4	1.7	26.3	26.9	16.3	42.4	42.5	16.4	18.2	13.3
Cycle Q Clear(g_c), s	9.9	8.9	6.4	1.7	26.3	26.9	16.3	42.4	42.5	16.4	18.2	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	287	1633	739	308	1345	625	509	1305	715	455	1877	580
V/C Ratio(X)	0.92	0.29	0.18	0.11	0.82	0.65	0.87	0.90	0.90	0.96	0.49	0.38
Avail Cap(c_a), veh/h	287	1633	739	356	1477	665	649	1305	715	455	1877	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.66	0.66
Uniform Delay (d), s/veh	59.2	33.1	20.1	33.4	44.9	31.9	54.2	37.8	37.8	56.1	31.7	30.2
Incr Delay (d2), s/veh	33.6	0.1	0.1	0.2	3.5	2.0	10.1	10.4	16.9	25.5	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	3.7	2.3	0.8	11.3	10.4	7.7	19.0	22.0	8.6	7.4	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.8	33.2	20.3	33.5	48.4	33.9	64.3	48.1	54.7	81.6	32.4	31.5
LnGrp LOS	F	C	C	C	D	C	E	D	D	F	C	C
Approach Vol, veh/h	867					1536		2267		1582		
Approach Delay, s/veh	49.4					44.3		53.2		45.9		
Approach LOS	D					D		D		D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.6	54.4	8.0	46.1	23.7	52.3	15.3	38.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	17.1	46.5	7.0	41.4	24.4	39.2	10.8	37.6				
Max Q Clear Time (g_c+l1), s	18.4	44.5	3.7	10.9	18.3	20.2	11.9	28.9				
Green Ext Time (p_c), s	0.0	1.7	0.0	3.6	0.9	6.8	0.0	5.3				
Intersection Summary												
HCM 6th Ctrl Delay	48.6											
HCM 6th LOS	D											
Notes												

Timings  
2: Airport Blvd & Alameda Pkwy

2022 Background PM.syn

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	 	  			  		 	  	 	  	
Traffic Volume (vph)	210	1076	287	33	418	324	255	804	807	1446	248
Future Volume (vph)	210	1076	287	33	418	324	255	804	807	1446	248
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	21.2	46.0	25.5	11.5	36.3	52.0	25.5	40.5	52.0	67.0	67.0
Total Split (%)	14.1%	30.7%	17.0%	7.7%	24.2%	34.7%	17.0%	27.0%	34.7%	44.7%	44.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	14.9	39.8	58.1	36.3	29.6	72.8	18.3	44.3	43.3	69.3	69.3
Actuated g/C Ratio	0.10	0.27	0.39	0.24	0.20	0.49	0.12	0.30	0.29	0.46	0.46
v/c Ratio	0.69	0.84	0.53	0.33	0.50	0.47	0.74	0.64	0.87	0.68	0.31
Control Delay	76.3	58.6	27.2	40.3	55.1	18.9	74.8	49.9	60.7	34.7	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	58.6	27.2	40.3	55.1	18.9	74.8	49.9	60.7	34.7	4.9
LOS	E	E	C	D	E	B	E	D	E	C	A
Approach Delay		54.7			39.7			56.0		40.1	
Approach LOS		D			D			E		D	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 37.9 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 46.9

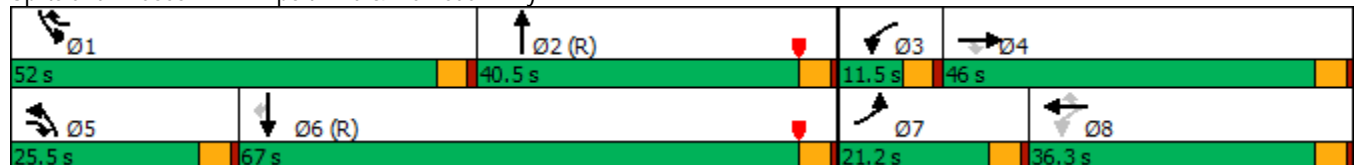
Intersection LOS: D

Intersection Capacity Utilization 78.6%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy



























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2022 Background PM.syn

11/11/2020























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	1076	287	33	418	324	255	804	5	807	1446	248
Future Volume (veh/h)	210	1076	287	33	418	324	255	804	5	807	1446	248
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	236	1133	177	41	504	188	311	946	8	859	1589	258
Peak Hour Factor	0.89	0.95	0.83	0.80	0.83	0.87	0.82	0.85	0.63	0.94	0.91	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	1306	570	115	1023	744	364	1703	14	936	2510	777
Arrive On Green	0.08	0.26	0.26	0.03	0.20	0.20	0.11	0.33	0.33	0.27	0.49	0.49
Sat Flow, veh/h	3456	5106	1576	1781	5106	1573	3456	5222	44	3456	5106	1580
Grp Volume(v), veh/h	236	1133	177	41	504	188	311	617	337	859	1589	258
Grp Sat Flow(s),veh/h/ln	1728	1702	1576	1781	1702	1573	1728	1702	1862	1728	1702	1580
Q Serve(g_s), s	10.1	31.8	12.1	2.7	13.1	10.8	13.3	22.4	22.4	36.2	34.5	14.9
Cycle Q Clear(g_c), s	10.1	31.8	12.1	2.7	13.1	10.8	13.3	22.4	22.4	36.2	34.5	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	286	1306	570	115	1023	744	364	1110	607	936	2510	777
V/C Ratio(X)	0.83	0.87	0.31	0.36	0.49	0.25	0.85	0.56	0.56	0.92	0.63	0.33
Avail Cap(c_a), veh/h	385	1413	603	149	1082	763	484	1110	607	1094	2510	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	67.7	53.4	34.5	47.8	53.2	23.8	66.0	41.6	41.6	53.1	28.1	23.2
Incr Delay (d2), s/veh	10.4	5.7	0.3	1.9	0.4	0.2	10.9	2.0	3.6	7.7	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	14.1	4.7	1.3	5.6	4.0	6.3	9.6	10.8	16.4	13.9	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	59.1	34.8	49.7	53.6	24.0	76.9	43.6	45.2	60.8	28.9	23.9
LnGrp LOS	E	E	C	D	D	C	E	D	D	E	C	C
Approach Vol, veh/h	1546			733			1265			2706		
Approach Delay, s/veh	59.2			45.8			52.2			38.6		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	45.1	53.4	8.6	42.9	20.3	78.2	16.9	34.6				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	47.5	36.0	7.0	41.5	21.0	62.5	16.7	31.8				
Max Q Clear Time (g_c+l1), s	38.2	24.4	4.7	33.8	15.3	36.5	12.1	15.1				
Green Ext Time (p_c), s	2.4	4.5	0.0	4.5	0.5	14.2	0.3	3.5				
Intersection Summary												
HCM 6th Ctrl Delay	47.3											
HCM 6th LOS	D											
Notes												



Timings  
2: Airport Blvd & Alameda Pkwy

2022 Total AM.syn

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	374	359	156	118	1171	662	359	1534	390	827	196
Future Volume (vph)	374	359	156	118	1171	662	359	1534	390	827	196
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	20.0	44.2	28.8	14.0	38.2	20.8	28.8	51.0	20.8	43.0	43.0
Total Split (%)	15.4%	34.0%	22.2%	10.8%	29.4%	16.0%	22.2%	39.2%	16.0%	33.1%	33.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	15.5	39.9	61.3	43.0	33.7	50.0	21.4	46.5	16.3	41.4	41.4
Actuated g/C Ratio	0.12	0.31	0.47	0.33	0.26	0.38	0.16	0.36	0.13	0.32	0.32
v/c Ratio	0.94	0.31	0.33	0.43	0.95	1.08	0.78	1.07	1.02	0.59	0.38
Control Delay	89.1	35.3	12.5	29.3	53.4	74.4	62.3	83.1	103.8	39.4	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.1	35.3	12.5	29.3	53.4	74.4	62.3	83.1	103.8	39.4	9.4
LOS	F	D	B	C	D	E	E	F	F	D	A
Approach Delay		48.5			58.9			79.2		52.3	
Approach LOS		D			E			E		D	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 40.2 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 62.5

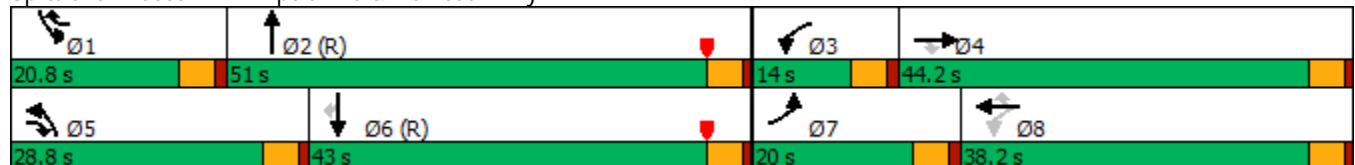
Intersection LOS: E

Intersection Capacity Utilization 93.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy



























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy


2022 Total AM.syn

11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	374	359	156	118	1171	662	359	1534	18	390	827	196
Future Volume (veh/h)	374	359	156	118	1171	662	359	1534	18	390	827	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	485	133	151	1246	347	443	1918	27	438	951	239
Peak Hour Factor	0.97	0.74	0.61	0.78	0.94	0.90	0.81	0.80	0.67	0.89	0.87	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	1547	712	370	1311	604	509	1869	26	433	1727	534
Arrive On Green	0.12	0.30	0.30	0.15	0.51	0.51	0.15	0.36	0.36	0.13	0.34	0.34
Sat Flow, veh/h	3456	5106	1580	1781	5106	1579	3456	5188	73	3456	5106	1578
Grp Volume(v), veh/h	386	485	133	151	1246	347	443	1258	687	438	951	239
Grp Sat Flow(s),veh/h/ln	1728	1702	1580	1781	1702	1579	1728	1702	1857	1728	1702	1578
Q Serve(g_s), s	14.4	9.5	6.6	8.2	30.1	20.6	16.3	46.8	46.8	16.3	19.7	15.4
Cycle Q Clear(g_c), s	14.4	9.5	6.6	8.2	30.1	20.6	16.3	46.8	46.8	16.3	19.7	15.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	412	1547	712	370	1311	604	509	1226	669	433	1727	534
V/C Ratio(X)	0.94	0.31	0.19	0.41	0.95	0.57	0.87	1.03	1.03	1.01	0.55	0.45
Avail Cap(c_a), veh/h	412	1559	716	370	1324	608	646	1226	669	433	1727	534
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	34.9	21.5	29.5	30.8	20.4	54.2	41.6	41.6	56.8	35.0	33.5
Incr Delay (d2), s/veh	28.9	0.1	0.1	0.7	14.5	1.3	10.2	32.6	41.8	46.0	1.3	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	3.9	2.4	3.2	10.6	5.3	7.7	24.5	28.4	9.8	8.2	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.7	35.0	21.6	30.2	45.3	21.7	64.4	74.2	83.4	102.8	36.3	36.3
LnGrp LOS	F	D	C	C	D	C	E	F	F	F	D	D
Approach Vol, veh/h		1004			1744			2388			1628	
Approach Delay, s/veh		52.7			39.3			75.0			54.2	
Approach LOS		D			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.8	51.3	14.0	43.9	23.7	48.5	20.0	37.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.3	46.5	9.5	39.7	24.3	38.5	15.5	33.7				
Max Q Clear Time (g_c+l1), s	18.3	48.8	10.2	11.5	18.3	21.7	16.4	32.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.7	0.9	6.6	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			57.5									
HCM 6th LOS			E									
Notes												
User approved changes to right turn type.												

# Timings 2: Airport Blvd & Alameda Pkwy

2022 Total PM.syn  
11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↖	↑↑↑	↗	↔↔	↑↑↑	↔↔	↑↑↑	↗
Traffic Volume (vph)	294	1117	287	99	515	324	255	866	807	1460	258
Future Volume (vph)	294	1117	287	99	515	324	255	866	807	1460	258
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2	1	6	
Permitted Phases			4	8		8					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5	11.5	11.5	24.5	11.5	24.5	24.5
Total Split (s)	22.7	44.0	25.4	12.0	33.3	48.0	25.4	46.0	48.0	68.6	68.6
Total Split (%)	15.1%	29.3%	16.9%	8.0%	22.2%	32.0%	16.9%	30.7%	32.0%	45.7%	45.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effect Green (s)	17.5	38.8	57.1	36.3	28.8	70.4	18.3	44.1	41.6	67.4	67.4
Actuated g/C Ratio	0.12	0.26	0.38	0.24	0.19	0.47	0.12	0.29	0.28	0.45	0.45
v/c Ratio	0.82	0.89	0.54	0.90	0.63	0.48	0.75	0.73	0.90	0.70	0.32
Control Delay	82.0	63.1	28.1	118.4	89.7	12.6	74.8	51.3	65.6	35.8	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.0	63.1	28.1	118.4	89.7	12.6	74.8	51.3	65.6	35.8	4.4
LOS	F	E	C	F	F	B	E	D	E	D	A
Approach Delay		60.0			67.2			56.5		42.1	
Approach LOS		E			E			E		D	

## Intersection Summary

Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 36.7 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 53.5  
 Intersection Capacity Utilization 82.7%  
 Analysis Period (min) 15

Intersection LOS: D  
 ICU Level of Service E

## Splits and Phases: 2: Airport Blvd & Alameda Pkwy


























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2022 Total PM.syn


11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	1117	287	99	515	324	255	866	38	807	1460	258
Future Volume (veh/h)	294	1117	287	99	515	324	255	866	38	807	1460	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	330	1176	177	124	620	177	311	1019	60	859	1604	269
Peak Hour Factor	0.89	0.95	0.83	0.80	0.83	0.87	0.82	0.85	0.63	0.94	0.91	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	1300	569	150	999	732	364	1520	89	923	2400	743
Arrive On Green	0.11	0.25	0.25	0.02	0.06	0.06	0.11	0.31	0.31	0.27	0.47	0.47
Sat Flow, veh/h	3456	5106	1579	1781	5106	1578	3456	4931	290	3456	5106	1580
Grp Volume(v), veh/h	330	1176	177	124	620	177	311	703	376	859	1604	269
Grp Sat Flow(s),veh/h/ln	1728	1702	1579	1781	1702	1578	1728	1702	1817	1728	1702	1580
Q Serve(g_s), s	14.1	33.5	12.1	7.5	17.7	10.9	13.3	27.0	27.1	36.4	36.4	16.3
Cycle Q Clear(g_c), s	14.1	33.5	12.1	7.5	17.7	10.9	13.3	27.0	27.1	36.4	36.4	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	377	1300	569	150	999	732	364	1050	560	923	2400	743
V/C Ratio(X)	0.88	0.90	0.31	0.83	0.62	0.24	0.85	0.67	0.67	0.93	0.67	0.36
Avail Cap(c_a), veh/h	419	1345	583	150	999	732	481	1050	560	1002	2400	743
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.8	54.1	34.6	52.5	64.7	28.6	66.0	45.2	45.2	53.6	30.7	25.4
Incr Delay (d2), s/veh	17.1	8.7	0.3	30.3	1.2	0.2	11.1	3.4	6.3	14.1	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	15.2	4.7	2.3	8.3	4.5	6.4	11.8	13.0	17.3	14.9	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.9	62.9	34.9	82.8	65.9	28.8	77.0	48.6	51.5	67.7	32.2	26.8
LnGrp LOS	F	E	C	F	E	C	E	D	D	E	C	C
Approach Vol, veh/h	1683			921			1390			2732		
Approach Delay, s/veh	63.9			61.1			55.8			42.8		
Approach LOS	E			E			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.5	50.8	12.0	42.7	20.3	75.0	20.9	33.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	43.5	41.5	7.5	39.5	20.9	64.1	18.2	28.8				
Max Q Clear Time (g_c+l1), s	38.4	29.1	9.5	35.5	15.3	38.4	16.1	19.7				
Green Ext Time (p_c), s	1.7	5.4	0.0	2.7	0.5	14.3	0.3	3.1				
Intersection Summary												
HCM 6th Ctrl Delay	53.3											
HCM 6th LOS	D											
Notes												

# Timings 2: Airport Blvd & Alameda Pkwy

2022 Total AM Improved.syn

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	374	359	156	118	1171	662	359	1534	390	827	196
Future Volume (vph)	374	359	156	118	1171	662	359	1534	390	827	196
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4	8		Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5		11.5	24.5	11.5	24.5	11.5
Total Split (s)	18.0	42.2	33.0	13.0	37.2		33.0	54.0	20.8	41.8	18.0
Total Split (%)	13.8%	32.5%	25.4%	10.0%	28.6%		25.4%	41.5%	16.0%	32.2%	13.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	13.5	37.7	60.0	41.2	32.7	130.0	22.3	49.5	16.3	43.5	57.0
Actuated g/C Ratio	0.10	0.29	0.46	0.32	0.25	1.00	0.17	0.38	0.13	0.33	0.44
v/c Ratio	1.08	0.33	0.33	0.46	0.97	0.47	0.75	1.01	1.02	0.56	0.33
Control Delay	125.7	37.0	13.8	32.6	59.8	0.8	59.4	62.0	103.8	37.6	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.7	37.0	13.8	32.6	59.8	0.8	59.4	62.0	103.8	37.6	15.1
LOS	F	D	B	C	E	A	E	E	F	D	B
Approach Delay		62.1			37.5			61.5		52.1	
Approach LOS		E			D			E		D	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 40.2 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 52.5

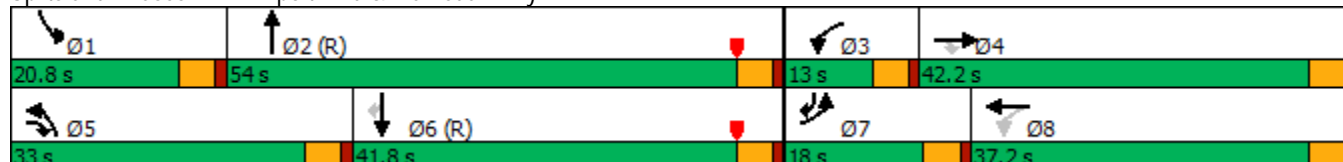
Intersection LOS: D

Intersection Capacity Utilization 89.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy


























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2022 Total AM Improved.syn

11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	374	359	156	118	1171	662	359	1534	18	390	827	196
Future Volume (veh/h)	374	359	156	118	1171	662	359	1534	18	390	827	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	485	133	151	1246	0	443	1918	27	438	951	239
Peak Hour Factor	0.97	0.74	0.61	0.78	0.94	0.90	0.81	0.80	0.67	0.89	0.87	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1481	695	345	1284		517	1975	28	433	1821	728
Arrive On Green	0.10	0.29	0.29	0.13	0.50	0.00	0.15	0.38	0.38	0.13	0.36	0.36
Sat Flow, veh/h	3456	5106	1580	1781	5106	1585	3456	5188	73	3456	5106	1578
Grp Volume(v), veh/h	386	485	133	151	1246	0	443	1258	687	438	951	239
Grp Sat Flow(s),veh/h/ln	1728	1702	1580	1781	1702	1585	1728	1702	1857	1728	1702	1578
Q Serve(g_s), s	13.5	9.7	6.7	8.4	30.8	0.0	16.3	47.2	47.3	16.3	19.1	12.5
Cycle Q Clear(g_c), s	13.5	9.7	6.7	8.4	30.8	0.0	16.3	47.2	47.3	16.3	19.1	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	359	1481	695	345	1284		517	1296	707	433	1821	728
V/C Ratio(X)	1.08	0.33	0.19	0.44	0.97		0.86	0.97	0.97	1.01	0.52	0.33
Avail Cap(c_a), veh/h	359	1481	695	345	1284		758	1296	707	433	1821	728
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	36.2	22.3	31.0	31.8	0.0	53.9	39.5	39.6	56.8	33.1	22.3
Incr Delay (d2), s/veh	69.1	0.1	0.1	0.9	18.3	0.0	6.6	18.9	27.5	46.0	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	4.0	2.5	3.3	11.3	0.0	7.4	22.4	26.1	9.8	7.9	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	127.4	36.3	22.4	31.9	50.2	0.0	60.6	58.4	67.1	102.8	34.1	23.5
LnGrp LOS	F	D	C	C	D		E	E	E	F	C	C
Approach Vol, veh/h	1004			1397			2388			1628		
Approach Delay, s/veh	69.5			48.2			61.3			51.1		
Approach LOS	E			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.8	54.0	13.0	42.2	23.9	50.9	18.0	37.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	16.3	49.5	8.5	37.7	28.5	37.3	13.5	32.7				
Max Q Clear Time (g_c+l1), s	18.3	49.3	10.4	11.7	18.3	21.1	15.5	32.8				
Green Ext Time (p_c), s	0.0	0.2	0.0	3.6	1.2	6.5	0.0	0.0				

### Intersection Summary

HCM 6th Ctrl Delay 57.1

HCM 6th LOS E

### Notes

User approved changes to right turn type.























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

# Timings

2022 Total PM Improved.syn

## 2: Airport Blvd & Alameda Pkwy

11/11/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	294	1117	287	99	515	324	255	866	807	1460	258
Future Volume (vph)	294	1117	287	99	515	324	255	866	807	1460	258
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4	8		Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5		11.5	24.5	11.5	24.5	11.5
Total Split (s)	25.8	44.0	25.2	16.0	34.2		25.2	42.0	48.0	64.8	25.8
Total Split (%)	17.2%	29.3%	16.8%	10.7%	22.8%		16.8%	28.0%	32.0%	43.2%	17.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	18.9	38.9	57.2	41.8	30.9	150.0	18.2	40.6	41.6	64.0	82.9
Actuated g/C Ratio	0.13	0.26	0.38	0.28	0.21	1.00	0.12	0.27	0.28	0.43	0.55
v/c Ratio	0.76	0.89	0.54	0.70	0.59	0.24	0.75	0.79	0.90	0.74	0.30
Control Delay	75.3	62.9	28.1	81.7	81.5	0.3	75.0	56.0	65.6	39.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	62.9	28.1	81.7	81.5	0.3	75.0	56.0	65.6	39.2	14.3
LOS	E	E	C	F	F	A	E	E	E	D	B
Approach Delay		58.6			54.5			60.3		45.1	
Approach LOS		E			D			E		D	

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 36.7 (24%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 53.1






Intersection LOS: D

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

### Splits and Phases: 2: Airport Blvd & Alameda Pkwy
























			
Ø1	Ø2 (R)	Ø3	Ø4
48 s	42 s	16 s	44 s
			
Ø5	Ø6 (R)	Ø7	Ø8
25.2 s	64.8 s	25.8 s	34.2 s

# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2022 Total PM Improved.syn

11/11/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	1117	287	99	515	324	255	866	38	807	1460	258
Future Volume (veh/h)	294	1117	287	99	515	324	255	866	38	807	1460	258
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	330	1176	177	124	620	0	311	1019	60	859	1604	123
Peak Hour Factor	0.89	0.95	0.83	0.80	0.83	0.87	0.82	0.85	0.63	0.94	0.91	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1300	569	181	1078		364	1435	84	923	2312	891
Arrive On Green	0.11	0.25	0.25	0.09	0.28	0.00	0.11	0.29	0.29	0.27	0.45	0.45
Sat Flow, veh/h	3456	5106	1579	1781	5106	1585	3456	4931	290	3456	5106	1580
Grp Volume(v), veh/h	330	1176	177	124	620	0	311	703	376	859	1604	123
Grp Sat Flow(s),veh/h/ln	1728	1702	1579	1781	1702	1585	1728	1702	1816	1728	1702	1580
Q Serve(g_s), s	14.1	33.5	12.1	8.1	15.6	0.0	13.3	27.7	27.7	36.4	37.6	5.5
Cycle Q Clear(g_c), s	14.1	33.5	12.1	8.1	15.6	0.0	13.3	27.7	27.7	36.4	37.6	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	383	1300	569	181	1078		364	991	529	923	2312	891
V/C Ratio(X)	0.86	0.90	0.31	0.69	0.58		0.86	0.71	0.71	0.93	0.69	0.14
Avail Cap(c_a), veh/h	491	1345	583	197	1078		477	991	529	1002	2312	891
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.6	54.1	34.6	44.0	48.2	0.0	66.0	47.5	47.5	53.6	32.7	15.5
Incr Delay (d2), s/veh	12.0	8.7	0.3	8.6	0.8	0.0	11.3	4.3	7.9	14.1	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	15.2	4.7	3.9	6.4	0.0	6.4	12.2	13.6	17.3	15.6	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.5	62.9	34.9	52.6	48.9	0.0	77.3	51.8	55.4	67.7	34.5	15.8
LnGrp LOS	E	E	C	D	D		E	D	E	E	C	B
Approach Vol, veh/h	1683			744			1390			2586		
Approach Delay, s/veh	62.8			49.5			58.5			44.6		
Approach LOS	E			D			E			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	44.5	48.2	14.6	42.7	20.3	72.4	21.1	36.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	43.5	37.5	11.5	39.5	20.7	60.3	21.3	29.7				
Max Q Clear Time (g_c+l1), s	38.4	29.7	10.1	35.5	15.3	39.6	16.1	17.6				
Green Ext Time (p_c), s	1.7	3.9	0.0	2.7	0.5	12.0	0.5	3.1				

### Intersection Summary

HCM 6th Ctrl Delay 53.0

HCM 6th LOS D

### Notes

User approved changes to right turn type.













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



# Timings 2: Airport Blvd & Alameda Pkwy

2040 Background AM.syn

11/05/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	367	488	216	37	1468	945	503	2070	548	1138	257
Future Volume (vph)	367	488	216	37	1468	945	503	2070	548	1138	257
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4	8		Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	24.5	11.5	11.5	24.5		11.5	24.5	11.5	24.5	11.5
Total Split (s)	16.0	43.5	28.4	11.5	39.0		28.4	53.0	22.0	46.6	16.0
Total Split (%)	12.3%	33.5%	21.8%	8.8%	30.0%		21.8%	40.8%	16.9%	35.8%	12.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	11.5	41.4	64.6	41.1	34.5	130.0	23.2	48.5	17.5	42.8	54.3
Actuated g/C Ratio	0.09	0.32	0.50	0.32	0.27	1.00	0.18	0.37	0.13	0.33	0.42
v/c Ratio	1.32	0.33	0.28	0.13	1.18	0.66	0.89	1.19	1.29	0.74	0.40
Control Delay	209.1	35.0	9.1	29.1	126.2	3.1	69.9	129.6	190.2	42.1	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	209.1	35.0	9.1	29.1	126.2	3.1	69.9	129.6	190.2	42.1	17.7
LOS	F	D	A	C	F	A	E	F	F	D	B
Approach Delay		89.5			77.2			118.0		80.7	
Approach LOS		F			E			F		F	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 40.2 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 92.8

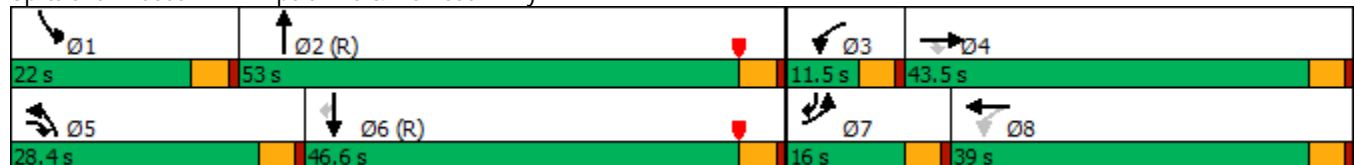
Intersection LOS: F

Intersection Capacity Utilization 109.7%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy


























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2040 Background AM.syn























11/05/2020

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	367	488	216	37	1468	945	503	2070	12	548	1138	257		
Future Volume (veh/h)	367	488	216	37	1468	945	503	2070	12	548	1138	257		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870		
Adj Flow Rate, veh/h	399	530	126	40	1596	0	547	2250	13	596	1237	143		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	306	1657	788	299	1355		601	1954	11	465	1704	667		
Arrive On Green	0.09	0.32	0.32	0.06	0.53	0.00	0.17	0.37	0.37	0.13	0.33	0.33		
Sat Flow, veh/h	3456	5106	1581	1781	5106	1585	3456	5239	30	3456	5106	1578		
Grp Volume(v), veh/h	399	530	126	40	1596	0	547	1462	801	596	1237	143		
Grp Sat Flow(s),veh/h/ln	1728	1702	1581	1781	1702	1585	1728	1702	1865	1728	1702	1578		
Q Serve(g_s), s	11.5	10.2	5.6	2.1	34.5	0.0	20.2	48.5	48.5	17.5	27.7	7.5		
Cycle Q Clear(g_c), s	11.5	10.2	5.6	2.1	34.5	0.0	20.2	48.5	48.5	17.5	27.7	7.5		
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00		
Lane Grp Cap(c), veh/h	306	1657	788	299	1355		601	1270	696	465	1704	667		
V/C Ratio(X)	1.31	0.32	0.16	0.13	1.18		0.91	1.15	1.15	1.28	0.73	0.21		
Avail Cap(c_a), veh/h	306	1657	788	342	1355		635	1270	696	465	1704	667		
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	59.2	33.1	17.8	32.1	30.5	0.0	52.7	40.8	40.8	56.2	38.1	23.9		
Incr Delay (d2), s/veh	159.1	0.1	0.1	0.2	88.0	0.0	16.8	77.4	84.3	142.2	2.7	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.7	4.2	2.0	0.9	20.9	0.0	10.0	33.2	37.7	16.7	11.7	2.9		
Unsig. Movement Delay, s/veh														
LnGrp Delay(d),s/veh	218.3	33.2	17.9	32.3	118.5	0.0	69.5	118.1	125.0	198.5	40.8	24.6		
LnGrp LOS	F	C	B	C	F		E	F	F	F	D	C		
Approach Vol, veh/h	1055				1636		A		2810		1976			
Approach Delay, s/veh	101.4				116.4				110.6		87.2			
Approach LOS	F				F				F		F			
Timer - Assigned Phs	1	2	3	4	5	6	7	8						
Phs Duration (G+Y+Rc), s	22.0	53.0	8.3	46.7	27.1	47.9	16.0	39.0						
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5						
Max Green Setting (Gmax), s	17.5	48.5	7.0	39.0	23.9	42.1	11.5	34.5						
Max Q Clear Time (g_c+l1), s	19.5	50.5	4.1	12.2	22.2	29.7	13.5	36.5						
Green Ext Time (p_c), s	0.0	0.0	0.0	4.0	0.4	6.8	0.0	0.0						
Intersection Summary														
HCM 6th Ctrl Delay	104.4													
HCM 6th LOS	F													
Notes														
User approved changes to right turn type.														
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.														

Timings  
2: Airport Blvd & Alameda Pkwy

2040 Background PM.syn

11/05/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	300	1529	403	48	579	462	347	1148	1147	2058	354
Future Volume (vph)	300	1529	403	48	579	462	347	1148	1147	2058	354
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4	8		Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5		9.5	22.5	9.5	22.5	9.5
Total Split (s)	25.6	48.0	21.2	9.5	31.9		21.2	39.5	53.0	71.3	25.6
Total Split (%)	17.1%	32.0%	14.1%	6.3%	21.3%		14.1%	26.3%	35.3%	47.5%	17.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	18.7	45.4	62.1	34.8	29.8	150.0	16.7	35.0	48.5	66.8	85.5
Actuated g/C Ratio	0.12	0.30	0.41	0.23	0.20	1.00	0.11	0.23	0.32	0.45	0.57
v/c Ratio	0.76	1.08	0.63	0.49	0.62	0.32	0.99	1.06	1.12	0.99	0.42
Control Delay	75.3	96.5	31.1	56.1	68.1	1.9	108.4	97.6	113.6	57.3	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	96.5	31.1	56.1	68.1	1.9	108.4	97.6	113.6	57.3	15.2
LOS	E	F	C	E	E	A	F	F	F	E	B
Approach Delay		81.8			39.5			100.1		71.2	
Approach LOS		F			D			F		E	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 75.1

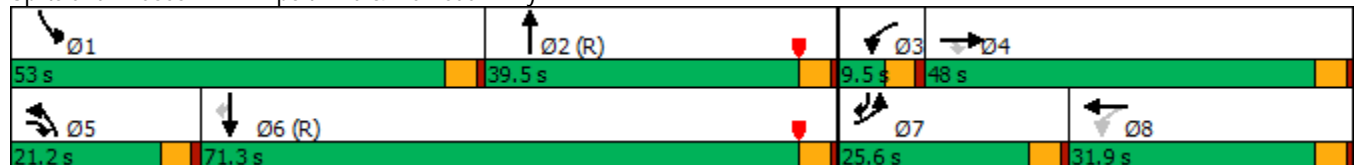
Intersection LOS: E

Intersection Capacity Utilization 103.8%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy

























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2040 Background PM.syn


11/05/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	1529	403	48	579	462	347	1148	7	1147	2058	354
Future Volume (veh/h)	300	1529	403	48	579	462	347	1148	7	1147	2058	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	326	1662	221	52	629	0	377	1248	8	1247	2237	195
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	1481	635	105	1084		385	1229	8	1117	2281	879
Arrive On Green	0.11	0.29	0.29	0.01	0.07	0.00	0.11	0.23	0.23	0.32	0.45	0.45
Sat Flow, veh/h	3456	5106	1580	1781	5106	1585	3456	5235	34	3456	5106	1580
Grp Volume(v), veh/h	326	1662	221	52	629	0	377	812	444	1247	2237	195
Grp Sat Flow(s),veh/h/ln	1728	1702	1580	1781	1702	1585	1728	1702	1864	1728	1702	1580
Q Serve(g_s), s	13.9	43.5	14.6	3.4	17.9	0.0	16.3	35.2	35.2	48.5	64.7	9.4
Cycle Q Clear(g_c), s	13.9	43.5	14.6	3.4	17.9	0.0	16.3	35.2	35.2	48.5	64.7	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	379	1481	635	105	1084		385	799	438	1117	2281	879
V/C Ratio(X)	0.86	1.12	0.35	0.50	0.58		0.98	1.02	1.02	1.12	0.98	0.22
Avail Cap(c_a), veh/h	486	1481	635	107	1084		385	799	438	1117	2281	879
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.7	53.3	31.3	48.6	63.3	0.0	66.5	57.4	57.4	50.8	40.9	16.8
Incr Delay (d2), s/veh	11.9	64.6	0.3	3.6	0.8	0.0	40.4	35.8	47.1	64.7	14.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	27.1	5.6	1.6	8.3	0.0	9.3	18.9	22.0	30.5	29.3	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.6	117.8	31.6	52.1	64.0	0.0	106.9	93.2	104.5	115.5	55.7	17.4
LnGrp LOS	E	F	C	D	E		F	F	F	F	E	B
Approach Vol, veh/h	2209				681		A		1633		3679	
Approach Delay, s/veh	103.3				63.1				99.4		73.9	
Approach LOS	F				E				F		E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.0	39.7	9.3	48.0	21.2	71.5	20.9	36.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	48.5	35.0	5.0	43.5	16.7	66.8	21.1	27.4				
Max Q Clear Time (g_c+l1), s	50.5	37.2	5.4	45.5	18.3	66.7	15.9	19.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.1	0.5	2.4				
Intersection Summary												
HCM 6th Ctrl Delay	86.0											
HCM 6th LOS	F											
Notes												

# Timings 2: Airport Blvd & Alameda Pkwy

2040 Total AM.syn

11/05/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑↑	↗	↖	↑↑↑	↗	↔↔	↑↑↑	↔↔	↑↑↑	↗
Traffic Volume (vph)	484	500	216	129	1605	945	503	2154	548	1161	273
Future Volume (vph)	484	500	216	129	1605	945	503	2154	548	1161	273
Turn Type	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4			Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5		9.5	22.5	9.5	22.5	9.5
Total Split (s)	18.0	34.1	26.3	22.9	39.0		26.3	53.0	20.0	46.7	18.0
Total Split (%)	13.8%	26.2%	20.2%	17.6%	30.0%		20.2%	40.8%	15.4%	35.9%	13.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	13.5	33.0	54.8	15.0	34.5	130.0	21.8	48.5	15.5	42.2	55.7
Actuated g/C Ratio	0.10	0.25	0.42	0.12	0.27	1.00	0.17	0.37	0.12	0.32	0.43
v/c Ratio	1.48	0.42	0.33	0.69	1.29	0.66	0.95	1.25	1.46	0.76	0.40
Control Delay	269.3	42.3	15.7	52.8	183.1	2.3	80.8	152.4	258.8	43.1	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	269.3	42.3	15.7	52.8	183.1	2.3	80.8	152.4	258.8	43.1	14.3
LOS	F	D	B	D	F	A	F	F	F	D	B
Approach Delay		129.1			113.1			139.0		98.8	
Approach LOS		F			F			F		F	

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.48

Intersection Signal Delay: 120.1

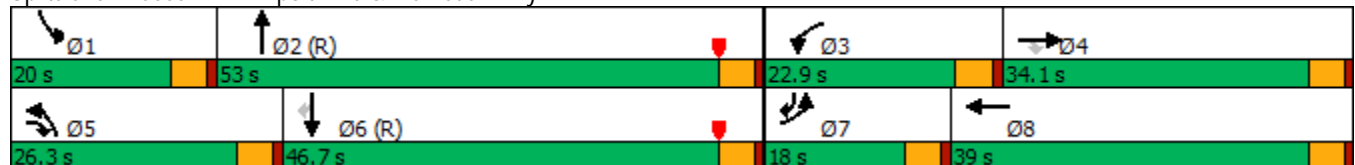
Intersection LOS: F

Intersection Capacity Utilization 117.6%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy


























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2040 Total AM.syn























11/05/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	484	500	216	129	1605	945	503	2154	22	548	1161	273
Future Volume (veh/h)	484	500	216	129	1605	945	503	2154	22	548	1161	273
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	526	543	126	140	1745	0	547	2341	24	596	1262	161
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	359	1404	700	168	1355		579	1944	20	412	1658	677
Arrive On Green	0.10	0.28	0.28	0.03	0.09	0.00	0.17	0.37	0.37	0.12	0.32	0.32
Sat Flow, veh/h	3456	5106	1580	1781	5106	1585	3456	5211	53	3456	5106	1578
Grp Volume(v), veh/h	526	543	126	140	1745	0	547	1528	837	596	1262	161
Grp Sat Flow(s),veh/h/ln	1728	1702	1580	1781	1702	1585	1728	1702	1861	1728	1702	1578
Q Serve(g_s), s	13.5	11.2	6.3	10.2	34.5	0.0	20.3	48.5	48.5	15.5	28.8	8.4
Cycle Q Clear(g_c), s	13.5	11.2	6.3	10.2	34.5	0.0	20.3	48.5	48.5	15.5	28.8	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	359	1404	700	168	1355		579	1270	694	412	1658	677
V/C Ratio(X)	1.47	0.39	0.18	0.83	1.29		0.94	1.20	1.21	1.45	0.76	0.24
Avail Cap(c_a), veh/h	359	1404	700	252	1355		579	1270	694	412	1658	677
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	38.2	21.9	62.0	59.3	0.0	53.5	40.8	40.8	57.3	39.4	23.6
Incr Delay (d2), s/veh	224.3	0.2	0.1	13.8	135.2	0.0	24.3	99.2	105.9	214.2	3.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	4.6	2.3	5.4	32.7	0.0	10.6	37.0	41.8	18.9	12.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	282.6	38.4	22.1	75.8	194.5	0.0	77.8	140.0	146.6	271.5	42.7	24.5
LnGrp LOS	F	D	C	E	F		E	F	F	F	D	C
Approach Vol, veh/h	1195			1885			A	2912			2019	
Approach Delay, s/veh	144.2			185.7				130.2			108.8	
Approach LOS	F			F				F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	53.0	16.7	40.3	26.3	46.7	18.0	39.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	48.5	18.4	29.6	21.8	42.2	13.5	34.5				
Max Q Clear Time (g_c+l1), s	17.5	50.5	12.2	13.2	22.3	30.8	15.5	36.5				
Green Ext Time (p_c), s	0.0	0.0	0.2	3.5	0.0	6.6	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	139.9											
HCM 6th LOS	F											
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

Timings  
2: Airport Blvd & Alameda Pkwy

2040 Total PM.syn

11/05/2020

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	384	1570	403	114	676	462	347	1210	1147	2072	364
Future Volume (vph)	384	1570	403	114	676	462	347	1210	1147	2072	364
Turn Type	Prot	NA	pm+ov	pm+pt	NA	Free	Prot	NA	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	1	6	7
Permitted Phases			4	8		Free					6
Detector Phase	7	4	5	3	8	8 1	5	2	1	6	7
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	9.5	22.5		9.5	22.5	9.5	22.5	9.5
Total Split (s)	26.0	48.0	20.4	10.0	32.0		20.4	42.0	50.0	71.6	26.0
Total Split (%)	17.3%	32.0%	13.6%	6.7%	21.3%		13.6%	28.0%	33.3%	47.7%	17.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	C-Max	None
Act Effect Green (s)	20.9	43.5	59.4	33.6	28.1	150.0	15.9	37.5	45.5	67.1	88.0
Actuated g/C Ratio	0.14	0.29	0.40	0.22	0.19	1.00	0.11	0.25	0.30	0.45	0.59
v/c Ratio	0.87	1.16	0.66	1.09	0.77	0.32	1.04	1.07	1.20	0.99	0.42
Control Delay	82.4	125.9	32.9	151.6	71.1	1.2	120.9	99.5	143.1	57.6	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	125.9	32.9	151.6	71.1	1.2	120.9	99.5	143.1	57.6	14.4
LOS	F	F	C	F	E	A	F	F	F	E	B
Approach Delay		102.9			52.7			104.2		80.6	
Approach LOS		F			D			F		F	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.20

Intersection Signal Delay: 86.9

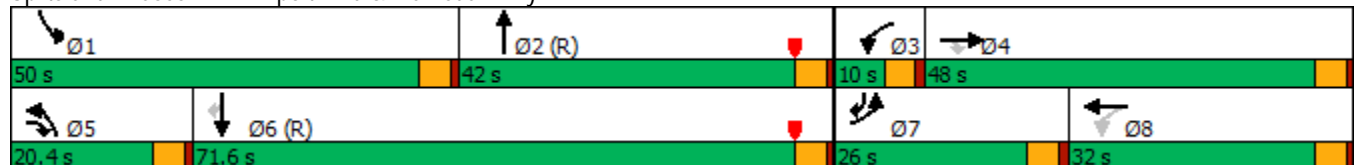
Intersection LOS: F

Intersection Capacity Utilization 108.7%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 2: Airport Blvd & Alameda Pkwy



























# HCM 6th Signalized Intersection Summary

## 2: Airport Blvd & Alameda Pkwy

2040 Total PM.syn

11/05/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	384	1570	403	114	676	462	347	1210	40	1147	2072	364
Future Volume (veh/h)	384	1570	403	114	676	462	347	1210	40	1147	2072	364
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	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	417	1707	221	124	735	0	377	1315	43	1247	2252	206
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	1481	626	113	983		366	1269	42	1048	2284	919
Arrive On Green	0.13	0.29	0.29	0.01	0.06	0.00	0.11	0.25	0.25	0.30	0.45	0.45
Sat Flow, veh/h	3456	5106	1580	1781	5106	1585	3456	5077	166	3456	5106	1580
Grp Volume(v), veh/h	417	1707	221	124	735	0	377	882	476	1247	2252	206
Grp Sat Flow(s),veh/h/ln	1728	1702	1580	1781	1702	1585	1728	1702	1839	1728	1702	1580
Q Serve(g_s), s	17.8	43.5	14.7	5.5	21.2	0.0	15.9	37.5	37.5	45.5	65.4	9.4
Cycle Q Clear(g_c), s	17.8	43.5	14.7	5.5	21.2	0.0	15.9	37.5	37.5	45.5	65.4	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	463	1481	626	113	983		366	851	460	1048	2284	919
V/C Ratio(X)	0.90	1.15	0.35	1.09	0.75		1.03	1.04	1.04	1.19	0.99	0.22
Avail Cap(c_a), veh/h	495	1481	626	113	983		366	851	460	1048	2284	919
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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	53.3	31.8	57.9	66.6	0.0	67.1	56.3	56.3	52.2	41.0	15.1
Incr Delay (d2), s/veh	18.6	76.9	0.3	112.2	3.2	0.0	54.7	40.5	51.6	95.0	15.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	28.8	5.7	5.1	10.0	0.0	9.7	20.6	23.7	33.2	29.8	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.6	130.2	32.1	170.0	69.8	0.0	121.8	96.8	107.8	147.3	56.8	15.7
LnGrp LOS	F	F	C	F	E		F	F	F	F	E	B
Approach Vol, veh/h	2345			859			A			1735		
Approach Delay, s/veh	112.5			84.3			105.2			84.9		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	50.0	42.0	10.0	48.0	20.4	71.6	24.6	33.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	45.5	37.5	5.5	43.5	15.9	67.1	21.5	27.5				
Max Q Clear Time (g_c+l1), s	47.5	39.5	7.5	45.5	17.9	67.4	19.8	23.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.8				
Intersection Summary												
HCM 6th Ctrl Delay	96.4											
HCM 6th LOS	F											
Notes												
User approved changes to right turn type.												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												



Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑			↵ ↑↑↑			↕			↕		
Traffic Vol, veh/h	3	539	142	10	1584	291	18	2	14	7	2	3
Future Vol, veh/h	3	539	142	10	1584	291	18	2	14	7	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	90	92	63	85	85	41	50	35	88	25	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	599	154	16	1864	342	44	4	40	8	8	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2206	0	0	753	0	0	1466	2922	377	2317	2828	1103
Stage 1	-	-	-	-	-	-	684	684	-	2067	2067	-
Stage 2	-	-	-	-	-	-	782	2238	-	250	761	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	98	-	-	514	-	-	135	15	530	40	17	177
Stage 1	-	-	-	-	-	-	329	447	-	34	95	-
Stage 2	-	-	-	-	-	-	321	78	-	672	412	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	98	-	-	514	-	-	114	14	530	33	16	177
Mov Cap-2 Maneuver	-	-	-	-	-	-	186	59	-	30	72	-
Stage 1	-	-	-	-	-	-	316	429	-	33	92	-
Stage 2	-	-	-	-	-	-	278	76	-	590	395	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			29.7			118.5		
HCM LOS							D			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	232	98	-	-	514	-	-	50				
HCM Lane V/C Ratio	0.379	0.041	-	-	0.031	-	-	0.399				
HCM Control Delay (s)	29.7	43.3	-	-	12.2	-	-	118.5				
HCM Lane LOS	D	E	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	1.7	0.1	-	-	0.1	-	-	1.4				

Intersection												
Int Delay, s/veh	30.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑			↵ ↑↑↑			↵			↵		
Traffic Vol, veh/h	6	1756	24	13	688	50	17	2	23	150	1	4
Future Vol, veh/h	6	1756	24	13	688	50	17	2	23	150	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	98	75	54	91	69	61	50	58	68	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1792	32	24	756	72	28	4	40	221	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	828	0	0	1824	0	0	2184	2708	912	1583	2688	414
Stage 1	-	-	-	-	-	-	1832	1832	-	840	840	-
Stage 2	-	-	-	-	-	-	352	876	-	743	1848	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	473	-	-	153	-	-	49	21	237	~ 115	21	502
Stage 1	-	-	-	-	-	-	51	126	-	257	379	-
Stage 2	-	-	-	-	-	-	584	365	-	339	123	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	473	-	-	153	-	-	39	17	237	~ 80	17	502
Mov Cap-2 Maneuver	-	-	-	-	-	-	45	86	-	~ 149	73	-
Stage 1	-	-	-	-	-	-	50	123	-	251	319	-
Stage 2	-	-	-	-	-	-	471	308	-	266	120	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.9	139.8	\$ 335
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	86	473	-	-	153	-	-	154
HCM Lane V/C Ratio	0.832	0.025	-	-	0.157	-	-	1.562
HCM Control Delay (s)	139.8	12.8	-	-	32.9	-	-	\$ 335
HCM Lane LOS	F	B	-	-	D	-	-	F
HCM 95th %tile Q(veh)	4.4	0.1	-	-	0.5	-	-	16.3

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

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑			↵ ↑↑↑			↕			↕		
Traffic Vol, veh/h	3	604	148	14	1671	303	29	5	23	7	3	3
Future Vol, veh/h	3	604	148	14	1671	303	29	5	23	7	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	90	92	63	85	85	41	50	35	88	25	75
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	671	161	22	1966	356	71	10	66	8	12	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2322	0	0	832	0	0	1596	3126	416	2469	3028	1161
Stage 1	-	-	-	-	-	-	760	760	-	2188	2188	-
Stage 2	-	-	-	-	-	-	836	2366	-	281	840	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	86	-	-	471	-	-	113	11	500	32	13	162
Stage 1	-	-	-	-	-	-	292	413	-	28	83	-
Stage 2	-	-	-	-	-	-	297	67	-	644	379	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	86	-	-	471	-	-	87	10	500	22	12	162
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	50	-	25	62	-
Stage 1	-	-	-	-	-	-	278	394	-	27	79	-
Stage 2	-	-	-	-	-	-	234	64	-	520	361	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			73.1			153.7		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	185	86	-	-	471	-	-	45				
HCM Lane V/C Ratio	0.792	0.047	-	-	0.047	-	-	0.532				
HCM Control Delay (s)	73.1	48.9	-	-	13	-	-	153.7				
HCM Lane LOS	F	E	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	5.4	0.1	-	-	0.1	-	-	2				

Intersection												
Int Delay, s/veh	74.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵ ↑↑↑			↵ ↑↑↑			↵			↵		
Traffic Vol, veh/h	6	1851	25	27	728	52	24	4	29	156	4	4
Future Vol, veh/h	6	1851	25	27	728	52	24	4	29	156	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	98	75	54	91	69	61	50	58	68	25	25
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1889	33	50	800	75	39	8	50	229	16	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	875	0	0	1922	0	0	2358	2905	961	1722	2884	438
Stage 1	-	-	-	-	-	-	1930	1930	-	938	938	-
Stage 2	-	-	-	-	-	-	428	975	-	784	1946	-
Critical Hdwy	5.34	-	-	5.34	-	-	6.44	6.54	7.14	6.44	6.54	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	7.34	5.54	-	7.34	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.74	5.54	-	6.74	5.54	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	3.82	4.02	3.92	3.82	4.02	3.92
Pot Cap-1 Maneuver	450	-	-	137	-	-	~ 38	15	220	~ 94	16	484
Stage 1	-	-	-	-	-	-	43	112	-	~ 220	341	-
Stage 2	-	-	-	-	-	-	526	328	-	320	110	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	450	-	-	137	-	-	~ 19	9	220	~ 47	~ 10	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 37	68	-	~ 108	44	-
Stage 1	-	-	-	-	-	-	42	109	-	~ 214	217	-
Stage 2	-	-	-	-	-	-	299	208	-	~ 223	107	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.5	\$ 353.7	\$ 774
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	69	450	-	-	137	-	-	104
HCM Lane V/C Ratio	1.411	0.027	-	-	0.365	-	-	2.514
HCM Control Delay (s)	\$ 353.7	13.2	-	-	45.7	-	-	\$ 774
HCM Lane LOS	F	B	-	-	E	-	-	F
HCM 95th %tile Q(veh)	8.1	0.1	-	-	1.5	-	-	23.8

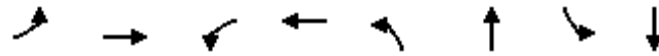
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

# Timings

2022 Background AM Improved.syn

## 3: Richfield St/Alameda Dr & Alameda Pkwy

11/04/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	3	604	14	1671	29	5	7	3
Future Volume (vph)	3	604	14	1671	29	5	7	3
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	91.0	10.0	91.0	29.0	29.0	29.0	29.0
Total Split (%)	7.7%	70.0%	7.7%	70.0%	22.3%	22.3%	22.3%	22.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	82.2	78.9	84.0	82.9	36.1	36.1	36.1	36.1
Actuated g/C Ratio	0.63	0.61	0.65	0.64	0.28	0.28	0.28	0.28
v/c Ratio	0.03	0.27	0.05	0.73	0.18	0.15	0.02	0.04
Control Delay	13.0	18.0	6.6	16.8	40.6	12.9	39.8	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	18.0	6.6	16.8	40.6	12.9	39.8	33.0
LOS	B	B	A	B	D	B	D	C
Approach Delay		18.0		16.7		26.3		35.0
Approach LOS		B		B		C		C

### Intersection Summary

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 27.5 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 17.6  
 Intersection Capacity Utilization 54.8%  
 Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A

### Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy


Ø2 (R)	Ø3	Ø4
29 s	10 s	91 s
Ø6 (R)	Ø7	Ø8
29 s	10 s	91 s

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Background AM Improved.syn

















11/04/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰↰		↰	↰↰↰		↰	↰		↰	↰↰	
Traffic Volume (veh/h)	3	604	148	14	1671	303	29	5	23	7	3	3
Future Volume (veh/h)	3	604	148	14	1671	303	29	5	23	7	3	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	671	161	22	1966	356	71	10	37	8	12	4
Peak Hour Factor	0.75	0.90	0.92	0.63	0.85	0.85	0.41	0.50	0.35	0.88	0.25	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	2291	542	402	2493	442	493	111	412	462	429	143
Arrive On Green	0.01	0.56	0.56	0.02	0.57	0.57	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	4124	975	1781	4361	774	1397	349	1290	1359	1342	447
Grp Volume(v), veh/h	4	552	280	22	1526	796	71	0	47	8	0	16
Grp Sat Flow(s),veh/h/ln	1781	1702	1695	1781	1702	1731	1397	0	1638	1359	0	1790
Q Serve(g_s), s	0.1	11.2	11.4	0.7	45.2	47.5	4.8	0.0	2.6	0.5	0.0	0.8
Cycle Q Clear(g_c), s	0.1	11.2	11.4	0.7	45.2	47.5	5.6	0.0	2.6	3.2	0.0	0.8
Prop In Lane	1.00		0.58	1.00		0.45	1.00		0.79	1.00		0.25
Lane Grp Cap(c), veh/h	97	1891	942	402	1946	989	493	0	523	462	0	572
V/C Ratio(X)	0.04	0.29	0.30	0.05	0.78	0.81	0.14	0.00	0.09	0.02	0.00	0.03
Avail Cap(c_a), veh/h	163	2265	1128	439	2265	1152	493	0	523	462	0	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.7	15.3	15.4	12.3	21.6	22.1	32.3	0.0	31.0	32.1	0.0	30.4
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.1	1.6	3.7	0.6	0.0	0.3	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.2	4.3	0.3	17.2	18.9	1.7	0.0	1.1	0.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.8	15.4	15.5	12.4	23.2	25.8	32.9	0.0	31.3	32.2	0.0	30.5
LnGrp LOS	C	B	B	B	C	C	C	A	C	C	A	C
Approach Vol, veh/h		836			2344			118			24	
Approach Delay, s/veh		15.5			24.0			32.3			31.0	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.0	7.2	76.7		46.0	5.2	78.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		24.5	5.5	86.5		24.5	5.5	86.5				
Max Q Clear Time (g_c+I1), s		7.6	2.7	13.4		5.2	2.1	49.5				
Green Ext Time (p_c), s		0.4	0.0	6.2		0.0	0.0	24.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			22.2									
HCM 6th LOS			C									
<b>Notes</b>												
User approved volume balancing among the lanes for turning movement.												

# Timings 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Background PM Improved.syn

11/04/2020

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	6	1851	27	728	24	4	156	4
Future Volume (vph)	6	1851	27	728	24	4	156	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	10.0	82.0	13.0	85.0	55.0	55.0	55.0	55.0
Total Split (%)	6.7%	54.7%	8.7%	56.7%	36.7%	36.7%	36.7%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	77.0	72.6	81.6	78.4	58.6	58.6	58.6	58.6
Actuated g/C Ratio	0.51	0.48	0.54	0.52	0.39	0.39	0.39	0.39
v/c Ratio	0.04	0.78	0.38	0.33	0.07	0.09	0.44	0.05
Control Delay	9.0	15.4	21.9	20.5	33.2	10.8	39.2	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	15.4	21.9	20.5	33.2	10.8	39.2	20.2
LOS	A	B	C	C	C	B	D	C
Approach Delay		15.4		20.5		19.8		36.9
Approach LOS		B		C		B		D

## Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 53.5 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 18.7

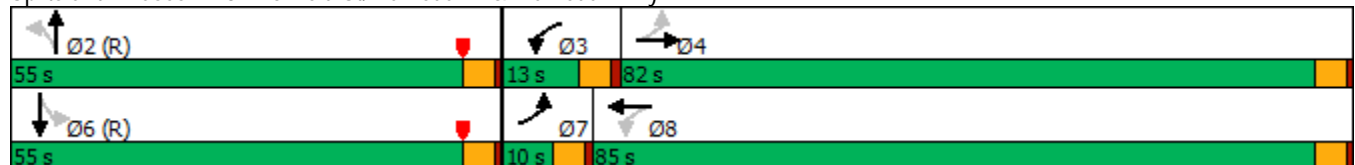
Intersection LOS: B

Intersection Capacity Utilization 59.1%

ICU Level of Service B

Analysis Period (min) 15

## Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy



























# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Background PM Improved.syn

11/04/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	6	1851	25	27	728	52	24	4	29	156	4	4
Future Volume (veh/h)	6	1851	25	27	728	52	24	4	29	156	4	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	1889	33	50	800	75	39	8	50	229	16	16
Peak Hour Factor	0.50	0.98	0.75	0.54	0.91	0.69	0.61	0.50	0.58	0.68	0.25	0.25
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	2282	40	128	2174	203	638	98	613	611	377	377
Arrive On Green	0.01	0.44	0.44	0.03	0.46	0.46	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1781	5168	90	1781	4751	443	1377	223	1396	1345	858	858
Grp Volume(v), veh/h	12	1244	678	50	572	303	39	0	58	229	0	32
Grp Sat Flow(s),veh/h/ln	1781	1702	1854	1781	1702	1791	1377	0	1619	1345	0	1716
Q Serve(g_s), s	0.6	48.2	48.3	2.3	16.4	16.6	2.5	0.0	3.1	17.9	0.0	1.6
Cycle Q Clear(g_c), s	0.6	48.2	48.3	2.3	16.4	16.6	4.1	0.0	3.1	21.0	0.0	1.6
Prop In Lane	1.00		0.05	1.00		0.25	1.00		0.86	1.00		0.50
Lane Grp Cap(c), veh/h	291	1503	819	128	1558	819	638	0	711	611	0	754
V/C Ratio(X)	0.04	0.83	0.83	0.39	0.37	0.37	0.06	0.00	0.08	0.37	0.00	0.04
Avail Cap(c_a), veh/h	333	1759	958	177	1827	961	638	0	711	611	0	754
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.39	0.39	0.39	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.1	36.9	36.9	31.5	26.5	26.6	25.2	0.0	24.5	30.6	0.0	24.0
Incr Delay (d2), s/veh	0.0	1.2	2.2	1.9	0.1	0.3	0.2	0.0	0.2	1.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	19.8	21.8	1.0	6.7	7.1	0.9	0.0	1.3	6.3	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	38.1	39.1	33.5	26.7	26.8	25.4	0.0	24.7	32.3	0.0	24.1
LnGrp LOS	C	D	D	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1934			925			97			261	
Approach Delay, s/veh		38.3			27.1			25.0			31.3	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		70.4	8.9	70.7		70.4	6.5	73.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		50.5	8.5	77.5		50.5	5.5	80.5				
Max Q Clear Time (g_c+l1), s		6.1	4.3	50.3		23.0	2.6	18.6				
Green Ext Time (p_c), s		0.5	0.0	15.9		0.9	0.0	6.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			34.1									
HCM 6th LOS			C									

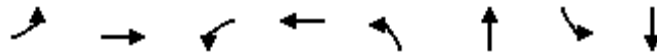


# Timings

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Total AM.syn

01/08/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	23	607	14	1746	29	5	122	3
Future Volume (vph)	23	607	14	1746	29	5	122	3
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	11.0	89.0	10.0	88.0	31.0	31.0	31.0	31.0
Total Split (%)	8.5%	68.5%	7.7%	67.7%	23.8%	23.8%	23.8%	23.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	86.5	82.6	85.3	82.0	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.67	0.64	0.66	0.63	0.25	0.25	0.25	0.25
v/c Ratio	0.22	0.26	0.05	0.77	0.22	0.17	0.42	0.16
Control Delay	21.4	16.7	5.6	18.7	44.0	13.5	48.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	16.7	5.6	18.7	44.0	13.5	48.3	14.6
LOS	C	B	A	B	D	B	D	B
Approach Delay		16.9		18.6		28.2		36.7
Approach LOS		B		B		C		D

### Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 27.5 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 19.6

Intersection LOS: B

Intersection Capacity Utilization 61.9%

ICU Level of Service B

Analysis Period (min) 15

### Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy

























	Ø2 (R)		Ø3		Ø4
31 s		10 s		89 s	
	Ø6 (R)		Ø7		Ø8
31 s		11 s		88 s	

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Total AM.syn

01/08/2021

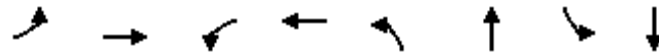
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	23	607	148	14	1746	323	29	5	23	122	3	46
Future Volume (veh/h)	23	607	148	14	1746	323	29	5	23	122	3	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	674	161	22	2054	380	71	10	66	139	12	61
Peak Hour Factor	0.75	0.90	0.92	0.63	0.85	0.85	0.41	0.50	0.35	0.88	0.25	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	2427	572	426	2537	457	392	61	403	389	77	390
Arrive On Green	0.03	0.59	0.59	0.02	0.58	0.58	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	4127	972	1781	4350	784	1327	213	1405	1323	267	1359
Grp Volume(v), veh/h	31	554	281	22	1595	839	71	0	76	139	0	73
Grp Sat Flow(s),veh/h/ln	1781	1702	1695	1781	1702	1729	1327	0	1618	1323	0	1626
Q Serve(g_s), s	0.9	10.4	10.6	0.6	47.8	51.0	5.5	0.0	4.6	11.4	0.0	4.4
Cycle Q Clear(g_c), s	0.9	10.4	10.6	0.6	47.8	51.0	9.8	0.0	4.6	16.0	0.0	4.4
Prop In Lane	1.00		0.57	1.00		0.45	1.00		0.87	1.00		0.84
Lane Grp Cap(c), veh/h	128	2002	997	426	1985	1008	392	0	464	389	0	467
V/C Ratio(X)	0.24	0.28	0.28	0.05	0.80	0.83	0.18	0.00	0.16	0.36	0.00	0.16
Avail Cap(c_a), veh/h	171	2213	1102	464	2186	1111	392	0	464	389	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	13.2	13.2	10.7	21.3	21.9	38.3	0.0	34.7	40.6	0.0	34.6
Incr Delay (d2), s/veh	1.0	0.1	0.2	0.0	2.1	5.1	1.0	0.0	0.8	2.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.8	3.9	0.2	18.2	20.5	1.9	0.0	1.9	4.1	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	13.3	13.4	10.8	23.3	27.0	39.3	0.0	35.4	43.2	0.0	35.3
LnGrp LOS	C	B	B	B	C	C	D	A	D	D	A	D
Approach Vol, veh/h		866			2456			147			212	
Approach Delay, s/veh		13.7			24.5			37.3			40.5	
Approach LOS		B			C			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		41.8	7.2	80.9		41.8	7.9	80.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		26.5	5.5	84.5		26.5	6.5	83.5				
Max Q Clear Time (g_c+I1), s		11.8	2.6	12.6		18.0	2.9	53.0				
Green Ext Time (p_c), s		0.5	0.0	6.2		0.5	0.0	22.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									

# Timings

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Total PM.syn

01/08/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	71	1860	27	784	24	4	237	4
Future Volume (vph)	71	1860	27	784	24	4	237	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	19.0	76.0	12.0	69.0	62.0	62.0	62.0	62.0
Total Split (%)	12.7%	50.7%	8.0%	46.0%	41.3%	41.3%	41.3%	41.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	78.4	69.3	69.7	62.7	62.3	62.3	62.3	62.3
Actuated g/C Ratio	0.52	0.46	0.46	0.42	0.42	0.42	0.42	0.42
v/c Ratio	0.48	0.82	0.38	0.46	0.09	0.08	0.63	0.24
Control Delay	17.0	21.4	25.2	31.3	30.2	9.5	42.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	21.4	25.2	31.3	30.2	9.5	42.6	6.2
LOS	B	C	C	C	C	A	D	A
Approach Delay		21.1		31.0		17.9		30.0
Approach LOS		C		C		B		C

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55.1 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 25.0

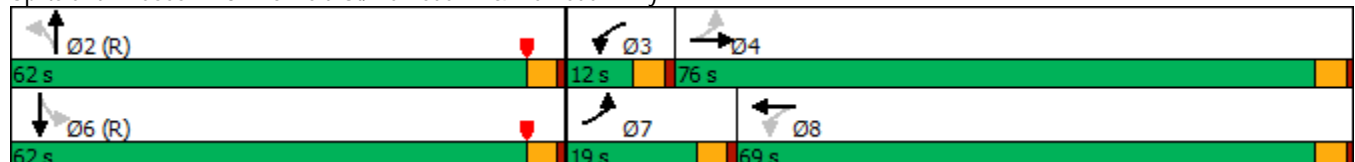
Intersection LOS: C

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

### Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy























# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2022 Total PM.syn

















01/08/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	1860	25	27	784	77	24	4	29	237	4	42
Future Volume (veh/h)	71	1860	25	27	784	77	24	4	29	237	4	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	1898	33	50	862	112	39	8	50	349	16	168
Peak Hour Factor	0.50	0.98	0.75	0.54	0.91	0.69	0.61	0.50	0.58	0.68	0.25	0.25
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	2228	39	123	1832	237	502	100	628	626	63	660
Arrive On Green	0.06	0.43	0.43	0.03	0.40	0.40	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1781	5168	90	1781	4576	592	1200	223	1396	1345	140	1467
Grp Volume(v), veh/h	142	1250	681	50	640	334	39	0	58	349	0	184
Grp Sat Flow(s),veh/h/ln	1781	1702	1854	1781	1702	1764	1200	0	1619	1345	0	1606
Q Serve(g_s), s	6.8	49.5	49.6	2.5	20.8	21.0	3.1	0.0	3.1	30.0	0.0	10.7
Cycle Q Clear(g_c), s	6.8	49.5	49.6	2.5	20.8	21.0	13.8	0.0	3.1	33.1	0.0	10.7
Prop In Lane	1.00		0.05	1.00		0.34	1.00		0.86	1.00		0.91
Lane Grp Cap(c), veh/h	305	1467	799	123	1363	706	502	0	728	626	0	722
V/C Ratio(X)	0.47	0.85	0.85	0.41	0.47	0.47	0.08	0.00	0.08	0.56	0.00	0.25
Avail Cap(c_a), veh/h	371	1623	884	160	1464	758	502	0	728	626	0	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.9	38.4	38.4	33.7	33.2	33.3	29.9	0.0	23.6	33.0	0.0	25.6
Incr Delay (d2), s/veh	1.1	4.2	7.5	2.1	0.3	0.5	0.3	0.0	0.2	3.6	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	21.0	23.6	1.1	8.6	9.0	1.0	0.0	1.3	10.6	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.0	42.6	45.9	35.9	33.5	33.7	30.2	0.0	23.8	36.6	0.0	26.5
LnGrp LOS	C	D	D	D	C	C	C	A	C	D	A	C
Approach Vol, veh/h	2073				1024		97				533	
Approach Delay, s/veh	42.5				33.7		26.4				33.1	
Approach LOS	D				C		C				C	
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	72.0		8.9	69.2		72.0	13.5	64.6				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s	57.5		7.5	71.5		57.5	14.5	64.5				
Max Q Clear Time (g_c+l1), s	15.8		4.5	51.6		35.1	8.8	23.0				
Green Ext Time (p_c), s	0.5		0.0	13.1		2.4	0.2	7.3				
Intersection Summary												
HCM 6th Ctrl Delay			38.3									
HCM 6th LOS			D									

# Timings 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Background AM.syn

11/04/2020

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	4	844	20	2377	37	6	10	4
Future Volume (vph)	4	844	20	2377	37	6	10	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.8	96.6	9.8	96.6	23.6	23.6	23.6	23.6
Total Split (%)	7.5%	74.3%	7.5%	74.3%	18.2%	18.2%	18.2%	18.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	96.1	92.9	97.9	96.9	22.2	22.2	22.2	22.2
Actuated g/C Ratio	0.74	0.71	0.75	0.75	0.17	0.17	0.17	0.17
v/c Ratio	0.03	0.32	0.06	0.82	0.17	0.13	0.05	0.03
Control Delay	7.5	12.4	3.5	13.2	50.5	20.4	48.4	36.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	12.4	3.5	13.2	50.5	20.4	48.4	36.7
LOS	A	B	A	B	D	C	D	D
Approach Delay		12.3		13.1		35.7		43.5
Approach LOS		B		B		D		D

## Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 27.5 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 13.5

Intersection LOS: B

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy

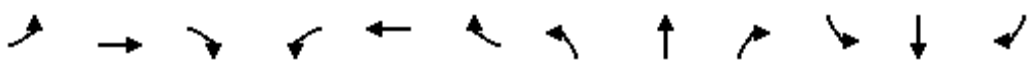
		
Ø2 (R)	Ø3	Ø4
23.6 s	9.8 s	96.6 s
		
Ø6 (R)	Ø7	Ø8
23.6 s	9.8 s	96.6 s

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Background AM.syn

















11/04/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑↑		↰	↑↑↑		↰	↑		↰	↑	
Traffic Volume (veh/h)	4	844	211	20	2377	432	37	6	29	10	4	4
Future Volume (veh/h)	4	844	211	20	2377	432	37	6	29	10	4	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	917	229	22	2584	470	40	7	32	11	4	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	2762	687	379	3041	522	328	58	264	299	170	170
Arrive On Green	0.01	0.68	0.68	0.02	0.69	0.69	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	4077	1014	1781	4386	753	1407	293	1337	1368	858	858
Grp Volume(v), veh/h	4	765	381	22	1971	1083	40	0	39	11	0	8
Grp Sat Flow(s),veh/h/ln	1781	1702	1688	1781	1702	1735	1407	0	1630	1368	0	1716
Q Serve(g_s), s	0.1	12.2	12.2	0.5	54.8	66.2	3.1	0.0	2.6	0.9	0.0	0.5
Cycle Q Clear(g_c), s	0.1	12.2	12.2	0.5	54.8	66.2	3.6	0.0	2.6	3.4	0.0	0.5
Prop In Lane	1.00		0.60	1.00		0.43	1.00		0.82	1.00		0.50
Lane Grp Cap(c), veh/h	78	2306	1143	379	2360	1203	328	0	322	299	0	339
V/C Ratio(X)	0.05	0.33	0.33	0.06	0.84	0.90	0.12	0.00	0.12	0.04	0.00	0.02
Avail Cap(c_a), veh/h	142	2412	1196	414	2412	1229	328	0	322	299	0	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	8.7	8.7	6.6	14.5	16.3	43.5	0.0	42.9	44.3	0.0	42.0
Incr Delay (d2), s/veh	0.3	0.1	0.2	0.1	2.7	9.1	0.8	0.0	0.8	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.1	4.1	0.2	19.0	25.3	1.2	0.0	1.1	0.3	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	8.8	8.9	6.6	17.2	25.4	44.2	0.0	43.6	44.5	0.0	42.2
LnGrp LOS	C	A	A	A	B	C	D	A	D	D	A	D
Approach Vol, veh/h		1150			3076			79			19	
Approach Delay, s/veh		8.9			20.0			43.9			43.5	
Approach LOS		A			C			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		30.2	7.2	92.6		30.2	5.2	94.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.1	5.3	92.1		19.1	5.3	92.1				
Max Q Clear Time (g_c+I1), s		5.6	2.5	14.2		5.4	2.1	68.2				
Green Ext Time (p_c), s		0.2	0.0	9.7		0.0	0.0	21.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

# Timings 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Background PM.syn

11/04/2020

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	9	2633	32	1034	31	5	223	4
Future Volume (vph)	9	2633	32	1034	31	5	223	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.6	97.0	10.0	97.4	43.0	43.0	43.0	43.0
Total Split (%)	6.4%	64.7%	6.7%	64.9%	28.7%	28.7%	28.7%	28.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	97.9	93.8	100.2	98.0	39.2	39.2	39.2	39.2
Actuated g/C Ratio	0.65	0.63	0.67	0.65	0.26	0.26	0.26	0.26
v/c Ratio	0.03	0.91	0.31	0.37	0.09	0.10	0.69	0.02
Control Delay	4.2	33.3	15.3	12.4	43.5	14.2	61.5	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.2	33.3	15.3	12.4	43.5	14.2	61.5	27.2
LOS	A	C	B	B	D	B	E	C
Approach Delay		33.2		12.5		26.5		60.0
Approach LOS		C		B		C		E

## Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55.1 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 28.9

Intersection LOS: C

Intersection Capacity Utilization 78.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy

























	Ø2 (R)		Ø3		Ø4
43 s		10 s		97 s	
	Ø6 (R)		Ø7		Ø8
43 s		9.6 s		97.4 s	

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Background PM.syn

11/04/2020

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	9	2633	36	32	1034	74	31	5	39	223	4	6
Future Volume (veh/h)	9	2633	36	32	1034	74	31	5	39	223	4	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	2862	39	35	1124	80	34	5	42	242	4	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	3149	43	104	3021	215	431	48	400	396	170	297
Arrive On Green	0.01	0.61	0.61	0.03	0.62	0.62	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	5191	70	1781	4866	346	1404	171	1440	1359	610	1068
Grp Volume(v), veh/h	10	1872	1029	35	786	418	34	0	47	242	0	11
Grp Sat Flow(s),veh/h/ln	1781	1702	1858	1781	1702	1808	1404	0	1611	1359	0	1678
Q Serve(g_s), s	0.3	72.1	73.2	1.1	17.1	17.1	2.7	0.0	3.3	24.2	0.0	0.7
Cycle Q Clear(g_c), s	0.3	72.1	73.2	1.1	17.1	17.1	3.4	0.0	3.3	27.4	0.0	0.7
Prop In Lane	1.00		0.04	1.00		0.19	1.00		0.89	1.00		0.64
Lane Grp Cap(c), veh/h	304	2065	1127	104	2113	1123	431	0	448	396	0	466
V/C Ratio(X)	0.03	0.91	0.91	0.34	0.37	0.37	0.08	0.00	0.11	0.61	0.00	0.02
Avail Cap(c_a), veh/h	344	2099	1146	124	2113	1123	431	0	448	396	0	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.8	25.8	26.0	35.3	14.0	14.0	40.6	0.0	40.3	50.5	0.0	39.4
Incr Delay (d2), s/veh	0.0	6.1	11.0	1.9	0.1	0.2	0.4	0.0	0.5	6.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	28.9	33.6	0.8	6.4	6.8	1.0	0.0	1.4	9.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	31.9	37.0	37.2	14.1	14.2	41.0	0.0	40.8	57.4	0.0	39.5
LnGrp LOS	B	C	D	D	B	B	D	A	D	E	A	D
Approach Vol, veh/h		2911			1239			81			253	
Approach Delay, s/veh		33.6			14.8			40.9			56.6	
Approach LOS		C			B			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.2	8.3	95.5		46.2	6.2	97.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.5	5.5	92.5		38.5	5.1	92.9				
Max Q Clear Time (g_c+l1), s		5.4	3.1	75.2		29.4	2.3	19.1				
Green Ext Time (p_c), s		0.4	0.0	15.8		0.5	0.0	10.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			29.9									
HCM 6th LOS			C									



# Timings 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Total AM.syn

01/08/2021

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	24	847	20	2452	37	6	125	4
Future Volume (vph)	24	847	20	2452	37	6	125	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	9.8	95.0	9.8	95.0	25.2	25.2	25.2	25.2
Total Split (%)	7.5%	73.1%	7.5%	73.1%	19.4%	19.4%	19.4%	19.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	96.8	93.6	96.8	93.6	21.5	21.5	21.5	21.5
Actuated g/C Ratio	0.74	0.72	0.74	0.72	0.17	0.17	0.17	0.17
v/c Ratio	0.20	0.32	0.06	0.88	0.18	0.13	0.60	0.18
Control Delay	14.7	0.4	3.9	18.0	49.9	19.9	63.1	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	0.4	3.9	18.0	49.9	19.9	63.1	15.4
LOS	B	A	A	B	D	B	E	B
Approach Delay		0.7		17.9		35.1		49.3
Approach LOS		A		B		D		D

## Intersection Summary

Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 27.5 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 15.1  
 Intersection Capacity Utilization 78.5%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service D

## Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy

























		
Ø2 (R)	Ø3	Ø4
25.2 s	9.8 s	95 s
		
Ø6 (R)	Ø7	Ø8
25.2 s	9.8 s	95 s

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Total AM.syn






















01/08/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	24	847	211	20	2452	452	37	6	29	125	4	47
Future Volume (veh/h)	24	847	211	20	2452	452	37	6	29	125	4	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	921	229	22	2665	491	40	7	32	136	4	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	2828	701	388	3023	525	262	53	244	277	21	271
Arrive On Green	0.02	0.69	0.69	0.02	0.69	0.69	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	4081	1011	1781	4377	761	1349	293	1337	1368	117	1486
Grp Volume(v), veh/h	26	768	382	22	2037	1119	40	0	39	136	0	55
Grp Sat Flow(s),veh/h/ln	1781	1702	1688	1781	1702	1733	1349	0	1630	1368	0	1603
Q Serve(g_s), s	0.6	11.6	11.7	0.5	59.9	73.3	3.4	0.0	2.6	12.0	0.0	3.8
Cycle Q Clear(g_c), s	0.6	11.6	11.7	0.5	59.9	73.3	7.1	0.0	2.6	14.6	0.0	3.8
Prop In Lane	1.00		0.60	1.00		0.44	1.00		0.82	1.00		0.93
Lane Grp Cap(c), veh/h	106	2359	1170	388	2351	1197	262	0	297	277	0	292
V/C Ratio(X)	0.25	0.33	0.33	0.06	0.87	0.93	0.15	0.00	0.13	0.49	0.00	0.19
Avail Cap(c_a), veh/h	137	2370	1175	423	2370	1207	262	0	297	277	0	292
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	7.9	7.9	6.0	15.5	17.6	48.0	0.0	44.5	50.7	0.0	45.0
Incr Delay (d2), s/veh	1.2	0.1	0.2	0.1	3.7	13.2	1.2	0.0	0.9	6.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.9	3.9	0.2	21.1	29.2	1.2	0.0	1.1	4.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	8.0	8.1	6.1	19.1	30.8	49.3	0.0	45.5	56.8	0.0	46.4
LnGrp LOS	C	A	A	A	B	C	D	A	D	E	A	D
Approach Vol, veh/h	1176			3178			79			191		
Approach Delay, s/veh	8.6			23.1			47.4			53.8		
Approach LOS	A			C			D			D		
Timer - Assigned Phs	2			3			4			6		
Phs Duration (G+Y+Rc), s	28.2			7.2			94.6			28.2		
Change Period (Y+Rc), s	4.5			4.5			4.5			4.5		
Max Green Setting (Gmax), s	20.7			5.3			90.5			20.7		
Max Q Clear Time (g_c+I1), s	9.1			2.5			13.7			16.6		
Green Ext Time (p_c), s	0.2			0.0			9.7			0.2		
Intersection Summary												
HCM 6th Ctrl Delay	21.1											
HCM 6th LOS	C											

# Timings 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Total PM.syn

01/08/2021







								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		  		  		 		
Traffic Volume (vph)	74	2642	32	1090	31	5	304	4
Future Volume (vph)	74	2642	32	1090	31	5	304	4
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	12.2	93.0	9.8	90.6	47.2	47.2	47.2	47.2
Total Split (%)	8.1%	62.0%	6.5%	60.4%	31.5%	31.5%	31.5%	31.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	96.5	90.5	91.8	86.5	42.7	42.7	42.7	42.7
Actuated g/C Ratio	0.64	0.60	0.61	0.58	0.28	0.28	0.28	0.28
v/c Ratio	0.31	0.95	0.32	0.45	0.09	0.10	0.86	0.11
Control Delay	4.7	32.6	17.0	18.5	40.4	13.1	72.7	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	32.6	17.0	18.5	40.4	13.1	72.7	11.9
LOS	A	C	B	B	D	B	E	B
Approach Delay		31.9		18.4		24.5		64.4
Approach LOS		C		B		C		E

## Intersection Summary

Cycle Length: 150  
 Actuated Cycle Length: 150  
 Offset: 55.1 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 30.6  
 Intersection Capacity Utilization 90.8%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service E

## Splits and Phases: 3: Richfield St/Alameda Dr & Alameda Pkwy





















 Ø2 (R)	 Ø3	 Ø4
47.2 s	9.8 s	93 s
 Ø6 (R)	 Ø7	 Ø8
47.2 s	12.2 s	90.6 s

# HCM 6th Signalized Intersection Summary

## 3: Richfield St/Alameda Dr & Alameda Pkwy

2040 Total PM.syn

01/08/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	2642	36	32	1090	99	31	5	39	304	4	44
Future Volume (veh/h)	74	2642	36	32	1090	99	31	5	39	304	4	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	2872	39	35	1185	108	34	5	42	330	4	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	293	3046	41	100	2763	252	419	51	428	424	37	441
Arrive On Green	0.03	0.59	0.59	0.03	0.58	0.58	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1781	5192	70	1781	4762	434	1352	171	1440	1359	123	1480
Grp Volume(v), veh/h	80	1879	1032	35	847	446	34	0	47	330	0	52
Grp Sat Flow(s),veh/h/ln	1781	1702	1858	1781	1702	1792	1352	0	1611	1359	0	1604
Q Serve(g_s), s	2.7	76.3	77.5	1.2	20.9	20.9	2.8	0.0	3.2	34.8	0.0	3.5
Cycle Q Clear(g_c), s	2.7	76.3	77.5	1.2	20.9	20.9	6.3	0.0	3.2	38.0	0.0	3.5
Prop In Lane	1.00		0.04	1.00		0.24	1.00		0.89	1.00		0.92
Lane Grp Cap(c), veh/h	293	1998	1090	100	1975	1040	419	0	480	424	0	477
V/C Ratio(X)	0.27	0.94	0.95	0.35	0.43	0.43	0.08	0.00	0.10	0.78	0.00	0.11
Avail Cap(c_a), veh/h	328	2008	1096	117	1975	1040	419	0	480	424	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	28.6	28.8	36.2	17.6	17.6	40.5	0.0	38.1	51.9	0.0	38.2
Incr Delay (d2), s/veh	0.5	9.5	16.0	2.1	0.1	0.3	0.4	0.0	0.4	13.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	31.7	37.1	0.8	8.0	8.5	1.0	0.0	1.3	13.5	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.1	38.0	44.8	38.3	17.7	17.9	40.9	0.0	38.5	65.1	0.0	38.7
LnGrp LOS	B	D	D	D	B	B	D	A	D	E	A	D
Approach Vol, veh/h	2991			1328			81			382		
Approach Delay, s/veh	39.7			18.3			39.5			61.5		
Approach LOS	D			B			D			E		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	49.1		8.3	92.5		49.1		9.3	91.5			
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5		4.5	4.5			
Max Green Setting (Gmax), s	42.7		5.3	88.5		42.7		7.7	86.1			
Max Q Clear Time (g_c+l1), s	8.3		3.2	79.5		40.0		4.7	22.9			
Green Ext Time (p_c), s	0.4		0.0	8.5		0.4		0.0	11.4			
Intersection Summary												
HCM 6th Ctrl Delay	35.5											
HCM 6th LOS	D											

Intersection												
Int Delay, s/veh	0.7											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	98	1	4	335	1	3	0	14	4	0	8
Future Vol, veh/h	3	98	1	4	335	1	3	0	14	4	0	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	107	1	4	364	1	3	0	15	4	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	365	0	0	108	0	0	491	487	108	494	487	365
Stage 1	-	-	-	-	-	-	114	114	-	373	373	-
Stage 2	-	-	-	-	-	-	377	373	-	121	114	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1194	-	-	1483	-	-	488	481	946	486	481	680
Stage 1	-	-	-	-	-	-	891	801	-	648	618	-
Stage 2	-	-	-	-	-	-	644	618	-	883	801	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1194	-	-	1483	-	-	480	478	946	476	478	680
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	478	-	476	478	-
Stage 1	-	-	-	-	-	-	888	799	-	646	616	-
Stage 2	-	-	-	-	-	-	634	616	-	866	799	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	0.2			0.1			9.6			11.2		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	808	1483	-	-	1194	-	-	595				
HCM Lane V/C Ratio	0.023	0.003	-	-	0.003	-	-	0.022				
HCM Control Delay (s)	9.6	7.4	0	-	8	0	-	11.2				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	256	4	14	81	4	2	0	8	4	0	8
Future Vol, veh/h	9	256	4	14	81	4	2	0	8	4	0	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	278	4	15	88	4	2	0	9	4	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	92	0	0	282	0	0	425	422	280	425	422	90
Stage 1	-	-	-	-	-	-	300	300	-	120	120	-
Stage 2	-	-	-	-	-	-	125	122	-	305	302	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1503	-	-	1280	-	-	540	523	759	540	523	968
Stage 1	-	-	-	-	-	-	709	666	-	884	796	-
Stage 2	-	-	-	-	-	-	879	795	-	705	664	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1503	-	-	1280	-	-	527	513	759	526	513	968
Mov Cap-2 Maneuver	-	-	-	-	-	-	527	513	-	526	513	-
Stage 1	-	-	-	-	-	-	703	661	-	877	786	-
Stage 2	-	-	-	-	-	-	861	785	-	691	659	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	0.2			1.1			10.2			9.8		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	698	1280	-	-	1503	-	-	756				
HCM Lane V/C Ratio	0.016	0.012	-	-	0.007	-	-	0.017				
HCM Control Delay (s)	10.2	7.8	0	-	7.4	0	-	9.8				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	0.6											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	103	1	4	466	1	3	0	14	4	0	8
Future Vol, veh/h	3	103	1	4	466	1	3	0	14	4	0	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	112	1	4	507	1	3	0	15	4	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	508	0	0	113	0	0	639	635	113	642	635	508
Stage 1	-	-	-	-	-	-	119	119	-	516	516	-
Stage 2	-	-	-	-	-	-	520	516	-	126	119	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1057	-	-	1476	-	-	389	396	940	387	396	565
Stage 1	-	-	-	-	-	-	885	797	-	542	534	-
Stage 2	-	-	-	-	-	-	539	534	-	878	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1057	-	-	1476	-	-	381	393	940	379	393	565
Mov Cap-2 Maneuver	-	-	-	-	-	-	381	393	-	379	393	-
Stage 1	-	-	-	-	-	-	882	795	-	540	532	-
Stage 2	-	-	-	-	-	-	529	532	-	861	795	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	0.2			0.1			9.9			12.6		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	747	1476	-	-	1057	-	-	486				
HCM Lane V/C Ratio	0.025	0.003	-	-	0.003	-	-	0.027				
HCM Control Delay (s)	9.9	7.4	0	-	8.4	0	-	12.6				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	0.8											
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	335	4	14	107	4	2	0	8	4	0	8
Future Vol, veh/h	9	335	4	14	107	4	2	0	8	4	0	8
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	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	364	4	15	116	4	2	0	9	4	0	9
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	368	0	0	539	536	366	539	536	118
Stage 1	-	-	-	-	-	-	386	386	-	148	148	-
Stage 2	-	-	-	-	-	-	153	150	-	391	388	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1468	-	-	1191	-	-	453	451	679	453	451	934
Stage 1	-	-	-	-	-	-	637	610	-	855	775	-
Stage 2	-	-	-	-	-	-	849	773	-	633	609	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1191	-	-	441	441	679	439	441	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	441	-	439	441	-
Stage 1	-	-	-	-	-	-	631	605	-	847	764	-
Stage 2	-	-	-	-	-	-	829	762	-	619	604	-
Approach	SE			NW			NE			SW		
HCM Control Delay, s	0.2			0.9			11			10.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SERSWLn1					
Capacity (veh/h)	613	1191	-	-	1468	-	-	679				
HCM Lane V/C Ratio	0.018	0.013	-	-	0.007	-	-	0.019				
HCM Control Delay (s)	11	8.1	0	-	7.5	0	-	10.4				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1				



Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	3	711	2053	7	0	8
Future Vol, veh/h	3	711	2053	7	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	225	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	773	2232	8	0	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	2240	0	-	0	-	1120
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	94	-	-	-	0	172
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	94	-	-	-	-	172
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		27		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	94	-	-	-	172	
HCM Lane V/C Ratio	0.035	-	-	-	0.051	
HCM Control Delay (s)	44.7	-	-	-	27	
HCM Lane LOS	E	-	-	-	D	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	




Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	9	2096	867	22	0	8
Future Vol, veh/h	9	2096	867	22	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	225	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	2278	942	24	0	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	966	0	-	0	-	483
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	406	-	-	-	0	453
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	406	-	-	-	-	453
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		13.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	406	-	-	-	-	453
HCM Lane V/C Ratio	0.024	-	-	-	-	0.019
HCM Control Delay (s)	14.1	-	-	-	-	13.1
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	3	960	2893	7	0	8
Future Vol, veh/h	3	960	2893	7	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	225	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1043	3145	8	0	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	3153	0	-	0	-	1577
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	31	-	-	-	0	84
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	31	-	-	-	-	84
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		52.7		
HCM LOS				F		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	31	-	-	-	-	84
HCM Lane V/C Ratio	0.105	-	-	-	-	0.104
HCM Control Delay (s)	134.3	-	-	-	-	52.7
HCM Lane LOS	F	-	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑↑	↑↑↑↱			↱
Traffic Vol, veh/h	9	2955	1202	22	0	8
Future Vol, veh/h	9	2955	1202	22	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	225	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	3212	1307	24	0	9
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1331	0	-	0	-	666
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	-	-	3.92
Pot Cap-1 Maneuver	270	-	-	-	0	345
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	270	-	-	-	-	345
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		15.7		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	270	-	-	-	345	
HCM Lane V/C Ratio	0.036	-	-	-	0.025	
HCM Control Delay (s)	18.8	-	-	-	15.7	
HCM Lane LOS	C	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection




Int Delay, s/veh 2.7




Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	50	16	337	50	78
Future Vol, veh/h	25	50	16	337	50	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	54	17	366	54	85

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	81
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1519
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	1519
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.7
HCM LOS			B




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1519	-
HCM Lane V/C Ratio	0.181	-	-	0.011	-
HCM Control Delay (s)	10.7	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	225	37	11	83	32	51
Future Vol, veh/h	225	37	11	83	32	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	40	12	90	35	55
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	285	0	379	265
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1304	-	694	879
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1304	-	687	879
Mov Cap-2 Maneuver	-	-	-	-	687	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	902	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.9		10.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	794	-	-	1304	-	
HCM Lane V/C Ratio	0.114	-	-	0.009	-	
HCM Control Delay (s)	10.1	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	30	50	16	469	50	78
Future Vol, veh/h	30	50	16	469	50	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	54	17	510	54	85
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	87	0	604	60
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	544	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1511	-	462	1010
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	582	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1511	-	455	1010
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	573	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		11.6	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	684	-	-	1511	-	
HCM Lane V/C Ratio	0.203	-	-	0.012	-	
HCM Control Delay (s)	11.6	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	

Intersection

Int Delay, s/veh 1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	304	37	11	109	32	51
Future Vol, veh/h	304	37	11	109	32	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	330	40	12	118	35	55

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	370
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1216
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	1
Mov Cap-1 Maneuver	-	-	1216
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	726	-	-	1216	-
HCM Lane V/C Ratio	0.124	-	-	0.01	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-






HCM 6th TWSC  
7: Quintero Way & West Access




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Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	12	2	0	4	2	0
Future Vol, veh/h	12	2	0	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	2	0	4	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	6	2	0	0	4	0
Stage 1	2	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1015	1082	-	-	1618	-
Stage 1	1021	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1014	1082	-	-	1618	-
Mov Cap-2 Maneuver	1014	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NE	SW			
HCM Control Delay, s	8.6	0	7.2			
HCM LOS	A					
Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT		
Capacity (veh/h)	-	-	1023	1618	-	
HCM Lane V/C Ratio	-	-	0.015	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.2	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

HCM 6th TWSC  
7: Quintero Way & West Access

2022 Total PM.syn  
11/03/2020

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	12	2	0	13	2	0
Future Vol, veh/h	12	2	0	13	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	2	0	14	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	11	7	0	0	14	0
Stage 1	7	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1009	1075	-	-	1604	-
Stage 1	1016	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1008	1075	-	-	1604	-
Mov Cap-2 Maneuver	1008	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NE		SW		
HCM Control Delay, s	8.6	0		7.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT		
Capacity (veh/h)	-	-	1017	1604	-	
HCM Lane V/C Ratio	-	-	0.015	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.2	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	12	2	0	4	2	0
Future Vol, veh/h	12	2	0	4	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	2	0	4	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	6	2	0	0	4	0
Stage 1	2	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1015	1082	-	-	1618	-
Stage 1	1021	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1014	1082	-	-	1618	-
Mov Cap-2 Maneuver	1014	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NE		SW		
HCM Control Delay, s	8.6	0		7.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT		
Capacity (veh/h)	-	-	1023	1618	-	
HCM Lane V/C Ratio	-	-	0.015	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.2	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	4.5					
Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	11	2	0	13	2	0
Future Vol, veh/h	11	2	0	13	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	0	14	2	0
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	11	7	0	0	14	0
Stage 1	7	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1009	1075	-	-	1604	-
Stage 1	1016	-	-	-	-	-
Stage 2	1019	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1008	1075	-	-	1604	-
Mov Cap-2 Maneuver	1008	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Approach	WB	NE		SW		
HCM Control Delay, s	8.6	0		7.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NET	NERWBLn1	SWL	SWT		
Capacity (veh/h)	-	-	1018	1604	-	
HCM Lane V/C Ratio	-	-	0.014	0.001	-	
HCM Control Delay (s)	-	-	8.6	7.2	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑	↘		↑↑↑
Traffic Vol, veh/h	0	16	2449	99	0	1412
Future Vol, veh/h	0	16	2449	99	0	1412
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	2662	108	0	1535
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	1385	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	*355	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*355	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.7	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)		-	-	355	-	
HCM Lane V/C Ratio		-	-	0.049	-	
HCM Control Delay (s)		-	-	15.7	-	
HCM Lane LOS		-	-	C	-	
HCM 95th %tile Q(veh)		-	-	0.2	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘	↗ ↘ ↘			↗ ↘ ↘
Traffic Vol, veh/h	0	10	1384	66	0	2525
Future Vol, veh/h	0	10	1384	66	0	2525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	1504	72	0	2745

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	788	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*602	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*602	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	602
HCM Lane V/C Ratio	-	-	0.018
HCM Control Delay (s)	-	-	11.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

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

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	16	3487	99	0	1981
Future Vol, veh/h	0	16	3487	99	0	1981
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	3790	108	0	2153

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1949	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*96	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*96	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	50.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	96
HCM Lane V/C Ratio	-	-	0.181
HCM Control Delay (s)	-	-	50.6
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	0.6

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

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	10	1969	66	0	3583
Future Vol, veh/h	0	10	1969	66	0	3583
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2140	72	0	3895

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1106	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*464	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*464	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	464
HCM Lane V/C Ratio	-	-	0.023
HCM Control Delay (s)	-	-	12.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

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



Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑	↗		↑↑↑
Traffic Vol, veh/h	0	16	3487	99	0	1981
Future Vol, veh/h	0	16	3487	99	0	1981
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	3790	108	0	2153

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	-
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

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

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑	↗		↑↑↑
Traffic Vol, veh/h	0	10	1969	66	0	3583
Future Vol, veh/h	0	10	1969	66	0	3583
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	2140	72	0	3895

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	-
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

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

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	23	2525	103	0	1412
Future Vol, veh/h	0	23	2525	103	0	1412
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	2745	112	0	1535

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1429	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*335	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*335	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	335
HCM Lane V/C Ratio	-	-	0.075
HCM Control Delay (s)	-	-	16.6
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.2

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

HCM 6th TWSC  
9: Airport Blvd & South Access

2022 Total PM.syn  
11/03/2020

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑↑↑	↘		↑↑↑
Traffic Vol, veh/h	0	14	1436	80	0	2525
Future Vol, veh/h	0	14	1436	80	0	2525
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	1561	87	0	2745
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	824	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	*585	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-	-	-
Mov Cap-1 Maneuver	-	*585	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.3	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	585		-		
HCM Lane V/C Ratio	-	0.026		-		
HCM Control Delay (s)	-	11.3		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0.1		-		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	23	3563	103	0	1981
Future Vol, veh/h	0	23	3563	103	0	1981
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	3873	112	0	2153

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1993	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*96	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*96	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	55.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	96
HCM Lane V/C Ratio	-	-	0.26
HCM Control Delay (s)	-	-	55.2
HCM Lane LOS	-	-	F
HCM 95th %tile Q(veh)	-	-	1

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

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	14	2021	80	0	3583
Future Vol, veh/h	0	14	2021	80	0	3583
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	2197	87	0	3895

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	1142	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	*447	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*447	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	447
HCM Lane V/C Ratio	-	-	0.034
HCM Control Delay (s)	-	-	13.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

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

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	23	3563	103	0	1981
Future Vol, veh/h	0	23	3563	103	0	1981
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	3873	112	0	2153

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	-
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

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




Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↘ ↘ ↘	↗ ↘ ↘ ↘			↗ ↘ ↘ ↘
Traffic Vol, veh/h	0	14	2021	80	0	3583
Future Vol, veh/h	0	14	2021	80	0	3583
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	15	2197	87	0	3895

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	-	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	0	-
Stage 1	0	0	-
Stage 2	0	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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




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









Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	8	1	4	2
Future Vol, veh/h	2	4	8	1	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	9	1	4	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	24	5	6	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	19	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	992	1078	1615	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	986	1078	1615	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	6.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1615	-	1045	-	-	
HCM Lane V/C Ratio	0.005	-	0.006	-	-	
HCM Control Delay (s)	7.2	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

HCM 6th TWSC  
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Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	27	4	4	2
Future Vol, veh/h	2	4	27	4	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	29	4	4	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	67	5	6	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	938	1078	1615	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	921	1078	1615	-	-	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	6.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1615	-	1020	-	-	
HCM Lane V/C Ratio	0.018	-	0.006	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	8	1	4	2
Future Vol, veh/h	2	4	8	1	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	9	1	4	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	24	5	6	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	19	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	992	1078	1615	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	986	1078	1615	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.5	6.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1615	-	1045	-	-	
HCM Lane V/C Ratio	0.005	-	0.006	-	-	
HCM Control Delay (s)	7.2	0	8.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	27	4	4	2
Future Vol, veh/h	2	4	27	4	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	29	4	4	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	67	5	6	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	938	1078	1615	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	921	1078	1615	-	-	-
Mov Cap-2 Maneuver	921	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	6.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1615	-	1020	-	-	
HCM Lane V/C Ratio	0.018	-	0.006	-	-	
HCM Control Delay (s)	7.3	0	8.6	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0	-	-	




Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↓			↗
Traffic Vol, veh/h	0	767	1773	67	0	179
Future Vol, veh/h	0	767	1773	67	0	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	834	1927	73	0	195
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1000
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	*514
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*514
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		16.2		
HCM LOS				C		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	514		
HCM Lane V/C Ratio	-	-	-	0.379		
HCM Control Delay (s)	-	-	-	16.2		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	1.8		
Notes						
~: Volume exceeds capacity     \$: Delay exceeds 300s     +: Computation Not Defined     *: All major volume in platoon						




Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↓			↗
Traffic Vol, veh/h	0	1962	820	48	0	117
Future Vol, veh/h	0	1962	820	48	0	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2133	891	52	0	127
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	472
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	*740
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*740
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		10.9	
HCM LOS	B					
Minor Lane/Major Mvmt	EBT		WBT	WBR	SBLn1	
Capacity (veh/h)	-		-	-	740	
HCM Lane V/C Ratio	-		-	-	0.172	
HCM Control Delay (s)	-		-	-	10.9	
HCM Lane LOS	-		-	-	B	
HCM 95th %tile Q(veh)	-		-	-	0.6	
Notes						
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						




Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↓			↗
Traffic Vol, veh/h	0	1070	2501	67	0	179
Future Vol, veh/h	0	1070	2501	67	0	179
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1163	2718	73	0	195
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1396
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	*335
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*335
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		29.6		
HCM LOS	D					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	335		
HCM Lane V/C Ratio	-	-	-	0.581		
HCM Control Delay (s)	-	-	-	29.6		
HCM Lane LOS	-	-	-	D		
HCM 95th %tile Q(veh)	-	-	-	3.5		
Notes						
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						




Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↓			↗
Traffic Vol, veh/h	0	2757	1134	48	0	117
Future Vol, veh/h	0	2757	1134	48	0	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2997	1233	52	0	127
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	643
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	*654
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		1
Mov Cap-1 Maneuver	-	-	-	-	-	*654
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		11.8		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	654		
HCM Lane V/C Ratio	-	-	-	0.194		
HCM Control Delay (s)	-	-	-	11.8		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.7		
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon



Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	2	2	346	7	2
Future Vol, veh/h	101	2	2	346	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	2	2	376	8	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	491	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1478	-	537	942
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1478	-	536	942
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	690	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	643	-	-	1478	-	
HCM Lane V/C Ratio	0.015	-	-	0.001	-	
HCM Control Delay (s)	10.7	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	269	7	2	90	4	2
Future Vol, veh/h	269	7	2	90	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	292	8	2	98	4	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	300	0	398	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1261	-	607	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1261	-	606	743
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	920	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	675	-	-	1261	-	
HCM Lane V/C Ratio	0.01	-	-	0.002	-	
HCM Control Delay (s)	10.4	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	106	2	2	478	7	2
Future Vol, veh/h	106	2	2	478	7	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	2	2	520	8	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	117	0	640	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1471	-	440	936
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1471	-	439	936
Mov Cap-2 Maneuver	-	-	-	-	507	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	593	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	564	-	-	1471	-	
HCM Lane V/C Ratio	0.017	-	-	0.001	-	
HCM Control Delay (s)	11.5	-	-	7.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	348	7	2	116	4	2
Future Vol, veh/h	348	7	2	116	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	378	8	2	126	4	2
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	386	0	512	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	130	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1172	-	522	665
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	896	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1172	-	521	665
Mov Cap-2 Maneuver	-	-	-	-	582	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	894	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		11		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	607	-	-	1172	-	
HCM Lane V/C Ratio	0.011	-	-	0.002	-	
HCM Control Delay (s)	11	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
13: Middle Access & Quintero Way

2022 Total AM.syn  
01/05/2021

Intersection

Int Delay, s/veh 6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	0	2	4
Future Vol, veh/h	0	2	1	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	1	0	2	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1620
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1620
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.5
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1027	-	-	1620	-
HCM Lane V/C Ratio	0.006	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC  
13: Middle Access & Quintero Way /Quintero Way

2022 Total PM.syn  
01/05/2021

Intersection

Int Delay, s/veh 6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	0	2	4
Future Vol, veh/h	0	2	4	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	4	0	2	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1620
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1620
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.5
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1025	-	-	1620	-
HCM Lane V/C Ratio	0.006	-	-	0.003	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC  
13: Middle Access & Quintero Way /Quintero Way

2040 Total AM.syn  
01/05/2021

Intersection




Int Delay, s/veh 6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	2	1	0	2	4
Future Vol, veh/h	0	2	1	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	1	0	2	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1620
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1620
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1027	-	-	1620	-
HCM Lane V/C Ratio	0.006	-	-	0.001	-
HCM Control Delay (s)	8.5	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	6.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	2	4	0	2	4
Future Vol, veh/h	0	2	4	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	2	4	0	2	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	9	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	8	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1620	-	1011	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1015	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	1009	1084
Mov Cap-2 Maneuver	-	-	-	-	1009	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1013	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		7.2		8.4	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1058	-	-	1620	-	
HCM Lane V/C Ratio	0.006	-	-	0.003	-	
HCM Control Delay (s)	8.4	-	-	7.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	



Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	10	52	0	8	8	332	10	3	113	2
Future Vol, veh/h	2	0	10	52	0	8	8	332	10	3	113	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	11	57	0	9	9	361	11	3	123	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	519	520	124	521	516	367	125	0	0	372	0	0
Stage 1	130	130	-	385	385	-	-	-	-	-	-	-
Stage 2	389	390	-	136	131	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	576	527	927	574	531	*812	1462	-	-	*1215	-	-
Stage 1	874	789	-	756	664	-	-	-	-	-	-	-
Stage 2	751	659	-	867	788	-	-	-	-	-	-	-
Platoon blocked, %	1	1		1	1	1		-	-	1	-	-
Mov Cap-1 Maneuver	565	521	927	563	525	*812	1462	-	-	*1215	-	-
Mov Cap-2 Maneuver	615	555	-	617	559	-	-	-	-	-	-	-
Stage 1	867	787	-	750	659	-	-	-	-	-	-	-
Stage 2	737	654	-	854	786	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	9.3		11.3			0.2			0.2			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1462	-	-	855	637	*1215	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.015	0.102	0.003	-	-				
HCM Control Delay (s)	7.5	0	-	9.3	11.3	8	0	-				
HCM Lane LOS	A	A	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-				
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	6	49	0	8	25	91	36	9	259	2
Future Vol, veh/h	2	0	6	49	0	8	25	91	36	9	259	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	7	53	0	9	27	99	39	10	282	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	480	495	283	480	477	119	284	0	0	138	0	0
Stage 1	303	303	-	173	173	-	-	-	-	-	-	-
Stage 2	177	192	-	307	304	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	516	487	756	516	499	984	1278	-	-	1463	-	-
Stage 1	706	664	-	866	774	-	-	-	-	-	-	-
Stage 2	862	758	-	703	663	-	-	-	-	-	-	-
Platoon blocked, %	1	1		1	1	1		-	-	1	-	-
Mov Cap-1 Maneuver	500	472	756	500	484	984	1278	-	-	1463	-	-
Mov Cap-2 Maneuver	566	530	-	558	529	-	-	-	-	-	-	-
Stage 1	690	659	-	847	756	-	-	-	-	-	-	-
Stage 2	835	740	-	691	658	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		11.8		1.3		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1278	-	-	697	594	1463	-
HCM Lane V/C Ratio	0.021	-	-	0.012	0.104	0.007	-
HCM Control Delay (s)	7.9	0	-	10.2	11.8	7.5	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	0.3	0	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	10	52	0	8	8	463	10	3	118	2
Future Vol, veh/h	2	0	10	52	0	8	8	463	10	3	118	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	11	57	0	9	9	503	11	3	128	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	666	667	129	668	663	509	130	0	0	514	0	0
Stage 1	135	135	-	527	527	-	-	-	-	-	-	-
Stage 2	531	532	-	141	136	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	*489	*447	921	*486	*451	*692	1455	-	-	*1035	-	-
Stage 1	*868	*785	-	*652	*571	-	-	-	-	-	-	-
Stage 2	*652	*571	-	*862	*784	-	-	-	-	-	-	-
Platoon blocked, %	1	1		1	1	1		-	-	1	-	-
Mov Cap-1 Maneuver	*478	*441	921	*476	*445	*692	1455	-	-	*1035	-	-
Mov Cap-2 Maneuver	*538	*485	-	*540	*487	-	-	-	-	-	-	-
Stage 1	*860	*783	-	*646	*566	-	-	-	-	-	-	-
Stage 2	*638	*566	-	*849	*782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		12.3		0.1		0.2	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1455	-	-	823	556	*1035	-
HCM Lane V/C Ratio	0.006	-	-	0.016	0.117	0.003	-
HCM Control Delay (s)	7.5	0	-	9.4	12.3	8.5	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	-

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

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	6	49	0	8	25	117	36	9	338	2
Future Vol, veh/h	2	0	6	49	0	8	25	117	36	9	338	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	7	53	0	9	27	127	39	10	367	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	593	608	368	593	590	147	369	0	0	166	0	0
Stage 1	388	388	-	201	201	-	-	-	-	-	-	-
Stage 2	205	220	-	392	389	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	418	677	434	429	964	1190	-	-	1433	-	-
Stage 1	636	609	-	848	757	-	-	-	-	-	-	-
Stage 2	843	741	-	633	608	-	-	-	-	-	-	-
Platoon blocked, %	1	1		1	1	1		-	-	1	-	-
Mov Cap-1 Maneuver	419	404	677	419	415	964	1190	-	-	1433	-	-
Mov Cap-2 Maneuver	503	480	-	494	477	-	-	-	-	-	-	-
Stage 1	620	604	-	827	738	-	-	-	-	-	-	-
Stage 2	815	723	-	621	603	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.9		12.7			1.1			0.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1190	-	-	623	530	1433	-	-				
HCM Lane V/C Ratio	0.023	-	-	0.014	0.117	0.007	-	-				
HCM Control Delay (s)	8.1	0	-	10.9	12.7	7.5	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0	0.4	0	-	-				

# APPENDIX D

## Signal Warrant Analysis

## Daily Vehicle Volume Report

Study Date: Tuesday, 02/25/2020

Unit ID: RDC 19

Location: Alameda and Richfield, Aurora, CO

Comments: Eastbound Approach

	Eastbound Volume
00:00 - 00:59	119
01:00 - 01:59	82
02:00 - 02:59	62
03:00 - 03:59	50
04:00 - 04:59	118
05:00 - 05:59	242
06:00 - 06:59	307
07:00 - 07:59	653
08:00 - 08:59	529
09:00 - 09:59	424
10:00 - 10:59	455
11:00 - 11:59	497
12:00 - 12:59	581
13:00 - 13:59	572
14:00 - 14:59	837
15:00 - 15:59	1327
16:00 - 16:59	1592
17:00 - 17:59	1628
18:00 - 18:59	980
19:00 - 19:59	702
20:00 - 20:59	607
21:00 - 21:59	480
22:00 - 22:59	298
23:00 - 23:59	199
Totals	13341
AM Peak Time	07:13 - 08:12
AM Peak Volume	704
PM Peak Time	16:33 - 17:32
PM Peak Volume	1763

## Daily Vehicle Volume Report

Study Date: Wednesday, 02/26/2020

Unit ID: RDC 19

Location: Alameda and Richfield, Aurora, CO

Comments: Eastbound Approach

	Eastbound Volume
00:00 - 00:59	121
01:00 - 01:59	70
02:00 - 02:59	58
03:00 - 03:59	55
04:00 - 04:59	95
05:00 - 05:59	235
06:00 - 06:59	308
07:00 - 07:59	665
08:00 - 08:59	491
09:00 - 09:59	420
10:00 - 10:59	494
11:00 - 11:59	580
12:00 - 12:59	659
13:00 - 13:59	640
14:00 - 14:59	870
15:00 - 15:59	1220
16:00 - 16:59	1634
17:00 - 17:59	1631
18:00 - 18:59	1182
19:00 - 19:59	762
20:00 - 20:59	650
21:00 - 21:59	517
22:00 - 22:59	331
23:00 - 23:59	217
Totals	13905
AM Peak Time	07:13 - 08:12
AM Peak Volume	706
PM Peak Time	16:40 - 17:39
PM Peak Volume	1733

## Daily Vehicle Volume Report

Study Date: Thursday, 02/27/2020

Unit ID: RDC 19

Location: Alameda and Richfield, Aurora, CO

Comments: Eastbound Approach

	Eastbound Volume
00:00 - 00:59	132
01:00 - 01:59	75
02:00 - 02:59	54
03:00 - 03:59	46
04:00 - 04:59	99
05:00 - 05:59	249
06:00 - 06:59	324
07:00 - 07:59	760
08:00 - 08:59	541
09:00 - 09:59	436
10:00 - 10:59	490
11:00 - 11:59	548
12:00 - 12:59	676
13:00 - 13:59	708
14:00 - 14:59	919
15:00 - 15:59	1243
16:00 - 16:59	1641
17:00 - 17:59	1690
18:00 - 18:59	1085
19:00 - 19:59	755
20:00 - 20:59	651
21:00 - 21:59	487
22:00 - 22:59	333
23:00 - 23:59	196
<b>Totals</b>	<b>14138</b>
<b>AM Peak Time</b>	<b>07:06 - 08:05</b>
<b>AM Peak Volume</b>	<b>794</b>
<b>PM Peak Time</b>	<b>16:39 - 17:38</b>
<b>PM Peak Volume</b>	<b>1785</b>



## Daily Vehicle Volume Report

Study Date: Tuesday, 02/25/2020

Unit ID: RDC 8

Location: Alameda and Richfield, Aurora, CO

Comments: Westbound Approach

	Westbound Volume
00:00 - 00:59	65
01:00 - 01:59	48
02:00 - 02:59	76
03:00 - 03:59	126
04:00 - 04:59	248
05:00 - 05:59	710
06:00 - 06:59	1296
07:00 - 07:59	1446
08:00 - 08:59	1068
09:00 - 09:59	667
10:00 - 10:59	520
11:00 - 11:59	556
12:00 - 12:59	522
13:00 - 13:59	556
14:00 - 14:59	540
15:00 - 15:59	626
16:00 - 16:59	660
17:00 - 17:59	639
18:00 - 18:59	628
19:00 - 19:59	408
20:00 - 20:59	293
21:00 - 21:59	251
22:00 - 22:59	155
23:00 - 23:59	101
Totals	12205
AM Peak Time	06:53 - 07:52
AM Peak Volume	1473
PM Peak Time	17:19 - 18:18
PM Peak Volume	683

## Daily Vehicle Volume Report

Study Date: Wednesday, 02/26/2020

Unit ID: RDC 8

Location: Alameda and Richfield, Aurora, CO

Comments: Westbound Approach

	Westbound Volume
00:00 - 00:59	48
01:00 - 01:59	43
02:00 - 02:59	59
03:00 - 03:59	105
04:00 - 04:59	271
05:00 - 05:59	756
06:00 - 06:59	1333
07:00 - 07:59	1685
08:00 - 08:59	1213
09:00 - 09:59	719
10:00 - 10:59	619
11:00 - 11:59	585
12:00 - 12:59	533
13:00 - 13:59	561
14:00 - 14:59	651
15:00 - 15:59	684
16:00 - 16:59	742
17:00 - 17:59	694
18:00 - 18:59	671
19:00 - 19:59	447
20:00 - 20:59	391
21:00 - 21:59	302
22:00 - 22:59	193
23:00 - 23:59	109
<b>Totals</b>	<b>13414</b>
<b>AM Peak Time</b>	<b>06:58 - 07:57</b>
<b>AM Peak Volume</b>	<b>1696</b>
<b>PM Peak Time</b>	<b>16:05 - 17:04</b>
<b>PM Peak Volume</b>	<b>754</b>

## Daily Vehicle Volume Report

Study Date: Thursday, 02/27/2020

Unit ID: RDC 8

Location: Alameda and Richfield, Aurora, CO

Comments: Westbound Approach

	Westbound Volume
00:00 - 00:59	57
01:00 - 01:59	61
02:00 - 02:59	83
03:00 - 03:59	139
04:00 - 04:59	322
05:00 - 05:59	776
06:00 - 06:59	1387
07:00 - 07:59	1709
08:00 - 08:59	1228
09:00 - 09:59	715
10:00 - 10:59	592
11:00 - 11:59	622
12:00 - 12:59	606
13:00 - 13:59	596
14:00 - 14:59	637
15:00 - 15:59	713
16:00 - 16:59	719
17:00 - 17:59	740
18:00 - 18:59	695
19:00 - 19:59	377
20:00 - 20:59	376
21:00 - 21:59	277
22:00 - 22:59	194
23:00 - 23:59	116
Totals	13737
AM Peak Time	06:48 - 07:47
AM Peak Volume	1747
PM Peak Time	16:50 - 17:49
PM Peak Volume	772



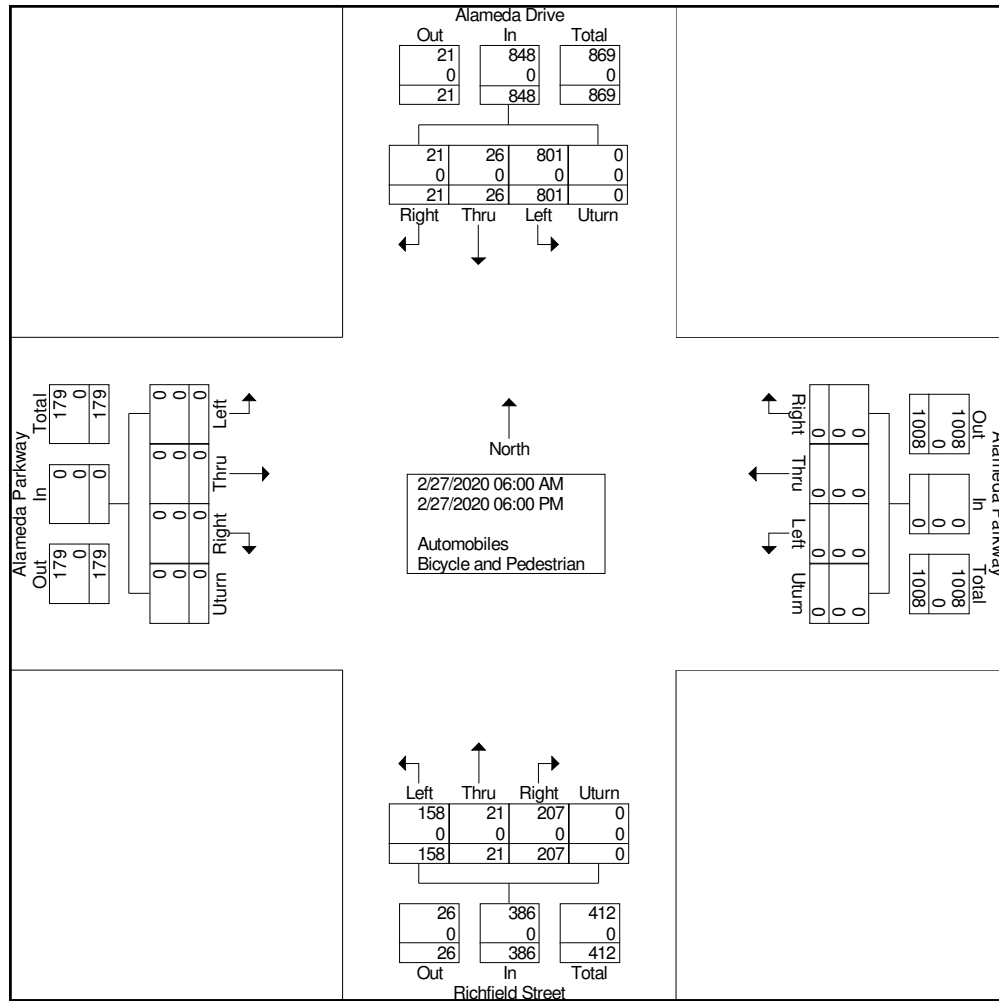
File Name : Alameda Pkwy and Richfield Thurs  
Site Code : IPO 491  
Start Date : 2/27/2020  
Page No : 1



Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
13 Hour Counts - Thursday  
Alameda Pkwy and Richfield St/Alameda Dr

File Name : Alameda Pkwy and Richfield Thurs  
Site Code : IPO 491  
Start Date : 2/27/2020  
Page No : 2



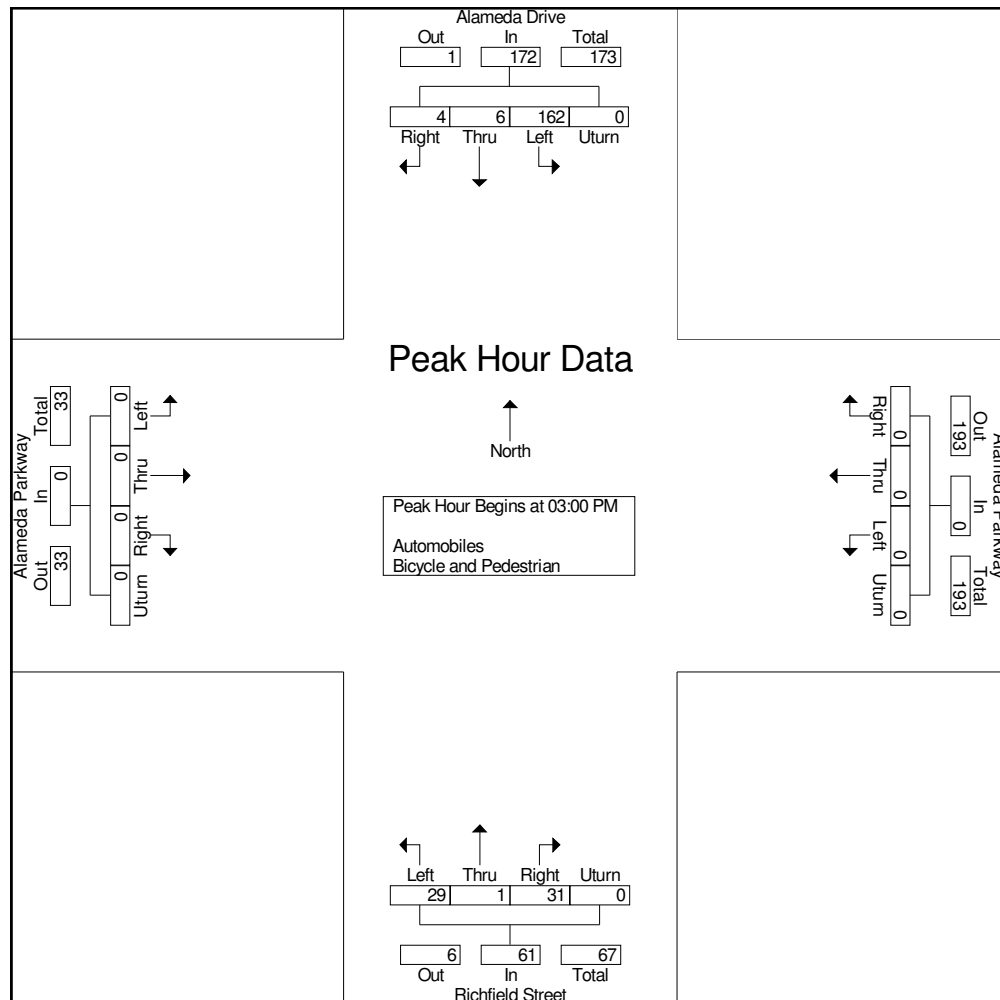


Ridgeview Data  
Collection

Aurora, CO  
NEC Airport & Alameda  
13 Hour Counts - Thursday  
Alameda Pkwy and Richfield St/Alameda Dr

File Name : Alameda Pkwy and Richfield Thurs  
Site Code : IPO 491  
Start Date : 2/27/2020  
Page No : 3

	Alameda Parkway Eastbound					Alameda Parkway Westbound					Richfield Street Northbound					Alameda Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 06:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	0	0	0	0	29	1	31	0	61	162	6	4	0	172	233
Total Volume	0	0	0	0	0	0	0	0	0	0	29	1	31	0	61	162	6	4	0	172	233
% App. Total	0	0	0	0		0	0	0	0		47.5	1.6	50.8	0		94.2	3.5	2.3	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.0	1.0	1.0	.000	1.00	1.0	1.0	1.0	.000	1.00	1.00
											0	0	0			0	0	0			



# TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

## Manual on Uniform Traffic Control Devices (2009 Edition)

CONDITION: **2020 Existing Traffic** COUNT DATE: **2/25/2020**  
 INTERSECTION NAME: **Alameda Parkway and Alameda Drive/Richfield Street**  
 MAJOR STREET: **Alameda Parkway** # OF APPROACH LANI **3**  
 MINOR STREET: **Alameda Drive/Richfield Street** # OF APPROACH LANI **1**  
 ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**  
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

			MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3	
					MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET			
THRESHOLD VALUES					600	150		900	75				
06:00 AM	TO	07:00 AM	1,711	6	Y			Y					
07:00 AM	TO	08:00 AM	2,469	25	Y			Y					
08:00 AM	TO	09:00 AM	1,769	22	Y			Y					
09:00 AM	TO	10:00 AM	1,151	27	Y			Y					
10:00 AM	TO	11:00 AM	1,082	27	Y			Y					
11:00 AM	TO	12:00 PM	1,170	27	Y			Y					
12:00 PM	TO	01:00 PM	1,282	36	Y			Y					
01:00 PM	TO	02:00 PM	1,304	41	Y			Y					
02:00 PM	TO	03:00 PM	1,556	65	Y			Y					
03:00 PM	TO	04:00 PM	1,956	170	Y	Y	Y	Y	Y	Y	Y	Y	
04:00 PM	TO	05:00 PM	2,360	159	Y	Y	Y	Y	Y	Y	Y	Y	
05:00 PM	TO	06:00 PM	2,430	134	Y			Y	Y	Y	Y	Y	
06:00 PM	TO	07:00 PM	1,780	76	Y			Y	Y	Y			
07:00 PM	TO	08:00 PM	1,132	0	Y			Y					
08:00 PM	TO	09:00 PM	1,027	0	Y			Y					
09:00 PM	TO	10:00 PM	764	0	Y								
			24,943	813	2			4			3	3	
						8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			4 HRS NEEDED NOT SATISFIED	1 HR NEEDED SATISFIED

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

# TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

## Manual on Uniform Traffic Control Devices (2009 Edition)

CONDITION: **2022 Background Traffic**
COUNT DATE: **2/25/2020**  
 INTERSECTION NAME: **Alameda Parkway and Alameda Drive/Richfield Street**  
 MAJOR STREET: **Alameda Parkway**
# OF APPROACH LANI **3**  
 MINOR STREET: **Alameda Drive/Richfield Street**
# OF APPROACH LANI **1**  
 ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**  
 85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

				MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3
						MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES					600	150		900	75				
06:00 AM	TO	07:00 AM	1,780	14	Y			Y					
07:00 AM	TO	08:00 AM	2,569	48	Y			Y					
08:00 AM	TO	09:00 AM	1,840	25	Y			Y					
09:00 AM	TO	10:00 AM	1,198	28	Y			Y					
10:00 AM	TO	11:00 AM	1,126	28	Y			Y					
11:00 AM	TO	12:00 PM	1,217	28	Y			Y					
12:00 PM	TO	01:00 PM	1,334	37	Y			Y					
01:00 PM	TO	02:00 PM	1,357	43	Y			Y					
02:00 PM	TO	03:00 PM	1,619	67	Y			Y					
03:00 PM	TO	04:00 PM	2,035	177	Y	Y	Y	Y	Y	Y	Y	Y	
04:00 PM	TO	05:00 PM	2,455	165	Y	Y	Y	Y	Y	Y	Y	Y	
05:00 PM	TO	06:00 PM	2,528	139	Y			Y	Y	Y	Y	Y	
06:00 PM	TO	07:00 PM	1,852	79	Y			Y	Y	Y			
07:00 PM	TO	08:00 PM	1,178	0	Y			Y					
08:00 PM	TO	09:00 PM	1,068	0	Y			Y					
09:00 PM	TO	10:00 PM	795	0	Y								
					25,951	877	2		4		3	3	
					8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED		4 HRS NEEDED NOT SATISFIED	1 HR NEEDED SATISFIED		

WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3



# TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

## Manual on Uniform Traffic Control Devices (2009 Edition)

CONDITION: **2022 Background Plus Project Traffic**  
 INTERSECTION NAME: **Alameda Parkway and Alameda Drive/Richfield Street**  
 MAJOR STREET: **Alameda Parkway**

COUNT DATE: **2/25/2020**

MINOR STREET: **Alameda Drive/Richfield Street**

# OF APPROACH LANI **3**

# OF APPROACH LANI **1**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

				MAJOR ST BOTH APPROACHES	MINOR ST HIGHEST APPROACH	Warrant 1 - Condition A			Warrant 1 - Condition B			WARRANT 2	WARRANT 3	
						MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET			
THRESHOLD VALUES					600	150		900	75					
06:00 AM	TO	07:00 AM	1,780	49	Y			Y						
07:00 AM	TO	08:00 AM	2,569	71	Y			Y						
08:00 AM	TO	09:00 AM	1,840	66	Y			Y						
09:00 AM	TO	10:00 AM	1,198	66	Y			Y						
10:00 AM	TO	11:00 AM	1,126	60	Y			Y						
11:00 AM	TO	12:00 PM	1,217	60	Y			Y						
12:00 PM	TO	01:00 PM	1,334	75	Y			Y	Y	Y				
01:00 PM	TO	02:00 PM	1,357	70	Y			Y						
02:00 PM	TO	03:00 PM	1,619	94	Y			Y	Y	Y	Y			
03:00 PM	TO	04:00 PM	2,035	209	Y	Y	Y	Y	Y	Y	Y	Y		
04:00 PM	TO	05:00 PM	2,455	208	Y	Y	Y	Y	Y	Y	Y	Y		
05:00 PM	TO	06:00 PM	2,528	177	Y	Y	Y	Y	Y	Y	Y	Y		
06:00 PM	TO	07:00 PM	1,852	122	Y			Y	Y	Y	Y	Y		
07:00 PM	TO	08:00 PM	1,178	0	Y			Y						
08:00 PM	TO	09:00 PM	1,068	0	Y			Y						
09:00 PM	TO	10:00 PM	795	0	Y									
					25,951	1,327	3			6			5	4
					8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			4 HRS NEEDED SATISFIED	1 HR NEEDED SATISFIED		

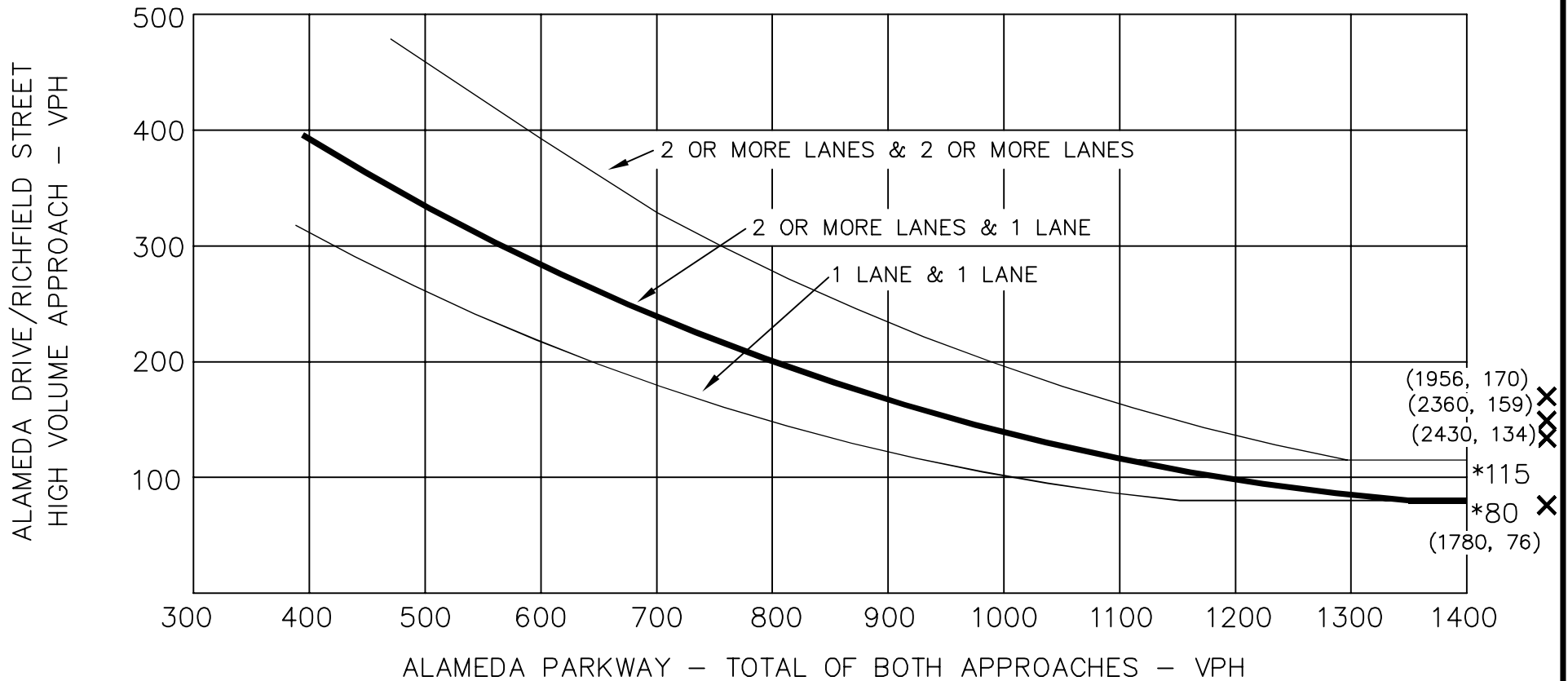
WARRANT 1 - Condition A -- Minimum Vehicular Volume Warrant (8 hours)

WARRANT 1 - Condition B -- Interruption of Continuous Traffic Warrant (8 hours)

WARRANT 2 -- Four Hour Volume Warrant - Figure 4C-1

WARRANT 3 -- Peak Hour Volume Warrant - Figure 4C-3

## WARRANT 2 - FOUR HOUR VEHICULAR VOLUME 2020 EXISTING TRAFFIC



✕ 2020 EXISTING TRAFFIC DATA POINT

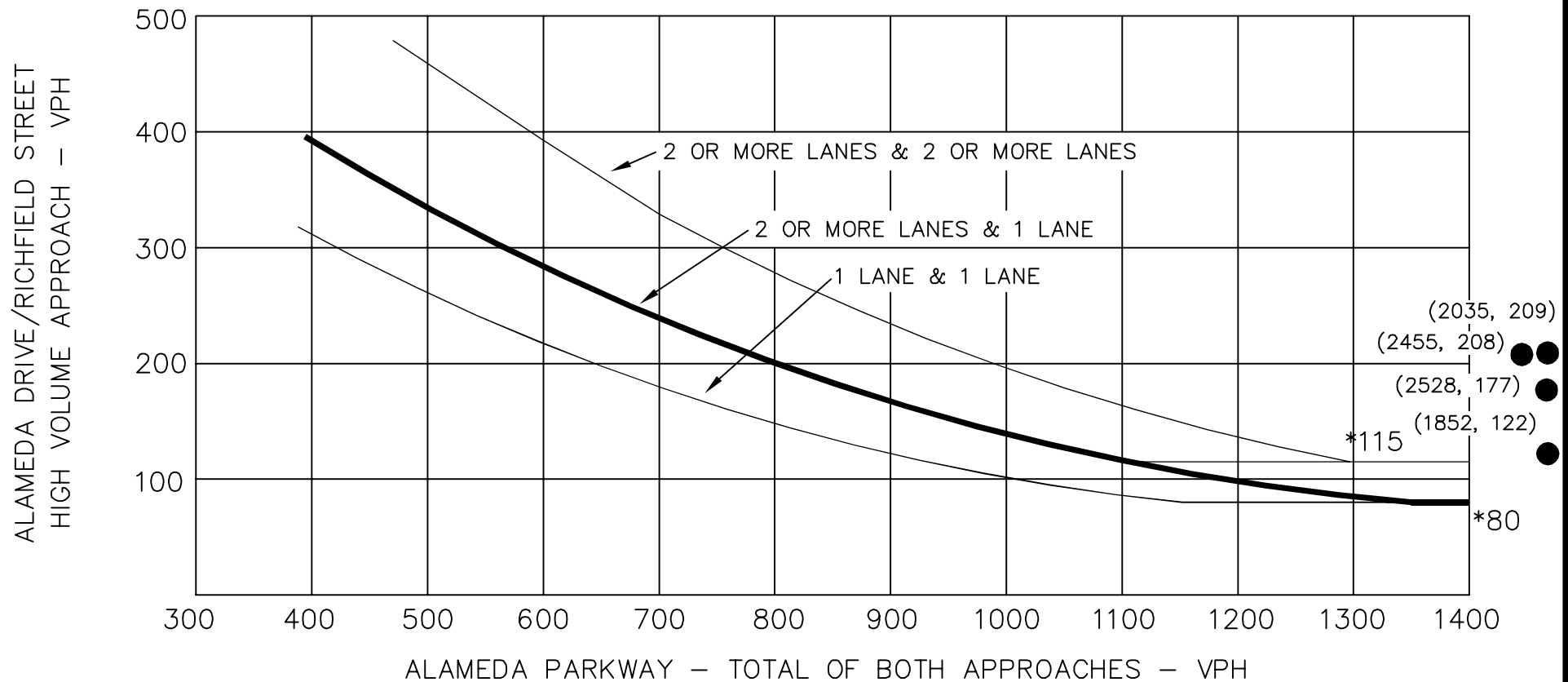
\* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

ALAMEDA PARKWAY AND  
ALAMEDA DRIVE/RICHFIELD STREET (#3)  
FOUR HOUR VOLUME WARRANT

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE A1

## WARRANT 2 - FOUR HOUR VEHICULAR VOLUME 2022 TOTAL TRAFFIC



● 2022 TOTAL TRAFFIC DATA POINT

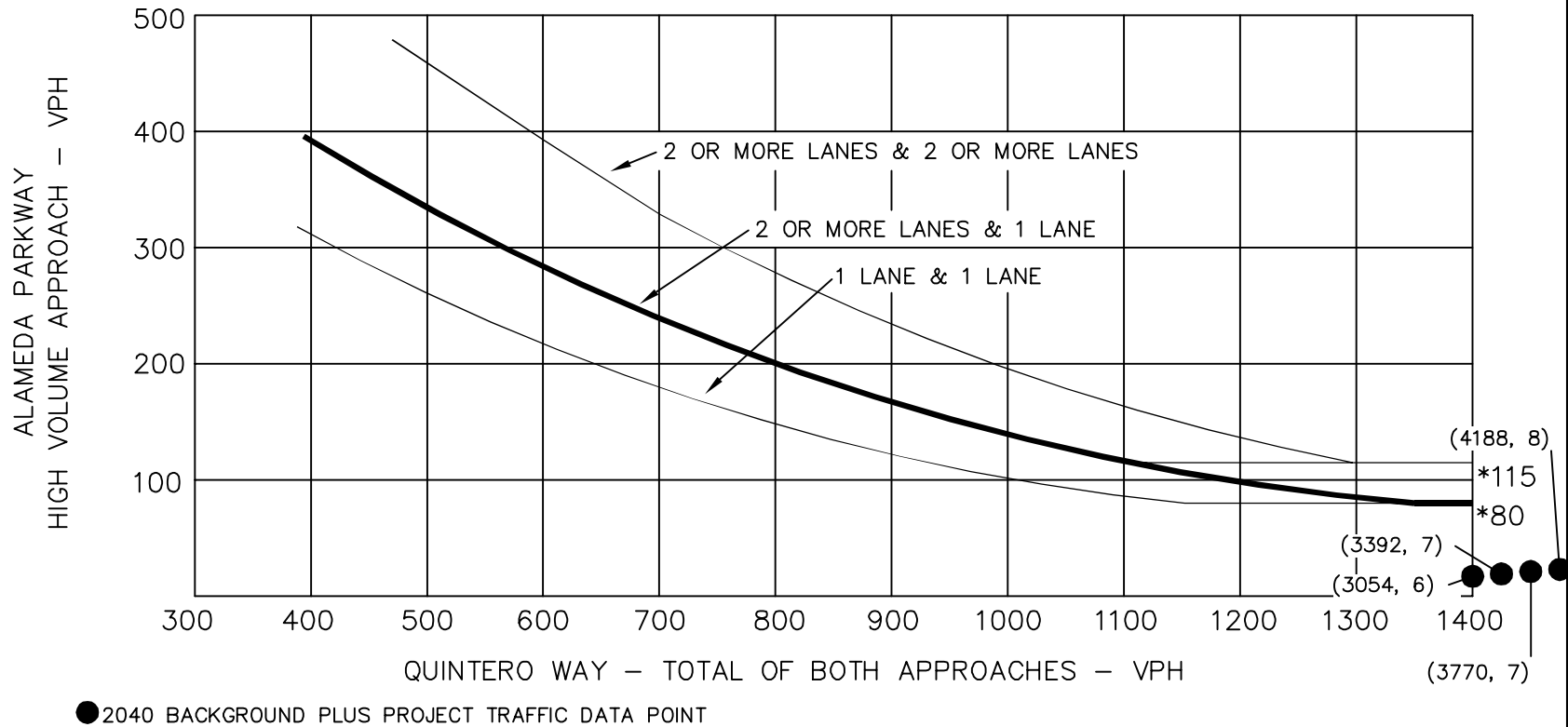
\* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

ALAMEDA PARKWAY AND  
ALAMEDA DRIVE/RICHFIELD STREET (#3)  
FOUR HOUR VOLUME WARRANT

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE A2

# WARRANT 2 - FOUR HOUR VEHICULAR VOLUME 2040 BACKGROUND PLUS PROJECT TRAFFIC



ALAMEDA PARKWAY AND  
QUINTERO WAY (#5)  
FOUR HOUR VOLUME WARRANT

\* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET  
APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER  
THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: Manual of Uniform Traffic Control Devices 2009

FIGURE A1

# APPENDIX E

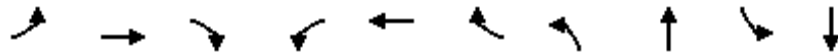
## Queuing Analysis Worksheets

## Queues

2022 Total AM Improved.syn

## 1: Airport Blvd &amp; Alameda Dr

11/04/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	200	2	248	41	107	361	192	2473	90	1559
v/c Ratio	0.61	0.00	0.41	0.15	0.30	0.92	0.72	0.84	0.66	0.59
Control Delay	51.9	36.0	8.0	50.1	53.4	67.6	35.7	30.5	50.6	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.9	36.0	8.0	50.1	53.4	67.6	35.7	30.5	50.6	25.7
Queue Length 50th (ft)	154	1	12	33	89	239	85	755	37	380
Queue Length 95th (ft)	167	8	12	69	89	300	113	826	#94	471
Internal Link Dist (ft)		267			228			375		628
Turn Bay Length (ft)	75		75	100		150	250		250	
Base Capacity (vph)	328	578	643	304	403	435	333	2935	139	2622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.00	0.39	0.13	0.27	0.83	0.58	0.84	0.65	0.59

## Intersection Summary

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

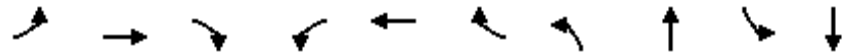
Queue shown is maximum after two cycles.

## Queues

2022 Total PM Improved.syn

## 1: Airport Blvd &amp; Alameda Dr

11/04/2020



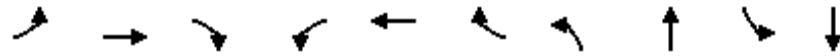
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	146	21	107	85	25	123	49	1502	313	2599
v/c Ratio	0.59	0.06	0.28	0.60	0.13	0.45	0.33	0.56	0.75	0.77
Control Delay	55.7	40.7	10.8	72.5	52.4	13.4	21.8	23.6	35.2	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	40.7	10.8	72.5	52.4	13.4	21.8	23.6	35.2	18.5
Queue Length 50th (ft)	109	15	5	70	19	0	10	300	152	534
Queue Length 95th (ft)	104	25	5	41	22	7	17	439	202	709
Internal Link Dist (ft)		267			228			375		628
Turn Bay Length (ft)	75		75	100		150	250		250	
Base Capacity (vph)	246	462	463	213	288	351	157	2668	515	3359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.05	0.23	0.40	0.09	0.35	0.31	0.56	0.61	0.77
Intersection Summary										

## Queues

2040 Total AM.syn

11/03/2020

## 1: Airport Blvd &amp; Alameda Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	207	2	255	41	93	430	213	3592	85	2175
v/c Ratio	0.77	0.00	0.51	0.17	0.28	1.17	0.87	1.11	0.79	0.78
Control Delay	71.3	43.5	20.2	54.5	56.2	139.0	73.4	81.9	70.4	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	71.3	43.5	20.2	54.5	56.2	139.0	73.4	81.9	70.4	28.3
Queue Length 50th (ft)	176	2	68	34	80	~406	154	~1466	32	600
Queue Length 95th (ft)	#287	9	161	73	137	#626	#283	#1522	#131	664
Internal Link Dist (ft)		267			228			375		628
Turn Bay Length (ft)	75		75	100		100	250		250	
Base Capacity (vph)	269	447	503	248	329	369	267	3237	108	2777
Starvation Cap Reductn	0	0	0	0	0	0	0	95	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.00	0.51	0.17	0.28	1.17	0.80	1.14	0.79	0.78

## 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.

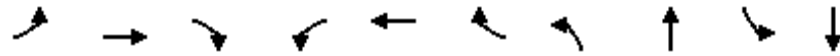


## Queues

2040 Total PM.syn

11/03/2020

## 1: Airport Blvd &amp; Alameda Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	16	92	33	15	105	46	2105	352	3915
v/c Ratio	0.81	0.06	0.32	0.36	0.12	0.47	0.32	0.74	0.85	1.07
Control Delay	87.0	47.7	13.5	68.1	57.8	12.9	21.3	25.3	56.7	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	47.7	13.5	68.1	57.8	12.9	21.3	25.3	56.7	56.7
Queue Length 50th (ft)	102	12	3	27	12	0	7	478	233	~1358
Queue Length 95th (ft)	#182	34	52	62	35	39	31	635	337	#1489
Internal Link Dist (ft)		267			228			375		628
Turn Bay Length (ft)	75		75	100		100	250		250	
Base Capacity (vph)	160	394	399	192	257	327	143	2828	445	3666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.04	0.23	0.17	0.06	0.32	0.32	0.74	0.79	1.07

## 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.

## Queues

2022 Total AM Improved.syn

## 2: Airport Blvd &amp; Alameda Pkwy

11/11/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	386	485	256	151	1246	736	443	1945	438	951	239
v/c Ratio	1.08	0.33	0.33	0.46	0.97	0.47	0.75	1.01	1.02	0.56	0.33
Control Delay	125.7	37.0	13.8	32.6	59.8	0.8	59.4	62.0	103.8	37.6	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.7	37.0	13.8	32.6	59.8	0.8	59.4	62.0	103.8	37.6	15.1
Queue Length 50th (ft)	~187	117	83	72	339	0	185	~604	~201	238	73
Queue Length 95th (ft)	#290	121	67	m105	#478	0	204	557	#303	293	124
Internal Link Dist (ft)		865			285			525		254	
Turn Bay Length (ft)	400		325	400		300	400		400		500
Base Capacity (vph)	356	1474	836	329	1279	1564	752	1933	430	1701	735
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.33	0.31	0.46	0.97	0.47	0.59	1.01	1.02	0.56	0.33

## 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.

## Queues

2022 Total PM Improved.syn

## 2: Airport Blvd &amp; Alameda Pkwy

11/11/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	330	1176	346	124	620	372	311	1079	859	1604	269
v/c Ratio	0.76	0.89	0.54	0.70	0.59	0.24	0.75	0.79	0.90	0.74	0.30
Control Delay	75.3	62.9	28.1	81.7	81.5	0.3	75.0	56.0	65.6	39.2	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	62.9	28.1	81.7	81.5	0.3	75.0	56.0	65.6	39.2	14.3
Queue Length 50th (ft)	162	406	191	107	202	0	153	369	412	487	107
Queue Length 95th (ft)	212	468	246	151	229	0	183	398	497	560	163
Internal Link Dist (ft)		865			285			525		254	
Turn Bay Length (ft)	400		325	400		300	400		400		500
Base Capacity (vph)	487	1342	667	185	1047	1564	473	1368	995	2168	907
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.88	0.52	0.67	0.59	0.24	0.66	0.79	0.86	0.74	0.30

## Intersection Summary

## Queues

2040 Total AM.syn

11/05/2020

## 2: Airport Blvd &amp; Alameda Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	526	543	235	140	1745	1027	547	2365	596	1262	297
v/c Ratio	1.48	0.42	0.33	0.69	1.29	0.66	0.95	1.25	1.46	0.76	0.40
Control Delay	269.3	42.3	15.7	52.8	183.1	2.3	80.8	152.4	258.8	43.1	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	269.3	42.3	15.7	52.8	183.1	2.3	80.8	152.4	258.8	43.1	14.3
Queue Length 50th (ft)	~313	141	74	115	~705	0	238	~913	~353	349	87
Queue Length 95th (ft)	#428	185	141	m127	#805	m11	#348	#1006	#470	406	156
Internal Link Dist (ft)		865			285			525		254	
Turn Bay Length (ft)	400		400	400		300	400		400		400
Base Capacity (vph)	356	1292	711	250	1349	1564	575	1893	409	1650	742
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.48	0.42	0.33	0.56	1.29	0.66	0.95	1.25	1.46	0.76	0.40

## 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.

## Queues

2040 Total PM.syn

## 2: Airport Blvd &amp; Alameda Pkwy

11/05/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	417	1707	438	124	735	502	377	1358	1247	2252	396
v/c Ratio	0.87	1.16	0.66	1.09	0.77	0.32	1.04	1.07	1.20	0.99	0.42
Control Delay	82.4	125.9	32.9	151.6	71.1	1.2	120.9	99.5	143.1	57.6	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.4	125.9	32.9	151.6	71.1	1.2	120.9	99.5	143.1	57.6	14.4
Queue Length 50th (ft)	208	~720	274	~115	276	17	~204	~538	~759	790	163
Queue Length 95th (ft)	#290	#816	395	#231	324	37	#311	#638	#897	#916	233
Internal Link Dist (ft)		865			285			525		254	
Turn Bay Length (ft)	400		400	400		300	400		400		400
Base Capacity (vph)	492	1474	664	114	953	1564	363	1266	1041	2274	941
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	1.16	0.66	1.09	0.77	0.32	1.04	1.07	1.20	0.99	0.42

## Intersection Summary

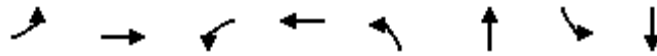
- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

## Queues

2022 Total AM.syn

01/08/2021

## 3: Richfield St/Alameda Dr &amp; Alameda Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	31	835	22	2434	71	76	139	73
v/c Ratio	0.22	0.26	0.05	0.77	0.22	0.17	0.42	0.16
Control Delay	21.4	16.7	5.6	18.7	44.0	13.5	48.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	16.7	5.6	18.7	44.0	13.5	48.3	14.6
Queue Length 50th (ft)	12	106	5	479	51	7	105	8
Queue Length 95th (ft)	m18	m116	8	478	42	7	171	0
Internal Link Dist (ft)		832		316		128		284
Turn Bay Length (ft)	100		100		100		225	
Base Capacity (vph)	143	3240	426	3211	329	453	328	452
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	0.22	0.26	0.05	0.76	0.22	0.17	0.42	0.16

## Intersection Summary

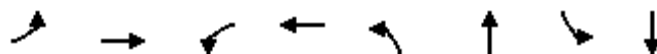
m Volume for 95th percentile queue is metered by upstream signal.

## Queues

2022 Total PM.syn

## 3: Richfield St/Alameda Dr &amp; Alameda Pkwy

01/08/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	142	1931	50	974	39	58	349	184
v/c Ratio	0.48	0.82	0.38	0.46	0.09	0.08	0.63	0.24
Control Delay	17.0	21.4	25.2	31.3	30.2	9.5	42.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	21.4	25.2	31.3	30.2	9.5	42.6	6.2
Queue Length 50th (ft)	27	265	22	230	24	5	284	10
Queue Length 95th (ft)	26	474	25	280	34	6	274	0
Internal Link Dist (ft)		832		316		128		282
Turn Bay Length (ft)	100		100		100		225	
Base Capacity (vph)	325	2418	137	2198	451	702	556	766
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	0.44	0.80	0.36	0.44	0.09	0.08	0.63	0.24

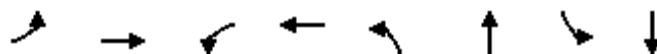
## Intersection Summary

## Queues

2040 Total AM.syn

## 3: Richfield St/Alameda Dr &amp; Alameda Pkwy

01/08/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	1150	22	3156	40	39	136	55
v/c Ratio	0.20	0.32	0.06	0.88	0.18	0.13	0.60	0.18
Control Delay	14.7	0.4	3.9	18.0	49.9	19.9	63.1	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	0.4	3.9	18.0	49.9	19.9	63.1	15.4
Queue Length 50th (ft)	2	1	4	720	30	5	108	3
Queue Length 95th (ft)	m6	m0	10	801	66	39	181	42
Internal Link Dist (ft)		832		316		128		280
Turn Bay Length (ft)	100		100		100		225	
Base Capacity (vph)	128	3581	357	3594	222	297	226	308
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	0.20	0.32	0.06	0.88	0.18	0.13	0.60	0.18

## Intersection Summary

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

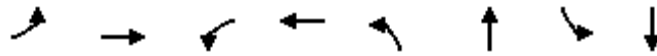


## Queues

2040 Total PM.syn

01/08/2021

## 3: Richfield St/Alameda Dr &amp; Alameda Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	2911	35	1293	34	47	330	52
v/c Ratio	0.31	0.95	0.32	0.45	0.09	0.10	0.86	0.11
Control Delay	4.7	32.6	17.0	18.5	40.4	13.1	72.7	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	32.6	17.0	18.5	40.4	13.1	72.7	11.9
Queue Length 50th (ft)	21	1107	11	252	25	4	307	3
Queue Length 95th (ft)	m18	m939	25	289	54	36	#478	37
Internal Link Dist (ft)		832		316		128		269
Turn Bay Length (ft)	100		100		100		225	
Base Capacity (vph)	262	3061	111	2901	383	489	384	491
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	0.31	0.95	0.32	0.45	0.09	0.10	0.86	0.11

## 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.

# APPENDIX F

## Conceptual Site Plan

